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Editorial

Alzheimer's: Can Our Nutrition Make It Falter?

Mohsin Masud Jan

Editor

Now, first of all let's discuss what exactly is Alzheimer's. Alzheimer's is a chronic neuro-degenerative disease that usually starts slowly and worsens over time. It is the cause of 60% to 70% of cases of dementia. The most common early symptom is difficulty in remembering recent events (short-term memory loss). As the disease advances, symptoms can include problems with language, disorientation (including easily getting lost), mood swings, loss of motivation, not taking care of oneself, and behavioural issues. As a person's condition declines, they often withdraw from family and society. Gradually, bodily functions are lost, ultimately leading to death. Although the speed of progression can vary, the average life expectancy following diagnosis is three to nine years.

That is the most basic textbook description of Alzheimer's there is. But, the main catch here is, we don't really know the cause behind this neurodegeneration. About 70% of the risk is believed to be genetic with many genes usually involved. Other risk factors include a history of head injuries, depression, or hypertension. The disease process is associated with plaques and tangles in the brain. A probable diagnosis is based on the history of the illness and cognitive testing with medical imaging and blood tests to rule out other possible causes. Initial symptoms are often mistaken for normal ageing. Examination of brain tissue is needed for a definite diagnosis. Mental and physical exercise, and avoiding obesity may decrease the risk of AD. There are no medications or supplements that decrease risk. No treatments stop or reverse its progression, though some may temporarily improve symptoms.

Now, moving on to the topic at hand, what I wanted to talk about today is whether or not a good healthy balanced diet creates any impact on Alzheimer's. From what little research we have available on this, I'll go through the main ones in this article.

The single, hottest nutritional discovery is that your risk of developing Alzheimer's is strongly linked to your level of the toxic amino acid homocysteine, which can be measured from a pinprick of blood on a home test

kit. The lower your level throughout life the smaller your chances of developing serious memory decline. Homocysteine is a neurotoxin, capable of directly damaging the medial temporal lobe, which is the area of the brain that rapidly degenerates in AD. Homocysteine is easily lowered with inexpensive B vitamins.

Omega-3 fats are most prevalent in carnivorous, cold water fish such as salmon, tuna, herring and mackerel. According to a study by Dr Martha Morris and colleagues at Chicago's Rush Institute for Healthy Aging, eating fish once a week reduces your risk of developing Alzheimer's by 60 per cent.

Inflammatory reactions invariably mean increased production of oxidants, and hence an increased need for antioxidants such as vitamin A, beta-carotene, and vitamins C and E, all of which have been shown to be low in those with Alzheimer's. Other antioxidants, including cysteine, glutathione, lipoic acid, anthocyanidins, and co-enzyme Q10 and melatonin may also prove important. In simple terms this means eating a lot more fresh fruit and vegetables – at least six portions a day – and oily fish and seeds.

The herb Ginkgo biloba has also demonstrated potential memory enhancing effects in the elderly. While a systematic review of all research up to 2002 concluded 'promising evidence of improvement in cognition and function with Ginkgo,' three recent randomized trials on Ginkgo have failed to confirm earlier positive results for those with cognitive impairment, however one showed mild improvement for those who were not diagnosed with dementia. Ginkgo may therefore have a role to play in prevention. A recent review concludes that the results with ginkgo are 'inconsistent and unconvincing, but not dangerous, for dementia.'

On conclusion, at this point, we do not have enough research and scientific data to prove any solid link between a healthy diet and the slowing down or stopping in the onslaught of Alzheimer's, but, we do have enough data, that just might at such a relation. And for me, that is enough to urge everyone to clean up their diets, it might just help our brains in the long run.

Comparison of Transient Hypocalcaemia Due to Parathyroid Injury in Subtotal versus Total Thyroidectomy

Muzaffar Aziz¹, Muhammad Azim Khan², Ghulam Murtaza¹ and Khalid Hussain Qureshi¹

ABSTRACT

Objective: The objective of this study was to compare the frequency of transient hypocalcaemia due to parathyroid injury in subtotal versus total thyroidectomy.

Study Design: Quasi Experimental Study.

Place and Duration of Study: This study was conducted in indoor Department of *General Surgery* Nishtar Hospital Multan from 01-03-2016 to 30-12-2016.

Materials and Methods: 60 patients of either gender and 25-60 year of age admitted for thyroidectomy were included in this study. All patients were divided into two groups. 30 patients were in total thyroidectomy group and 30 patients were in sub-total thyroidectomy group.

Thyroidectomies were performed by a standard procedure of capsular dissection; the total thyroidectomy method included the expulsion of entire gland from one tracheoesophageal section to other. In subtotal thyroidectomy method, complete lobectomy was performed on prevailing lobe and couple of grams of thyroid tissue was left along the posterior aspect of contralateral lobe. Every surgical specimen was subjected for histopathological examination to evaluate the presence of parathyroid gland in surgical specimen. Parathyroid injury and transient hypocalcaemia was noted in both groups.

Results: Age range in this study was from 25 to 60 years with mean age of 44.233 ± 6.77 years in Total thyroidectomy group while 44.466 ± 7.19 years in Sub-total thyroidectomy group. Majority of patients were females in both groups. Postoperative parathyroid injury was seen 36.7% in Total thyroidectomy group as compare to 10% in Sub-total thyroidectomy group ($P=0.014$). While transient hypocalcaemia was seen 23.3 % in Total thyroidectomy group as compare to 6.7% in Sub-total thyroidectomy group ($P=0.070$). Majority of transient hypocalcaemia was seen in patients with postoperative parathyroid injury in both groups.

Conclusion: We conclude that the sub total thyroidectomy has minimum chance of any injury to the parathyroid gland and it is better option for reducing the risk of transient hypocalcaemia.

Key Words: Thyroidectomy, Parathyroid injury, Hypocalcaemia

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INTRODUCTION

Hypocalcemia is one of the major complication after thyroidectomy which cause severe symptoms along with anxiety in patients by increasing hospital stay time.¹ Transient hypocalcaemia, observed after surgery, but it responds fairly to replacement supplement treatment in a few days.² Hypocalcemia is called permanent when calcium levels remain abnormal about 6 months.² The fundamental driver of hypocalcaemia is optional hypoparathyroidism after damage to, or devascularization of, at least one parathyroid gland amid surgery.³

Mistakenly parathyroid evacuation is also responsible.³ Factors for post-surgery hypocalcaemia after total thyroidectomy incorporate size of thyroid gland, substernal augmentation of the thyroid, kind of thyroid issue, degree of procedure, and if re-procedure is essential.³ The conceivable reasons for hypocalcaemia are damage to the parathyroid gland, broad resection, neck surgery with total thyroidectomy, Graves' illness, tumor, and hemo dilution.⁴

In these parathyroid gland damage is the most widely recognized variable for creating hypocalcemia.⁵ To minimize parathyroid damage, an endeavor to search for all the parathyroid glands and safeguarded their blood supply ought to be made in the procedure. Notwithstanding, it is hard to discover all parathyroid glands and to protect these recognized parathyroid glands because of the high likelihood of perpetrating damage to their blood supply during the search procedure and analyzation. Additionally, the degree of thyroidectomy and node surgery improves the probability of harming the blood supply of the parathyroid glands.^{6,7} Parathyroid glands might be found inside the postoperative specimen, when it was

¹. Department of Surgery, Nishtar Medical College Multan.

². Department of Surgery, Ghazi Khan Medical College DG Khan

Correspondence: Dr. Muhammad Azim Khan, Associate Professor of Surgery, Ghazi Khan Medical College DG Khan
Contact No: 0300-7331709
Email: azimkhan874@hotmail.com

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accidentally evacuated with the thyroid or lymph node during the procedure.⁸ It is intriguing to know what number of parathyroid glands ought to be saved in situ keeping in mind to avert postoperative hypocalcaemia. The aim of this study was to compare the frequency of transient hypocalcaemia due to parathyroid injury in subtotal versus total thyroidectomy.

MATERIALS AND METHODS

This quasi experimental study was conducted in indoor Department of *General Surgery* Nishtar Hospital Multan from 01-03-2016 to 30-12-2016. 60 patients of either gender and 25-60 year of age admitted for thyroidectomy were included in this study. Patients of anomalous serum albumin (not in range of 3.4-4.8 g/dl), abnormal calcium level (not in range of 8.0-10.4 mg/dl; not normal pre-procedure parathyroid hormone levels (not in range of 9.5-75 pg/ml) were excluded.

All patients were divided into two groups. 30 patients were in total thyroidectomy group and 30 patients were in sub-total thyroidectomy group.

Before procedure calcium level was measured to eliminate any other reason of abnormal calcium level. Thyroidectomies were performed by a standard procedure of capsular dissection; the total thyroidectomy method included the expulsion of entire gland from one tracheoesophageal section to other. In subtotal thyroidectomy method, complete lobectomy was performed on prevailing lobe and couple of grams of thyroid tissue was left along the posterior aspect of contralateral lobe. The measure of thyroid tissue was assessed as 1 cm³=1gram. Intermittent laryngeal nerves were routinely recognized on both sides and each endeavor was made to distinguish and save the parathyroid glands.

All wounds were shut with suction drains and in absence of any post op complication patients were sent home on the fifth post operation day. Every surgical specimen were subjected for histopathological examination to evaluate the presence of parathyroid gland in surgical specimen. Presence of any parathyroid gland in surgical specimen was labeled as parathyroid injury.

Transient hypocalcaemia was defined as if there was no history of hypocalcaemia before procedure but showed any one or more symptoms (1. Circumoral & digital numbness 2. Paraesthesia. 3. Carpopedal spasm. 4. Laryngeal spasm. 5. Fits.) after surgery for 1-5 days were defined as transient hypocalcaemia. It will be confirmed by serum calcium level < 8.5 mg/dl. Data regarding parathyroid injury and Transient hypocalcaemia was noted in both groups.

Data was statistically analyzed with IBM-SPSS-V-22. Frequency and percentage was calculated for qualitative variables like gender, parathyroid injury and hypocalcaemia. Chi-square test was applied to compare hypocalcaemia in both groups taken $p \leq 0.05$ as

significant. Effect modifier like parathyroid injury was controlled by stratification to see its effect on hypocalcaemia. Post stratification chi-square test was applied; p -value ≤ 0.05 was taken as significant.

RESULTS

Age range in this study was from 25 to 60 years with mean age of 44.233 ± 6.77 years in Total thyroidectomy group while 44.466 ± 7.19 years in Sub-total thyroidectomy group. Majority of patients were females in both groups as shown in Table-I.

Table No.1: Basic Demographics

Demographics	Total thyroidectomy group n=30	Sub-total thyroidectomy group n=30
Mean Age (years)	44.233 ± 6.77	44.466 ± 7.19
Gender	n(%)	n(%)
Male	7(23.3%)	9(30%)

Postoperative parathyroid injury was seen 36.7% in Total thyroidectomy group as compare to 10% in Sub-total thyroidectomy group ($P=0.014$) as shown in Table-2.

Table No.2: Comparison of Parathyroid Injury in both groups n=60

Parathyroid Injury	Total thyroidectomy group n=30	Sub-total thyroidectomy group n=30	p value
Yes	11(36.7%)	3(10%)	0.014
No	19(63.3%)	27(90%)	

While transient hypocalcaemia was seen 23.3 % in Total thyroidectomy group as compare to 6.7% in Sub-total thyroidectomy group ($P=0.070$) as shown in Table 3.

Table No.3: Comparison of transient hypocalcaemia in both groups n=60

Transient hypocalcaemia	Total thyroidectomy group n=30	Sub-total thyroidectomy group n=30	p value
Yes	7(23.3%)	2(6.7%)	0.070
No	23(76.7%)	28(93.3%)	

Table No.4: Stratification of transient hypocalcaemia with respect to parathyroid injury in both groups

With parathyroid injury

Group	Hypocalcaemia		p value
	Yes	No	
Total thyroidectomy	7(63.6%)	4(36.4%)	0.922
Sub-total thyroidectomy	2(66.7%)	1(33.3%)	

Without parathyroid injury			
Group	Hypocalcaemia		p value
	Yes	No	
Total thyroidectomy	0(0%)	19(100%)	1.000
Sub-total thyroidectomy	0(0%)	27(100%)	

Majority of transient hypocalcaemia was seen in patients with postoperative parathyroid injury in both groups. 7(63.6%) out of 11 patients of parathyroid injury show transient hypocalcaemia in Total thyroidectomy group while 2(66.7%) out 3 patients of parathyroid injury show transient hypocalcaemia in Sub-total thyroidectomy group as shown in Table-4.

DISCUSSION

Transient hypocalcaemia was seen 23.3 % in total thyroidectomy group as compare to 6.7% in sub-total thyroidectomy group ($P=0.070$). Hypocalcaemia after total thyroidectomy is generally transitory. A low frequency of 3 to 8 % has been accounted for constant hypocalcaemia in studies.⁹

In a study out of 310 patients 17 patients (5.55%) had transient hypocalcaemia with total thyroidectomy.¹⁰

Subtotal thyroidectomy in which little pieces of thyroid tissue are left helps adjusting the more serious dangers of parathyroid failure with additional focal benefits that leftovers may have of some function of thyroid post-operatively.¹¹

The magnificence of this strategy is by all accounts blurred when we envision repeat procedure. On the off chance that if recurrence happened because of left over thyroid tissue and likely challenges that must be confronted. But when we go through the studies there is no more prominent distinction in recurrence after total and subtotal thyroidectomy within the sight of thyroid substitution treatment for entire life of patients.¹² there is critical decrease in the rate of complications of transient parathyroid failure that lessens the patient's troubles and indoor stay after procedure.

The incidence of transient hypocalcaemia after subtotal thyroidectomy is around 2 to 3 % and most extreme recorded is 8% as indicated by few studies.⁹ These figures are fundamentally not as much as that found after total thyroidectomy. We also showed comparable outcomes in our study; 6.7% recurrence of transient hypocalcaemia after total thyroidectomy and 23.3% after subtotal thyroidectomy.

In the present study, the main reason of postoperative hypocalcaemia was unsuccessful conservation of the

parathyroid gland. Extensive dissection of central node has been recognized as a hazard figure for hypocalcaemia by Thompson et al.¹³ The analyzation may expand the danger of damage to the inferior parathyroid glands and its blood supply. The parathyroid glands and their blood supply can be isolated from the thyroid organ and the node inside the fat by careful dissection. There is some kind of a limit, via precisely analyzing the overlying belt, between the parathyroid gland and their blood supply inside the thymic tissue and the node inside the fat. Extreme care ought to be utilized when a central node procedure is to be directed.

There are many reasons why endeavors at saving the parathyroid gland may fall flat. Parathyroid gland may not be effectively saved in the event that they are found anterior to or within thyroid gland. Parathyroid glands that were evacuated deliberately and afterward embedded into muscle cannot survive. Direct injury to the parathyroid gland that cause organ staining tend to bring about the parathyroid gland not being preserved.¹⁴

CONCLUSION

Our study conclude that the sub total thyroidectomy helps to reduce any injury to the parathyroid gland is the better option for reducing the risk of hypocalcaemia.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Aggression and Violence Towards Doctors and Paramedics Staff in Government Hospitals in Lahore, Pakistan

Sahar Farial¹ and Rabia²

ABSTRACT

Objectives: To detect the frequency and consequences of workplace violence possible factors related to physician and nurses in a public medical facility in Lahore, thus providing a basis for appropriate interventions.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Outdoor and Indoor Emergency of Jinnah Hospitals, Lahore from March to June, 2016.

Materials and Methods: The sample of 150 respondents including doctors and nurses were interviewed. Data was analyzed by (SPSS) version 17.

Results: Over two-thirds of the respondents (n = 101 / 150, 67 %) were victims of violent of abuse (n = over the past 12 months and (87 / 101, 86%) were the main types of aggression encountered. Only 61/101 (60%) of violent victims reported incidents of violence and most of the incidence (25/61, 41%) reported to colleagues only. "No previous action" (75%) was the most common reason not to report. Workers exposed to violent aggression, the same high level of psychological distress. The most common attackers were the patient's family (n = 68 / 101, 68%) followed by the patient himself (n = 31 / 101, 31%). Overcrowding and lack of security are cited as the main causes of such incidents.

Conclusion: The establishment of health care workers in public hospitals in Lahore is often subject to aggression and violence, and it is associated with many adverse consequences including high levels of stress. Appropriate precautionary measures, including occupational support, require a safer environment for hospitals.

Key Words: Workplace violence, Aggression, Health care workers, Work stress

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INTRODUCTION

Workplace violence and aggression is considered to be an important occupational hazard in health care settings worldwide,¹ and is a subject of increasing interest lately, both in the developed and developing countries.² Although steadily increasing there is no standard agreed definition of violence in literature. The World Health Organization (WHO) defines the threat of violence as 'intentional use of force that causes an individual or group of people to cause injury, death or psychological harm.'³ Workplace Violence. Another definition used by the International Labor Organization (ILO) in the study of extermination of former vessels is that 'events in the context of abuse, threat or attack are related to the definition of their work.'⁴ the use of violence and demographic research Differences and in what constitutes human perceptions of change across

different cultural and social violence make it difficult to compare previous research findings. The exact incidence of violence and aggression to health care workers (HCW) is unknown as reported under common.⁵ In addition, many health-care workers have observed an acceptance of violence and aggression as part of their clinical work.⁶ Still, some studies have shown that 90% of health care workers report exposure to violence at work, which is fairly alarming.⁷ Evidence suggests that violence and the health care aggression results not only in negative affect on the physical and emotional well-being of affected one, but also has serious consequences for the patient's effective health care delivery.⁸ In addition to the dissatisfaction caused by the material addressed and low productivity.^{9, 10} Many studies have focused on the prevalence of violence and aggression and the huge factor in psychiatric hospitals,^{11,12} of the A & E working environment in public hospitals¹³, welfare sectors¹⁴ and nursing homes but most of these the study had have taken in the developed world. The results of these studies can only be applied to the developing world to a limited extent to the countries, including Pakistan, mainly because of the different organizational structures of medical settings. Violence and wasteland are a major concern in Pakistan's technological composition, but the research needs to be addressed in

¹. Department of Medicine, Rural Health Centre, Sheikhpura.

². Department of Obstetrics & Gynecology, Saira Memorial Hospital, Lahore.

Correspondence: Dr. Sahar Farial, Women Medical Officer,
Department of Medicine, Rural Health Centre, Sheikhpura.
Contact No: 0334 8178583
Email: Saharfari@gmail.com

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order to develop a knowledge gap on precautionary measures. Another area that needs to be clarified is the reporting of these events, as well as institutional policies and training to deal with such incidents.

MATERIALS AND METHODS

Cross sectional study conducted in govt. hospitals of Lahore. The sample of 150 respondents including doctors and nurses were interviewed.

The ethics committee approved the study and was given the institutional review board. Data were collected through the various major departments of the hospital during the data collection period, at different times, to ensure that the various shift staff were on duty. We used the non-probabilistic sampling method and all staff (doctors and nurses) in their wards during the day were discussed and invited to participate in the study.

The oral and written interpretation of the purpose of this study was provided to participants, and informed consent was sought by former participants who completed the questionnaire. The questionnaire was anonymous to encourage participation. It is administered and collected immediately after completion of the data collection team. The questionnaire is composed of four parts. The first section seeks information about the general population of respondents (age, Kent, years of experience in the health care sector, occupation, educational level, their department). Section II gives respondents a binary file (yes / no) to answer questions about whether they have been subjected to any violence in the past 12 months. The answer is that certain people are asked to identify types of violence (physical aggression, verbal attacks, threats, harassment and verbal and physical definitions of terminology and previous studies on this topic, 17 sources of violence as well as local and timed violent events. Respondents were also victims of violence being asked to identify possible causes of violence as they encountered and their possible scam sequences were used as a basis for their well-being using a closed checklist of references the subject of the review. In the last section, respondents were asked to rate three levels of violence against and support training colleges at all levels, low, intermediate and good, and to seek to prevent such incidents in the future in their workplace. Data was analyzed by (SPSS) version 17.

Descriptive statistics are used to report the results. Chi-square tests were used to compare the frequency of violence among different professional groups between men and women. P values <.05 are considered to be equally important.

RESULTS

Approximately 150 health care workers out of 210 agreed to participate in the study (response rate 71%). No further data were collected from those who refused

to participate and were not available for analysis. Respondents were mainly young, with an average age of 30 ± 5.02 years. Male ($n = 93$, 62%) accounted for the majority of respondents. Doctors accounted for 80% ($n = 120$) and nurses 18% ($n = 25$) of the study samples. Respondents were recruited from three divisions; Medical and Allied ($n = 85$, 56%), Surgery and Allied ($n = 59$, 39%) and Emergency Department ($n = 07$, 5%).

Table No. 1: Type, Place, Time, Source & Perceived Causes of Violent Incidents Encountered By Respondents In Tertiary Care Public Sector Hospitals In Lahore.

Variables	Frequency	Percentage
Place of violent act (n=101)		
Emergency department	76	76%
Ward	28	29%
Outdoor	12	13%
Time of violent act (n=101)		
Day	46	46%
Evening	39	39%
Night	36	37%
Source of violence (n=101)		
Patients Relatives	67	68%
Patient	30	31%
Co-workers	50	51%
Others	4	4%
Possible Reasons for violence (n=150) (all respondents)		
Overcrowding	55	37%
Lack of security	49	33%
Negative media impact	51	34%
Excessive	46	31%
Shortage of staff	37	25%
Unmet Patients demand	34	23%
Patients health	32	21%
Lack of space	28	19%
Poor work organization	20	13%
Staff workload	18	12%
Irritating Staff attitude	7	5%
Inexperienced Caregivers	5	3%

Frequency and types of violence and aggression:

Over two-thirds of the respondents ($n = 101 / 150$, 67 %) were victims of violent of abuse ($n =$ over the past 12 months and ($87 / 101$, 86%) were the main types of aggression encountered. Workers exposed to violent aggression, the same high level of psychological distress. The most common attackers were the patient's family ($n = 68 / 101$, 68%) followed by the patient himself ($n = 31 / 101$, 31%). Overcrowding and lack of security are cited as the main causes of such incidents. Table 1 shows the various spectroscopic violent events, as well as the perceived causes, according to respondents.

Table No.2: Reporting of violence and reasons for not reporting by the health care professionals

Aspects		Frequency	%age
Reporting violent event (n=101)	Yes	61	61%
	No	40	39%
To whom reported (n=61)	Colleagues	26	41%
	Direct Supervisor	15	26%
	Hospital Management	14	24%
	Police	4	5%
	Relatives	2	3%
Reasons for not reporting (n=40)	No Previous action	30	73%
	Feel it as part of job	15	37%
	Fear of consequences	5	11%
	Preparatory apologized	4	10%
	Lack of evidence	2	7%

Table No.3: Consequences of violence & aggression in workplace as identified by the study respondents

Effect of Violence	Frequency (150)	%age
Fear	30	20%
Anger/Rage	62	41%
Distress	45	30%
Anxiety/self-doubt/insecurity	35	23%
Humiliation	31	21%
Guilt	7	5%
Disappointment	37	25%
Helplessness/sadness	16	11%
Depression	12	8%
Became careful	20	13%
Physical impairment	-	-
Intention to quit workplace	13	9%
Intention to change behavior	9	6%
Direct for revenge	2	1%
No reaction	9	6%

Reporting of the incidents: Only 61/101 (60%) of violent victims reported incidents of violence and most of the incidence (25/61, 41%) reported to colleagues only. "No previous action" (75%) was the most common reason not to report.(Table 2).

Consequences of violence at work: Seventy interviewers (47%) felt extremely stressed due to violence and various consequences of violence identified in (Table 3).of their institutions trained to handle (65%) of workplace violence and. The level of support (61%) for workforce violence was 75% low.

Exposure to response to recommendations to prevent future dents of violence

Anger and rage are re-events in the workplace reported by 42%, indicating high emotional distress. Almost 8% respondents want to quit their job due to violence at workplace.

DISCUSSION

A significant proportion (72%) of respondents in the study experienced workplace violence during the past 12 months. The literature review revealed a range of ranging from 0.5% to 90%.¹⁵⁻¹⁷ Other studies that focused on oral and physical aggression separately as healthcare 72% experienced physical and 80% verbal aggression over the last 12 months in Germany.¹⁸ one out of ten workers reported physical attacks and one out of three non-physical attacks prevalent in public health care facilities in Italy.¹⁹ Frequency of verbal attacks cy facing speech and physical aggression direct contact of health care with highly stressed patients and families due to illness,²⁰ unrestricted visits of attendants in hospital non-sports violence HCW with a high degree of emphasis on patients tourists in the hospital, over crowded,^{10,11} and lack of hospital staff training in dealing with aggression are the major factors of high incidence of violence in hospitals.

Differences between study setups, medical systems and population studied are difficult to compare with the results of various studies but still very high numerical reports in our and previous studies underscore the importance of violence and aggressive problems faced by healthcare workers in the workplace. Violence and aggression, negative consequences for physical and mental health are also confirmed in previous studies. The study found that healthcare workers coping with aggression was similar to different national, cultural characteristics and settings, including immediate reactions, such as fear, anger, anxiety,^{20,21} and intends to quit as profession.²² As Expectations of our study-respondents who report-like anger, pain and guilt, as well as high work-related stress, thus transforming staff dissatisfaction and poor patient care in the negative effects of exposure to violence have been vulnerable to the health care service system. Our findings corroborate the report of the pre-set report under the HCW, the violence and aggression incident facing institutional authorities. Most of the staff seemed to have received support from the informal discussions of their colleagues. Only a small part of the actual situation of cases report,^{5,23} the trend of emergence of also bullying research among the faces by junior doctors in Pakistan.²⁴ No support from seniors, complicated reporting protocols and policies from institutes in this

regards and acceptance of aggression causes low case report.⁶

Majority of the respondents felt unprepared to deal with aggression and violence at workplace. Institutions should offer better training for managing violence and effectiveness of the training should be assessed by regular feedback from the staff. Several limitations need to be taken into account in the interpretation of our findings. First, because our study is limited to one institution, the result is limited. However, our findings are consistent with the literature on the subject and we do not have any reason to believe that this situation is not the same in other public health institutions in Bahawalpur. Retrospective studies also lead to recall bias. We rely on staff reporting measures to focus on the HCW point of view, which may not be accurate in all cases, but the lack of relevant records and reports allows us to use any objective criteria. Also how the event is viewed rather than the actual event itself has been observed to have significant consequences for individual.

CONCLUSION

In short, violence in Pakistan's medical institutions is a hidden phenomenon. Our findings suggest that it exists and should be avoided. There is also a need for good work practices, along with a downgrade of technical policies and organizational security policies that may also reduce the risk of workplace violence in the direction of staff training. Support for workplace and team spirit can be further useful and effective in this regard.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Awareness of Mothers Regarding Concept and Management of Diarrhea in Children of Taunsa Sharif, Pakistan

Hafiza Mehreen Gul¹, Sadia Batool², Sidra Bilal³ and Muhammad Ishtiaq⁴

ABSTRACT

Objective: To assess the knowledge of mothers regarding diarrhea and the management practices of pediatric diarrhea.

Study Design: Descriptive /cross-sectional study

Place and Duration of Study: This study was conducted at Tehsil Headquarter Hospital Taunsa Sharif from June 2016 to September 2016.

Materials and Methods: A Performa comprising of questions was prepared aiming was to know the understanding of mothers regarding diarrhea. Presented a mother of a baby suffering from diarrhea had been instructed by the primary doctor to take the most appropriate answer. All mothers are willing to answer questions that were included in the study. The results were obtained using SPSS 23. Mean median, mode calculated and results presented by using tables and charts.

Results: Total 90 mothers were interviewed with boys 43 (48%) and girls were 47 (52%). The majority of mothers 60 (66.5%) were belong to low socioeconomic status. The median age was 1.5 years. Between the ages of 20-30, 67 (74%) mothers, 17 (19%) over 30 years, and only 6 (7%) mothers younger than 20 years. 68 (76%) mothers knew that how to make correct preparation of ORS, 14 (15%) was incorrect and 8 (9%) did not know how to prepare oral rehydration salts (ORS). 47 (52%) mother knew the wrong amount though 35 (39%) knew the right amount giving after each loose motion. Most of the mothers 40 (44%) were utilizing municipal water, 28 (31%) groundwater, 19 (21%) water filters and 3 (3.34%) mothers were buying it.

Although 40 (44%) of mothers thought that as the number of increased stool is diarrhea, only 14 (15%) of mothers thought diarrhea as stool with liquid concentration. However, 33 (37%) mothers thought these two features of stool as diarrhea and 4 (4.5%) mothers did not know about diarrhea. 26 (29%) of mothers considered dirty hands while, feeder 14 (15%) and 15 (16%) water thought as pathogenic factors, respectively. Mothers of 60 (66%) were educated and 31 (34%) were uneducated. 79 (87%) mothers were housewives and 12 (13%) were working women.

Conclusion: The mother's knowledge about diarrhea has increased in all its aspects. It is necessary to recognize the concept of quantitative signs of dehydration, oral rehydration salts given and to promote continued conventional feeding during illness.

Key Words: ORS; Diarrhea; Dehydration

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INTRODUCTION

Diarrhea is one of the leading causes of child mortality under the age of five, responsible for death of 760,000 children per year in the world.¹⁻⁴ Especially in underdeveloped countries⁵.

Most children die because of severe water loss (dehydration) and fluid loss, which can be compensated by oral rehydration (ORS) in most cases.⁶⁻⁹ Malnourished children have impaired immunity to life-threatening diarrhea, usually due to the high risk of bacterial infection, due to the large number of bacteria, through contaminated food, and the spread of parasite water from human to person.¹

The Integrated Management of Childhood Illness (IMCI) guidelines advise the use of oral rehydration therapy (ORT), along with continued feeding, and zinc for appropriate management of diarrhoea.¹⁰

Most of the diarrhea episodes are cured at homes and mothers are the primary caregivers of children under the age of five.¹¹ WHO recommends that mothers and caregivers should be able to identify signs of dehydration, including excessive lethargy, poor skin tension and irritability, and baby without tears. One study showed that 73.1% of mothers identified only one

¹. Department of Obstetrics & Gynecology, Basic Health Unit Lakhani, Taunsa Sharif.

². Department of Obstetrics & Gynecology, THQ Hospital, Jatoi.

³. Department of Obstetrics & Gynecology, DHQ Hospital, Rajanpur.

⁴. Department of Obstetrics & Gynecology, BVH Bahawalpur.

Correspondence: Dr. Hafiza Mehreen Gul, Women Medical

Officer, Basic Health Unit Lakhani, Taunsa Sharif.

Contact No: 0342 6417280

Email: mehreen408@gmail.com

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of these signs.¹² Therefore, knowledge about this diarrhea mother is very important part. Awareness and perception of mothers regarding diarrhea and individual and family actions to prevent and / or control the disease, have vital importance of reducing diarrhea-related diseases and mortalities.¹³

Oral rehydration therapy (ORT) is simple, inexpensive and most effective in primary Interventional management of diarrhea. It can be easily initiated by the mother at home / caregiver as soon as possible in the onset of diarrhea.¹⁴

MATERIALS AND METHODS

This was Cross-sectional descriptive study; location of this study was Tehsil Headquarter hospital Taunsa Sharif and was conducted from June 2016 to September 2016.

A Performa comprising of questions was prepared aiming was to know the understanding of mothers regarding diarrhea

Presented a mother of a baby suffering from diarrhea had been instructed by the primary doctor to take the most appropriate answer. All mothers are willing to answer questions that were included in the study. Mothers if they were reluctant to answer the questionnaire were skipped from study.

Data Analysis: The results were obtained using SPSS 23. Mean median, mode calculated and results presented by using tables and charts.

RESULTS

Total 90 mothers were interviewed with boys 43 (48%) and girls were 47 (52%). The majority of mothers 60 (66.5%) were belong to low socioeconomic status. The median age was 1.5 years. Between the ages of 20-30, 67 (74%) mothers, 17 (19%) over 30 years and only 6 (7%) mothers younger than 20 years. 68 (76%) mothers knew that how to make correct preparation of ORS, 14 (15%) was incorrect and 8 (9%) did not know how to prepare oral rehydration salts (ORS). 47 (52%) mother knew the wrong amount though 35 (39%) knew the right amount giving after each loose motion. Most of the mothers 40 (44%) were utilizing municipal water, 28 (31%) groundwater, 19 (21%) water filters and 3 (3.34%) mothers were buying it.

Although 40 (44%) of mothers thought that as the number of increased stool is diarrhea, only 14 (15%) of mothers thought diarrhea as stool with liquid concentration. However, 33 (37%) mothers thought these two features of stool as diarrhea and 4 (4.5%) mothers did not know about diarrhea. 26 (29%) of mothers considered dirty hands while, feeder 14 (15%) and 15 (16%) water thought as pathogenic factors, respectively. Mothers of 60 (66%) were educated and 31 (34%) were uneducated. 79 (87%) mothers were housewives and 12 (13%) were working women.

The majority of mothers 82 (92%) were aware about one or more dehydration signs. Only a small number 6 (7%) of mothers did not have any knowledge of dehydration signs. Nearly half of the participating mothers 46(51%) want to stop routine diet during diarrhea. Most of the participating mothers 61(68%) were against to give medicine by themselves while 28(31%) favored self-medication.

DISCUSSION

Acute watery diarrhea is a self-limiting disease and over 90% of cases can be successfully treated with oral rehydration therapy and continued feeding without using anti-diarrheal drugs.¹⁵ Socio-demographic factors like education of the mothers, employments, and mother's age consociate with knowledge of the mothers around diarrhea and diarrhea care

Although mothers know that the level of diarrhea and the management at home, level of awareness, knowledge is often inadequate. This study shows that 92 (96.8%) of mothers believe that the number of stools is increased or stool with fluid congruent or both as diarrhea.

According to another study, 63.6, 64.3 and 75 mothers have a certain understanding of diarrhea and its management.¹⁶⁻¹⁸ In recent years, many studies have demonstrated increased knowledge about oral rehydration.

In our study, 90.5% of mothers were having knowledge of oral rehydration,¹⁹ whereas in other studies 95%²⁰ and 97.6% of mothers were having facts about oral rehydration salts and its usefulness is also in management due to dehydration of diarrhea.²¹

A similar study by Ahmed A et al, in Rawalpindi & Islamabad, 75% of mothers²² and a study by Bhatia et al 86.7% of mothers claiming that they have knowledge about oral rehydration solution (ORS).²³ The percentage difference was influenced by maternal knowledge and practice regarding oral rehydration, which is expected to be influenced by the mass media and the time factor of health professionals.

For the preparation of ORS, in our study 73 (76.8%) of mothers correctly reviewed oral rehydration was also consistent with the preparation of study by Aiza M, et al, 228 (76%).

A study by Taha found that 64% of mothers and another study in Lahore, 69.3% of mothers do the correct preparation of ORS.^{24,25} This percentage increase may be due to the control of diarrheal disease programs promoted by Pakistan government-supported activities.²⁶

In the current study, 64 (67.4%) of mothers were in against to start medicine by themselves, in a study by Aiza M, et al¹⁹ where only 21% of patients were against self-medication. Finding in our study 50.5% of mothers stopped regular feeding during diarrheal episodes. Findings in other study show that 96 cases (32%) of

cases stopped or reduce feeding.¹⁹ In a study by Khan MA, et al, same diet as before diarrhea was given in 59.9% of cases and in 40.6% of cases either feeding was stopped or reduced in quantity.²⁷ while in other scrutiny 43.9% reduced or stopped usual food or mothers breastfeeding, 48.6% gave normal amounts of food or breastfeeding & only 7.5% increase in the amount of food or breast-feeding of children with diarrhea.²⁸

Foods should never be limited during illness, and the preferred goal should be to maintain energy and higher levels of other nutrients in the intake. Community disease control give recommendation those children receiving semi-solid or solid foods, were continue their routine diet during diarrheal episodes.²⁹

In this study 28.4% of mothers attributed dirty hands as major factor of diarrhea in other study FGD participants considered teething as the chief source of diarrhea.³⁰ In another study in rural communities in Kenya, 58.2% thought that contaminated water was the chief reason of diarrhoea.³¹

CONCLUSION

The mother's knowledge about diarrhea has increased in all its aspects. It is necessary to recognize the concept of quantitative signs of dehydration, oral rehydration salts given and to promote continued conventional feeding during illness to handle this problem carrying high morbidity and mortality.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Comparative Study of Bevacizumab and Triamcinolone in Macular Edema Secondary to Branch Retinal Vein Occlusion

Shahnawaz Channa, Ameer Ahmed Memon and Farhan Khashim Al-Swailmi

ABSTRACT

Objective: The present study was conducted to compare the magnitude of efficacy and safety of Intra-Vitreous Bevacizumab (IVB) and intra-vitreous Triamcinolone (IVT) injection in Branch Retinal Vein Occlusion (BRVO).

Study Design: Comparative case series study

Place and Duration of Study: This study was conducted at the Department of Ophthalmology, El-Ibrahim Eye Hospital and Al-Tibri Medical College from January 2013 to March 2015.

Materials and Methods: A sample of 64 BRVO cases was selected by non-probability purposive sampling as per inclusion and exclusion criteria. The subjects were randomly grouped into; Group I. Bevacizumab (IVB) (n=32) and Group II. Triamcinolone (IVT) (n=32). Baseline vision (BCVA) was noted using ETDRS acuity chart. Central macular thickness (CMT) was computed using optical coherence tomography (OCT). Informed written consent was taken. The data was analyzed on Statistix 8.1 using student t-test and Chi square test. P-value of ≤ 0.05 was taken significant.

Results: Mean $\pm$ SD CMT in group I and II at baseline was $365.71 \pm 119.7 \mu$ and $363.91 \pm 153.9 \mu$ respectively ($p=0.95$). Similarly, difference was not observed in BCVA for near between 2 groups at first and second visit (week 4) ($p \geq 0.85$). At week 8 follow up, there was significant difference in the BCVA between groups (for distance $p = 0.03$ and for near $p = 0.017$). At week 8, mean CMT was reduced in IVB group compared to IVT ($p=0.045$). Mean $\pm$ SD duration of BRVO was 8.37 ± 4.21 and 8.35 ± 4.3 months ($p=0.09$) in IVB and IVT respectively. Subconjunctival hemorrhage, cataract and raised IOP were observed in IVT group.

Conclusion: Bevacizumab is more effective than triamcinolone in improving vision and reducing macular edema secondary to Branch Retinal Vein Occlusion. Triamcinolone showed more complications.

Key Words: Bevacizumab, Triamcinolone, Macular edema

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INTRODUCTION

Branch retinal vein occlusion (BRVO) occurs in one of the tributary of retinal vein. Its incidence in outpatient departments approximates to central retinal vein occlusion.¹ Branch retinal vein occlusion (BRVO) is a vision disabling clinical condition. Its incidence after 4th decade onwards is reported as 2.14/year/1000 population.^{2,3} Previous studies have suggested BRVO predisposes to increased expression of a cytokine called vascular endothelium growth factor (VEGF). VEGF is involved in the pathogenesis of macular edema (ME).⁴

Department of Ophthalmology, College of Medicine,
Northern Border University Arar, Kingdom of Saudi Arabia

Correspondence: Dr. Shahnawaz Channa, Assistant Professor
of Ophthalmology, College of Medicine, Northern Border
University Arar, Kingdom of Saudi Arabia

Contact No: 00966530731004

Email: drchanna@yahoo.com

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Currently there is no effective and unanimously accepted treatment option for BRVO-related ME.² One modality of treatment used for ME includes photocoagulation but achieved limited results. Another available treatment option is the triamcinolone which has shown variable success rates but at a cost of high complication rates.^{1,4}

Currently, a newer drug modality is widely used called the Bevacizumab. Bevacizumab is a recombinant humanized monoclonal antibody which blocks angiogenesis by inhibiting all isoforms of VEGF. VEGF stimulates the angiogenesis in a variety of diseases, including the ME.⁵ Bevacizumab inhibits and reduces not only the neovascularization but also macular edema.⁶ Bevacizumab reduces macular edema and improves vision in BRVO related ME.⁷ Triamcinolone is also effective but has a lot of reported complications.⁸

Although previous studies had demonstrated the advantages and disadvantages of one treatment modality over other, however, the results are disputed and inconclusive.^{9,10}

Therefore, the present study was designed to investigate efficacy and safety of intravitreal triamcinolone acetonide (IVT) and intravitreal bevacizumab (IVB) in the treatment of ME related to BRVO at our tertiary care hospital.

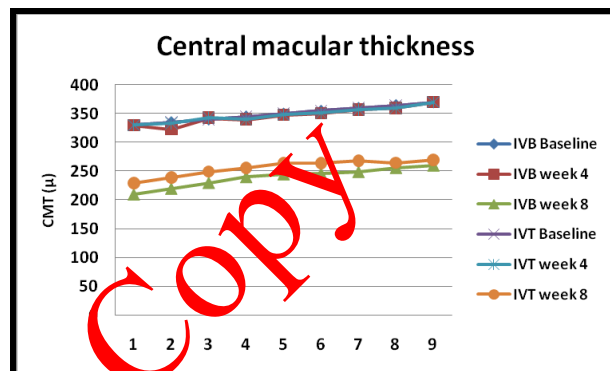
MATERIALS AND METHODS

The present comparative case series study was conducted at the Department of Ophthalmology, Department of Ophthalmology, El-Ibrahim Eye Hospital and Al-Tibri Medical College from January 2013 to March 2015. A sample of 64 patients of BRVO was selected and divided into two groups; Group I. Intravitreal Bevacizumab (IVB) (n=32) and Group II. Intravitreal triamcinolone (IVT) (n=32). Subjects were selected as per predefined inclusion and exclusion criteria. BRVO related ME cases were included by non-probability purposive sampling. Macula looking thicker than surrounding parts of retina was deemed as ME positive as examined by slit lamp biomicroscope and 90 diopter lens. Diagnosis of BRVO was made if multiple flame-shaped hemorrhages in any quadrant of fundus with dilated retinal vein were observed. Dilated retinal vein was defined as vein with caliber larger than rest of veins on funduscopy. The funduscopy was performed with slit lamp biomicroscope and 90 diopter lens. Patients with diabetic maculopathy, traction retinal detachment, macular pucker, vitreous hemorrhage, maculopathy of other etiologies and central retinal vein occlusion (CRVO) were excluded. Volunteers were asked to sign informed written consent. Baseline vision

(BCVA) was checked by ETDRS acuity chart. Optical coherence tomography (OCT) was used to computed central macular thickness (CMT). Improvement of vision and central macular thickness were noted at baseline, week 4 and week 8. The data was analyzed on statistix 8.1 (USA). Continuous and categorical variables were analyzed by Student's t test and Chi-square test respectively. Data was analyzed at 95% confidence interval with significant p-value of ≤ 0.5 .

RESULTS

Age mean $\pm$ SD was noted as 51.6 ± 7.01 and 52.1 ± 5.6 years in group I and II respectively ($p=0.93$).



Graph No.I. Graph shows the central macular thickness in Bevacizumab (IVB) and triamcinolone (IVT) at baseline, week 4 and 8.

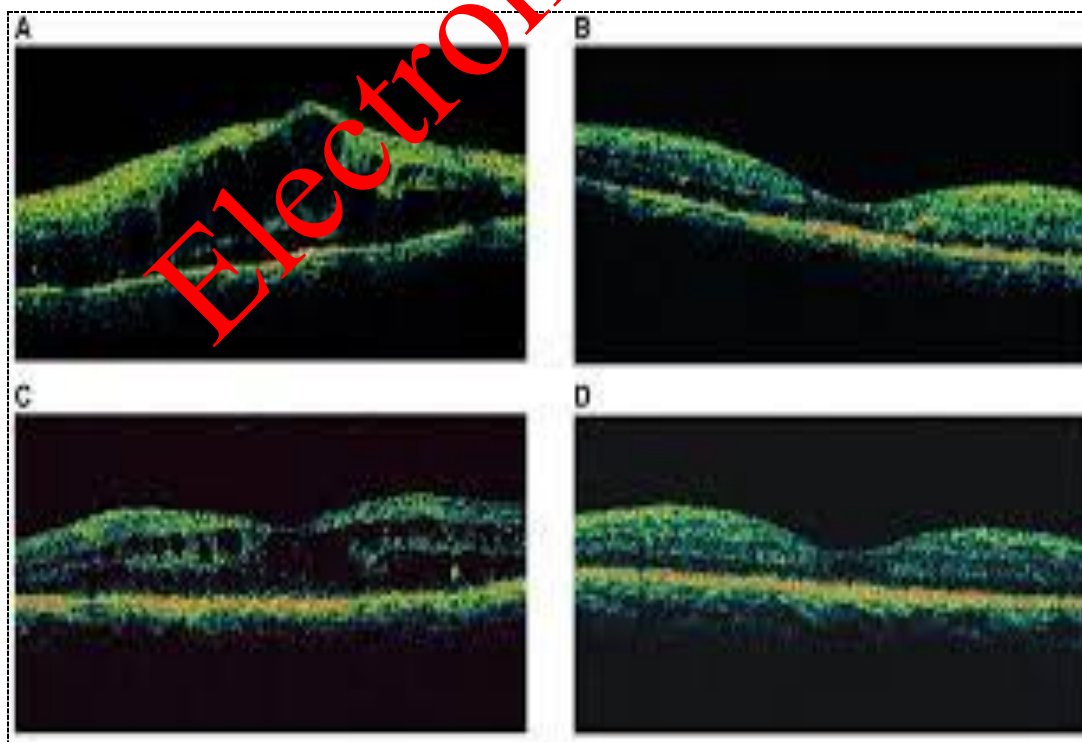


Figure I. A. Pre-injection baseline triamcinolone, B. Post-injection IVT at week 8, C. Pre-injection baseline Bevacizumab, D. Post-injection Bevacizumab at week 8

Group I comprised of 19 (59.3%) male and 13 (40.6%) female ($\chi^2=49.1$, $p=0.034$) and group II 16 (50%) male and 16 (50%) female ($\chi^2=1.01$, $p=0.90$). Mean $\pm$ SD duration of BRVO was 8.37 ± 4.21 and 8.35 ± 4.3 months ($p=0.09$) in IVB and IVT respectively. Mean $\pm$ SD of central macular thickness (CMT) in group I and II at baseline was $365.71\pm 159.7\mu$ and $363.91\pm 153.9\mu$ respectively ($p=0.95$).

Similarly, difference was not observed in BCVA for near at 1st visit and 2nd follow up visit at week 4 ($p\geq 0.85$) between 2 groups. At week 8 follow up, there was significant difference in the BCVA (for distance $p=0.03$ and for near $p=0.017$).

At week 8, mean CMT was reduced in IVB group compared to IVT, but difference was statistically non-significant ($p>0.05$) (graph I). IVB group showed visual improvement in 28 (87%) compared to 20 (62.5%) in IVT at week 8 ($p=0.017$). 3 in IVB and 11 in IVT showed no improvement in vision ($p=0.011$) on comparison of pre and post treatment vision. On the contrary, one patient in each group showed decrease in vision.

Procedure related complications; the subconjunctival hemorrhage, raised intraocular pressure (IOP) and cataract were noted in both groups but more in IVT group compared to IVB. One patient of endophthalmitis was noted in the IVT (group II). Triamcinolone group showed one patient of cataract and 8 (24.9%) of raised IOP. Topical agents were used to control raised IOP. Raised IOP was not observed in IVB group ($p=0.0001$).

DISCUSSION

Retinal vein occlusion is one of the major causes of blindness Worldwide. Still controversies exist in the management options to be preferred one over other.³ Although, most of the researchers believe that early detection of the disease can prevent vision loss if managed properly and appropriately thus reducing the morbidity.^{1,4} Controversies also exist regarding the exact causes of retinal vein occlusion, but thrombus formation has been considered as the most important cause of retinal vein occlusion.¹¹ Retinal vein occlusion has been the subject of almost incessant research but its etiology and mechanism remains ambiguity.¹²

Branch retinal vein occlusion (BRVO) is one of the frequent retinal vascular diseases.¹³ BRVO may reduce blood perfusion of retina with manifest retinal hypoxia resulting in vision loss. It can also be complicated by ME, which further intensifies the loss of vision. Some time the vision loss caused by macular edema exceeds the vision loss caused by hypoxia itself. Multiple treatment options have been tried as reported including "laser photocoagulation".^{14, 15}

It has been shown in many studies that VEGF is one of the factors that is released in increased amount after branch retinal vein occlusion and is associated with certain complication such as macular edema.¹⁶ The

exact mechanism behind this effect is that the retinal ischemia which causes up regulation of VEGF.

In many studies, IVT has been used in patients with macular edema secondary to BRVO. Variation has been reported in its success by many researchers.¹⁷

It is suggested that by inhibiting the VEGF, the vascular leakage could be prevented as a consequence a reduction occurs in macular edema also.¹⁶ A previous retrospective study by Fish et al, analyzed 56 patients treated with Bevacizumab alone or in combined with Triamcinolone. The Bevacizumab proved more effective than Triamcinolone acetate in improving the vision.¹⁷

Another previous study¹⁸ confirmed the effectiveness of Bevacizumab in improving the macular edema due to BRVO; it was reported that 2-3 injections might be needed in every patient due to short half life of the Bevacizumab injection.¹⁸ The findings of above study are consistent with our present study.

A previous study by Rabeen et al¹⁹ reported the effects of Bevacizumab in macular edema due to BRVO. He reported a successful result of Bevacizumab in improving vision and reducing the central macular thickness as well with almost negligible adverse effects. The findings of present are consistent with above cited study. Two more previous studies reported similar effectiveness with safety of the drug.^{20, 21} Previous studies had reported adverse effects such as raised IOP and risk in intraocular infections by triamcinolone²², the findings are consistent with present study. The present study reports Bevacizumab more effective and safe in reducing macular edema in branch retinal vein occlusion. The present study has some limitations, in particular those of sample size, for which further studies may be conducted on large scale for results to be authenticated.

CONCLUSION

Bevacizumab is more effective than triamcinolone in improving vision and reducing macular edema secondary to Branch Retinal Vein Occlusion. Triamcinolone showed more complications. Further studies with large sample size are recommended to confirm the findings.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Determination of Accuracy of Ultrasonography in 1st Trimester of Pregnancy in Detection of Date of Delivery

Farida Kakar and Summaira Hamza

ABSTRACT

Objective: To determine the accuracy of ultrasonography in 1st trimester of pregnancy in detection of date of delivery.

Study Design: Descriptive / cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynecology, Sandeman Provincial Hospital, Quetta from 1st July 2016 to 31st December 2016.

Materials and Methods: Total 100 primigravida with 1st trimester of pregnancy having age 18-45 years were recruited for the present study. Women with Multiple gestation, nonviable pregnancy and fetal malformation were excluded from the study.

Results: In this study accuracy rate of USG for date of delivery was 84 (84%) in first trimester. In age group 18-30 years, accuracy rate was 71 (93.42%) and 13 (54.17%) in age group 31-45 years. Accuracy of USG for date of delivery was noted in 57 (90.48%) patients and 27 (72.97%) patients in both gestational age groups respectively (9-10 weeks vs 11-12 weeks).

Conclusion: Findings of this study revealed that accuracy of USG based EDD estimation is found better in first trimesters in detection of date of delivery. A higher rate of accuracy of Ultrasound based EDD estimation was noted in early age group as compared to middle age group. It is also observed that accuracy was significantly associated with gestational age.

Key Words: Last menstrual period, Accuracy, Ultrasound, Gestational age, Expected date of delivery

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INTRODUCTION

The estimated date of delivery EDD has profound social, medical and personal implication for the pregnant woman and is a vital yardstick for the clinician who is responsible for safe delivery of their patient. In obstetric care, proper evaluation of gestational age is paramount.¹ To make the proper management, decisions need correct estimation of age of gestation. Accurate date of pregnancy may assist doctors in appropriately counselling women who are at the risk of a pre-term delivery (delivery of fetus before 37 weeks) about likely neonatal outcomes and is also essential in the evaluation of growth of fetal and the detection of intrauterine growth restriction.^{1,2} Almost 70% of women in USA have ultrasound testing done in pregnancy to determine delivery date.³

That's why the correct information about gestational age is essential for monitoring the growth of the fetus throughout pregnancy and to provide optimal management of the fetus in connection with date of delivery.⁴

Knowledge about the date of delivery is an essential for taking care of fetus and for the classification of a delivery as preterm, term or post-term (after 42 weeks). Its accuracy is therefore of paramount importance.⁵ Women now have estimate which is the prediction based on the measurement by ultrasound scanning of well-recognized fetal parameters.⁶ For the pregnant woman, the deliveries have various implications on pregnancy. The Ultrasound assessment is limited because it introduces bias as it is based on fetal growth, and thus could systematically result in the assignment of incorrect lower gestational age estimates for small fetus and incidence of the infants born as preterm is 7.9%, and 1.1% as post term.²

In low-resource settings such as Pakistan where limited information or education is routinely unavailable, mothers often determine gestational age of fetus by relying on USG. The estimation of the magnitude of accuracy of USG in 1st trimester of pregnancy in assessing the delivery date is very important. If its accuracy is higher, then it can be used for the assessment of date of delivery in future and to improve the quality of obstetrical care to patient and newborn.

Department of Obstetrics & Gynecology, Sandeman Provincial Hospital/Bolan Medical College Quetta.

Correspondence: Dr. Farida Kakar, Associate Professor of Obstetrics & Gynaecology Unit-3, Sandeman Provincial Hospital, Bolan Medical College Quetta.
Contact No: 0300-3844066
Email: drfaridakakar@gmail.com

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MATERIALS AND METHODS

This descriptive cross-sectional research was conducted at Obstetrics & Gynecology, Sandeman Provincial Hospital, Quetta from 1st July 2016 to 31st December 2016. Total 100 primigravida with 1st trimester of pregnancy having age 18-45 years were recruited for the present study. Women with Multiple gestation, nonviable pregnancy and fetal malformation were excluded from the study. First trimester of pregnancy defined as time period extending up to 12th weeks of gestation. An approval was taken from institutional review committee and written informed consent was taken from every patient. Demographic profile of all the patients was entered in predesigned proforma. Ultrasound was done of all the selected patients and expected date of delivery on USG was noted on predesigned proforma. Accuracy of USG was labeled as positive if delivery occurs on the date estimated by USG in 1st trimester of pregnancy. Term was defined as if the delivery occurs at or between 37 completed weeks and 41 weeks +6 days. At the time of delivery if 1st trimester USG date was match with the date of delivery, then accuracy was labelled as positive. All the collected data was entered in SPSS version 17 analyzed. Mean and SD was calculated for age gestational age. Frequency was calculated for accuracy (Yes/No). Stratification of age and gestational was done. Post stratification chi-square was applied to see the effect on these variables on outcome i.e. accuracy. The level of significance ≤ 0.05 was significant.

RESULTS

Total 100 patients with 1st trimester of pregnancy were selected for this study. Mean age of the patients was 28.58 ± 4.65 years and mean gestational age of the fetus was 11.30 ± 0.90 weeks. Accuracy of USG for date of delivery was 84 [16%] (Fig. 1). Patients were divided into age group i.e. age group 18-30 years and age group 31-45 years. Out of 76 (76%) patients of age group 18-30 years, accuracy of USG for delivery was noted in 71 (93.42%) patients. Among the 24 (24%) patients of age group 31-45 years, accuracy was noted in 13 (54.17%) patients. Statistically significant ($P = 0.000$) association of accuracy with age of the patients was noted (Table 1).

Table No.1: Relation of accuracy with age

Age (years)	Accuracy		P value
	Yes	No	
18 – 30	71 (93.42)	5 (6.58%)	0.000
31 – 45	13 (54.17%)	11 (45.83)	
Total	84 (84%)	16 (16%)	

Patients were divided into two gestational age group i.e. 9-10 weeks and 11-12 weeks. Total 63 (63%) patients belonged to 9-10 weeks of gestational age and 37 (37%) patients belonged to 11-12 weeks of gestational age and accuracy of USG for date of delivery was noted in 57 (90.48%) patients and 27 (72.97%) patients in both gestational age groups respectively (Table 2).

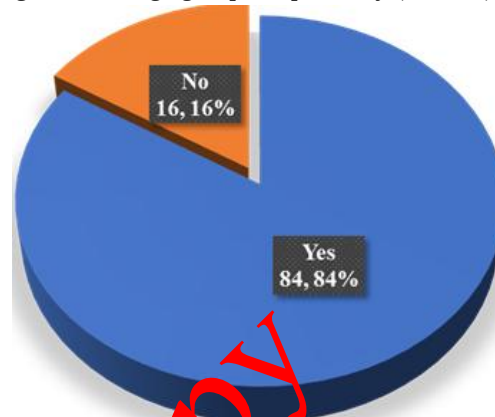


Figure No. 1: Accuracy of USG in 1st trimester

Table No.2: Relation of accuracy with gestational age

Gestational age (weeks)	Accuracy		P value
	Yes	No	
9-10	57 (90.48%)	6 (69.52%)	0.023
11-12	27 (72.97%)	10 (27.03%)	
Total	84 (84%)	16 (16%)	

DISCUSSION

The aim of present study was to determine the accuracy of Ultrasonography in 1st trimester of pregnancy in detection of date of delivery which was 84% in our study. These findings comparable with the study by Dietz et al², they reported accuracy rate of EDD on ultrasound in trimester of pregnancy as 91%. Once first trimester USG estimation was reserved for those ladies having unknown LMP dates.⁷ But it became very popular in USA with the passage of time. But it is not beneficial in routine use in low risk populations. In USA, clinician often revise women due date when ultrasound and LMP estimation differ by 7 days or more up to 20 weeks gestation.⁷⁻⁹ In 20-30 weeks gestation, if the difference is 14 days and at 30 week gestation if the difference is 21 days or more.¹⁰ The basis of gestational age estimation by USG, various measurement of fetus is taken by obstetrician on the basis of reported LMP date.¹¹ Crown rump length is used in the estimation of gestational age with rapid growth and linear relation with the gestational age at that time.¹² Crown rump length mark is visible at the 8th

weeks gestation approximately. In the last two trimesters combination of biparietal diameter of head circumference and femur length are used after that standard formula is applied.¹³

In our study, significantly ($P = 0.000$) high accuracy rate was observed in women having age 18-30 years as compared to women having 31-45 years (93.42% vs 54.17%). In our study, it was also revealed that rate of accuracy of USG for date of delivery was significantly ($P=0.023$) high in 9-10 weeks of gestation group as compared to 11-12 weeks gestation [90.48% vs 72.97%] (Table 2). As it is well known and documented in the literature that EDD estimation by ultrasonically has better results in early trimester than later trimesters even found much better in early weeks than late weeks of first trimester.¹⁴

In literature, several studies comparing the LMP with USG dating techniques used fetal head measurements (i.e. biparietal diameter) to estimate the gestational age.¹⁵ These studies were done in 2nd or 3rd trimester of gestation according the LMPs. There were remain limitations as some of the women were found unreliable. So the ultrasound base dating techniques were found superior to dating based on LMP. Particularly with regarding to predicting the actual date of delivery.¹⁶

Mongelli et al¹⁷ concluded that among the all the EDDS for singleton pregnancies with reliable menstrual date according to 5 methods: Last menstrual period (LMP) only, USG only, and 3 separate combinations of LMP and USG, the EDD by USG independently was found more accurate. Deliveries occurred within the ten days of estimated date in 64.1% of the women when LMP alone were used, and in 70.3% of the women when USG alone was used. However, it should be stressed that delivery occurred on the predicted date in 3.6% women when the expected date of delivery was based on LMP and in only 4.3% of women when the date was based on USG.

CONCLUSION

Findings of this study revealed that accuracy of USG based EDD estimation is found better in first trimesters in detection of date of delivery. A higher rate of accuracy of Ultrasound based EDD estimation was noted in early age group as compared to middle age group. It is also observed that accuracy was significantly associated with gestational age.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Does Antibiotic Coated Polyglactin Helps in Reducing Surgical Site Infection in Clean Surgery?

Rufina Soomro, Nadeem Khurshaidi, Syed Sheeraz ur Rahman and Rabab Hassan

ABSTRACT

Objective: To compare the frequency of surgical site infections in plain polyglactin versus Antibiotic (Triclosan) coated polyglactin suture material in benign clean breast diseases.

Study Design: Randomized Controlled Trial

Place and Duration of Study: This study was conducted at the Department of General Surgery, Breast Unit, Liaquat National Hospital, Karachi from Sep 2015 till Mar 2016.

Materials and Methods: A total number of 378 patient meeting in the inclusion criteria and consenting for the enrolment in the study for minor clean breast surgeries were randomly divided into two groups. In one group the wounds were closed subcutaneously with plain polyglactin suture, while in the second group triclosan coated polyglactin suture was used. The wounds were examined on the 3rd, 7th and 30th day post operatively, for signs of superficial surgical site infection (SSI). There was no use of antibiotics post-operatively. However, treatment was offered to patients who develop SSI.

Results: The frequency of SSI in the study group (triclosan coated polyglactin) was 5.3% (1 of 189 patients) while in the control group it was 3.7% (7 of 189). The difference between the two groups was not statistically significant (P-value= 0.507).

Conclusion: The study did not demonstrate a statistically significant reduction of superficial surgical site infection when triclosan coated polyglactin suture was used in clean wounds. More studies need to be conducted with larger sample size to look at its effects on other wound categories.

Key Words: Antibiotic coated polyglactin, triclosan coated polyglactin, Surgical Site Infection, Clean Wounds

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INTRODUCTION

Surgical Site infection (SSI) remains the most common problem faced by the surgeon¹. The surgeon not only has to reduce the SSI through meticulous surgical technique but also has to address the periperalia that could contribute to the SSI². Where Suture provides the tensile strength for the wound to heal it also produces inflammatory response that can predispose the wound to develop delayed healing, necrosis and ultimately infection³.

Benign breast diseases are the one of the common reason for the females to attend the surgical OPD⁴. Besides them being classified as clean surgeries, they still pose a low incidence of <2 % of Surgical site infection besides complications like hematoma & seroma⁵.

According to Centre for Disease Control (CDC), surgical site infection commonly accounts for infections occurring within 30 days of the surgery with the exception of the implant surgeries which require a year follow-up to be declared as infection free. Wounds that have developed infection require further management in terms of wound care, antibiotics (systemic or topical) or surgical intervention⁶.

In order to minimize the surgical site infection, one must take into account concerns related to effective antiseptic preparations and universal precautions. Intraoperative tissue handling and prophylactic antibiotics are few of the most important considerations in preventing surgical site infection⁷.

As high as 66% of wound infections are contributed by the trauma from the incision. Hence the choice of suture used for wound closure has significant impact on causing SSI. Suture materials have been classified based on the mono and poly-filaments⁸. These poly-filaments commonly used to wound closure serve as a source or nidus that can cause colonization of the endogenous flora leading to infection⁹.

Triclosan or 5-chloro-2 (2, 4-dichlorophenoxyphenol) is widely used in industries for its antibacterial and antifungal properties¹⁰. From shampoo, house hold detergents, liquid soaps to scrub agents, the compound has been used extensively in many commercial

Department of Surgery, Liaquat National Hospital & Medical College, Karachi.

Correspondence: Dr. Rufina Soomro, Consultant General & Breast Surgeon, Liaquat National Hospital & Medical College, Karachi.

Contact No: 0300-8255117

Email: rufina.soomro@hotmail.com

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brands¹¹. Recent researches have shown the effectiveness of Triclosan in reducing Methicillin Resistant Staph Aureus colonies hence it became a potential agent in suture materials where the common threat of infection is from MRSA¹².

Hence the purpose of the study is to compare the frequency of infection in simple polyglactin versus Antibiotic (Triclosan) coated suture material in benign breast surgeries.

MATERIALS AND METHODS

This randomized controlled study was conducted at the Department of General Surgery, Breast Unit, Liaquat National Hospital from Sep 2015 till Mar 2016.

Patients with benign breast pathologies admitted under Department of General Surgery & Breast Unit, Liaquat National Hospital & Medical College through Out patient services.

Inclusion Criteria:

1. Age between 20 to 35 years,
2. Benign breast diseases e.g. fibroadenoma

Exclusion Criteria:

Patients with;

1. Inflammatory and malignant breast diseases,
2. Known allergy or intolerance to Triclosan
3. Known chronic immune deficiency (for example diabetes, prolonged steroid use, AIDS)
4. Previous scar at operative site

Study was formally approved by the hospital research and ethics committee. Verbal and written consent was acquired from all patients meeting the inclusion criteria. Sample size was calculated by the statistician. Basic history and demographics were recorded by the principal investigator who was blinded with the type of the suture material being used on the patient. Patients

were further divided into 2 groups. In Group A, closure was done using plain polyglactin while wounds of participants in group B were closed using Triclosan coated polyglactin.

All wounds were prepped using povidone iodine scrub and solution. Prophylactic antibiotics were given to both the group using single dose of amoxicillin with clavulanic acid at the time of induction. Standard dressings were applied post operatively. Surgery was performed by the 3rd and 4th year residents to avoid surgeon bias. Standard post-operative instructions were given to all patients for wound care and analgesics. No post-operative antibiotics were given to both the groups. All postoperative patients were seen in the clinic on 3rd, 7th and 30 post-operative day for SSI and other related complications. Findings were recorded by the 2nd researcher. Data was compiled at the end of the completion of research.

Statistical software package (SPSS) version 20.0 was used for data analysis. Data was assessed for both descriptive and inferential statistics. Chi-square was used as a test of significance and P value of ≤ 0.05 was taken as significant.

RESULTS

A total of 378 patients were selected which met the inclusion criteria. All patients were female with age ranging from 20-35 years. Mean age of group A was 25.86 ± 3.51 years while mean age of study subjects in Treatment Group or Group B was 25.70 ± 3.10 hence both groups were comparable for inference. SSI in group A was reported to be 5.8 % (11 patients) while in group B it was 3.7% (7 patients) with a p-value of 0.507 as shown in table 1.

Table No. 1: Frequency and association of wound infections

Total Patients = 378	Age mean	Wound Infection				Total	P-value
		Yes		No			
		(n)	%	(n)	%		
Group A Plain Polyglactin	25.70±3.10	11	5.8	178	94.2	189	0.507*
Group B (Triclosan Coated Polyglactin)	25.86±3.51	7	3.7	182	96.3	189	

DISCUSSION

Suture materials can function as a potential nidus/source to colonize endogenous organisms hence can predispose to Surgical Site Infection.¹³⁻¹⁶ Triclosan has been widely used commercially in households for many decades for disinfection. It is particularly known to destroy MRSA which is a serious threat for all patients.¹⁷

Our study was aimed to establish the frequency of wound site infection in patients whose wounds have

been closed using Triclosan coated Polyglactin sutures as oppose to simple polyglactin sutures.¹⁸ Since the cost of the antibiotics coated is high as oppose to plain sutures, it becomes a serious concern for the 3rd world countries where cost of delivery care really matters. Study conducted by Gómez-Alonso et al¹⁹ exhibited that antibiotic or Triclosan coated Polyglactin are superior to plain sutures in terms of preventing bacterial colonization and regulating the local inflammatory tissue response. Such measures lead to better wound healing.

Study by Deliaert AE et al.²⁰ have shared similar results showing a reduction of 30 % in SSI. Galal I et al.²¹ have also highlighted the strong relationship between the SSI and use of Triclosan coated sutures (TCS) across various surgical procedures.

Galal et al.²² conducted a randomized double blind trial which showed a significant reduction in SSI with the use of the TCS. The infection rate dropped from 15 % to 7 %. Meta-analysis conducted by Frederic C et al.²² also concluded that TCS help in reducing SSI.

To address the concerns related to suture handling whether TCS coated sutures hamper the dexterity, Ford et al.²³ in his study showed that intraoperative handling of coated polyglactin sutures was indistinguishable from that with Triclosan.

Our study, we also witnessed decline in SSI from 5.8 to 3.7 %. Though the comparison was not statically significant and our choice of patients all belonged to NHSN (National Health and Safety Network) class 1. The strengths of the study were that it was a randomized controlled trial. Sample size was calculated which was not present in few of the earlier studies. We also did not take any financial support from any pharmaceuticals. However we did not include clean contaminated group in the study as group participants.

CONCLUSION

This study did not demonstrate a reduction of superficial surgical site infection when triclosan coated polyglactin suture was used in clean wounds. More studies need to be conducted with larger sample size to look at its effects on other wound categories.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency and Variation of Electrocardiographic Changes Patients of Pulmonary Tuberculosis

Aslam Ghouri, Atif Ahmed and Kanwal Abbas Bhatti

ABSTRACT

Objectives: To determine the frequency of various Electrocardiographic (ECG) changes in patients of Pulmonary tuberculosis.

Study Design: Descriptive study.

Place and Duration of study: This study was conducted at the Institute of Chest Diseases Kotri from June 2016 to December 2016.

Material and Methods: During study period 50 patients with pulmonary tuberculosis were included; patients with any other preexisting congenital, valvular, and infective or cardiomyopathy were excluded. After informed consent detailed history, socio-demographic characteristics with clinical presentation were noted. All necessary laboratory investigation and ECG was performed in all cases. Observations were recorded on proforma.

Results: In this study 42 (84%) males and females 08(12%) mostly in age group of 46-60 years i.e. 24(48%). Most of the patients 35(70%) belong to rural areas and lower economic class 43(86%). In 23(44%) patient there was family history of TB and 34(68%) were smokers.

Regarding clinical presentations all the patient present with fever 43(86%), malaise in 31(62%), weight loss in (56%), jaundice 06(12%), productive cough was observed in 45(90%) while in 34(68%) hemoptysis was also there. Majority of patients present with pallor 48(96%), 16(32%) complains chest pain with shortness of breathing in 27(54%) and clubbing in 26(52%).

On laboratory investigations 50 (100%) was showing sputum culture positive for acid fast bacilli (AFB) with comparison of AFB positive in morning sputum in 38 (76%), Hemoglobin levels were found less than 10mg% in 27(54%) in 23(46%) it is above 10mg % . Erythrocyte sedimentation rate (ESR) was <50 in only 02 (04%) rest of the patients 48 (96%) having ESR more than 50 mm after first hour. Total leucocyte count was seen more than 11000 /mm³ in 24 (48%) and in 26 (52%) it is more than 11000/mm³. Pleural effusion in 13 patients was noted and their examination reveals exudate with protein levels more than 3gm/ dl. The patients who had pleural effusion also shows positive coagulium test as well. All patients were found negative for drug resistance on genexpert. (molecular test) Different electrocardiographic changes were observed in 38 (76%) out of 50 cases in TB patients of different varieties. Sinus tachycardia was seen in 29(58%), P wave changes in 11(22%), P pulmonale in 12 (24%), Low voltage QRS in 19(38%), Left axis deviation in 11(22%) and Right axis deviation 10 in (20%).

Conclusion: As cardiopulmonary functions are correlated with one another abnormal changes in one system is reflected on other as well. Out of 50 patients of TB 38 had changes in cardiac functions reflected in ECG. Therefore it is important to diagnose and treat TB as prompt measure for prevention of cardiac complication seen in diagnosed and even in new pulmonary tuberculosis cases.

Key Words: ECG, sputum positive, tuberculosis

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INTRODUCTION

Tuberculosis (TB) is one of the oldest infectious diseases which remain a major cause of morbidity and mortality in developing countries like us.

Department of Medicine, Liaquat University of Medical and Health Sciences, Jamshoro, Sindh.

Correspondence: Dr. Kanwal Abbas Bhatti, Senior Registrar, Department of Medicine, Liaquat University of Medical and Health Sciences, Jamshoro, Sindh.

Contact No: 0333-2734561

Email: kabbasbhatti@yahoo.com

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Regardless of changing trends in life style, socioeconomic development and advances in medical science TB is still the second most common cause of death. Pakistan ranks fifth amongst countries with highest burden of TB globally. The incidence of TB being 231/100,000 and about 420,000 new cases annually reported in estimated population of around 180 million.^{1,2}

Functionally lungs and heart works in such a harmony that alteration in one cause changes in the other. Many respiratory diseases cause changes in the heart also. In about 1-2% of pulmonary tuberculosis patient associated cardiovascular disease are seen. Pericardium is usually affected in rare cases myocardium and valves may be involved.^{3,4}

Several studies show that the tuberculosis increases the risk of the unstable angina, acute myocardial infarction and chronic heart disease about 40% compared to the non-tuberculosis group. The possible mechanism of heart involvement is direct effect on myocardium and coronary arteries, increased expression of pro-inflammatory cytokines like interleukins.^{5,6}

As only few studies available in our setup on cardiac manifestations due to TB, so this study is designed to have insight in increasing incidence of pulmonary tuberculosis cases particularly in a developing country like Pakistan. Early evaluation of cardiac manifestation by ECG provides timely management with proper treatment and prevention of various complications associated with tuberculosis.

MATERIALS AND METHODS

This descriptive study was conducted from June 2016 to December 2016 in Institute of chest diseases at Kotri district Jamshoro after approval of institutional Ethics Committee. All the patients with tuberculosis were included in the study while patients with any other preexisting congenital, valvular, and infective or cardiomyopathy were excluded. After informed consent detailed history, socio-demographic characteristics like age, sex, socioeconomic status (SES), education, residence, marital status, smoking habits and weight was noted and recorded on proforma designed for this study.

Clinical examination with important laboratory investigations were performed and recorded on proforma. Then in all patients heart changes were evaluated by ECG after all necessary precautions. A 12 lead ECG including 3 bipolar limb leads (I, II and III), 3 augmented (aVR, aVL and aVF) unipolar limb leads and 6 unipolar precordial leads was performed. Various ECG parameters like rate, rhythm, axis deviation, P-wave changes, QRS complex, T-wave, ST changes were observed.

RESULTS

During study period 50 patients were enrolled in study out of which 42 (84%) males and females 08(12%) between age group 15-30 years 15(30%), 31-45 years 11(22%) and in age group of 46-60 include 24(48%). Out of these 43 (86%) are married while 07(14%) are unmarried with primary education in 16(32%), secondary education in 29(58%) and only 05(10%) were graduate. Most of the patients 35(70%) belong to rural areas while 15(30%) from urban areas. In 22(44%) patient there was family history of TB while 28(56%) had not any history of TB. Smoking habits was observed in 34(68%) while in 16(32%) never smoked. Majority of patients belonged to lower economic class 43(86%) while 07(14%) belongs to middle class also. Regarding weight of patients 48(96%) had weight more 45 Kg and 02(06%) had

weight less than 45 Kg. In 47(94%) duration of disease is less than one month while 03(06%) patients had duration of more than one month shown in table 1.

Table No.1: Demographic of TB patients n=50

Age in years	15-30	31-45	46-60
	15(30%)	24(48%)	11(22%)
Gender	Male	Females	
	42(84%)	08(10%)	
Marital status	Married	Unmarried	
	43(86%)	07(09%)	
Education	Primary	Secondary	Graduation
	16(32%)	29(58%)	05(10%)
Residence	Rural	Urban	
	35(70%)	15(30%)	
Family history of TB	Yes	No	
	22(44%)	28(56%)	
Smoking Habit	Yes	No	
	34(68%)	16(32%)	
Socioeconomic status	Upper	Middle	Lower
	00	07(14%)	43(86%)
Body Weight	>45 Kg	<45 Kg	
	48(96%)	02(06%)	
Duration of Disease	>1 month	< 1 month	
	47(94%)	03(06%)	

Table No.2: Clinical presentation of TB patients n=50

Symptoms	Number	%
Fever (Low grade)	43	86
Fever (High grade)	07	14
Malaise	31	62
Weight loss	28	56
Jaundice	06	12
Productive cough	45	90
Hemoptysis	34	68
Pallor	48	96
Chest pain	16	32
Clubbing	26	52
Shortness of breathing	27	54

All the patients present with clinical presentations suggestive of tuberculosis further diagnosed on investigations. All the patient present with fever 43(86%) present with low grade while 07 (14%) with high grade, malaise is seen in 31(62%), weight loss in (56%), jaundice 06(12%), productive cough was observed in 45(90%) while in 34(68%) hemoptysis was also there. Majority of patients present with pallor 48(96%), 16(32%) complains chest pain with shortness of breathing in 27(54%), interestingly clubbing was also noted in 26(52%) cases shown in table 2.

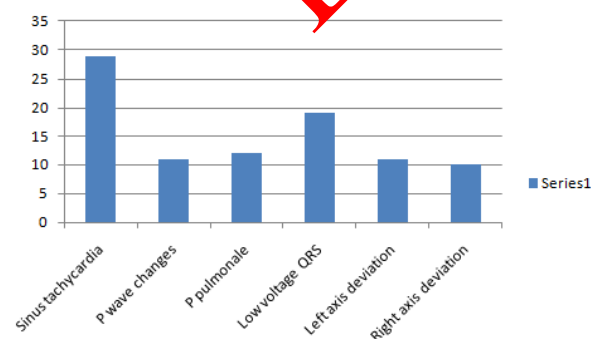
Table No.3 Laboratory investigations of TB patients

	Number	%
Sputum AFB +ve	38	76
Sputum culture +ve	50	100
Hemoglobin < 10	27	54
>10	23	46
ESR <50	02	04
>50	48	96
TLC > 11000	24	48
< 11000	26	52
Pleural effusion with exudate(protein >3gm)	13	26
Coagulum test +ve	13	26
Genexpert (RND) Resistance not detected	50	100

Table 3 is showing different laboratory investigations in TB patients. All the patients i.e. 50 (100%) was showing sputum culture positive for acid fast bacilli (AFB) with comparison of AFB positive in morning sputum in 38 (76%), Hemoglobin levels were found less than 10mg% in 27(54%) in 23(46%) it is above 10mg %. Erythrocyte sedimentation rate (ESR) was <50 in only 02 (04%) rest of the patients 48 (96%) having ESR more than 50 mm after first hour. Total leukocyte count was seen more than 11000/ mm³ in 24 (48%) and in 26 (52%) it is more than 11000/mm³. Pleural effusion in 13 patients was noted and their examination reveals exudate with protein levels more than 3gm/dl. The patients who had pleural effusion also shows positive coagulum test as well. All patients were found negative for drug resistance on genexpert.

Table No.4: ECG changes in TB patients

	Number	%
Sinus tachycardia	29	58
P wave changes	11	22
P pulmonale	12	24
Low voltage QRS complex	10	20
Left axis deviation	11	22
Right axis deviation	10	20

**Graph No.1: ECG changes in TB patients.**

Different electrocardiographic changes were observed in 38 (76%) out of 50 cases in TB patients of different varieties. Sinus tachycardia was seen in 29(58%), P

wave changes in 11(22%), P pulmonale in 12 (24%), Low voltage QRS in 19(38%), Left axis deviation in 11(22%) and Right axis deviation 10 in (20%).

DISCUSSION

This study was conducted on 50 patients at institute of chest diseases at Kotri. Diagnosis of TB was confirmed by investigations. None of them had any known heart disease. As tuberculosis is commonly known as disease of poverty, poor hygiene, smoking, overcrowding and malnutrition are other associating factors in causation.

In this study majority of patient 70% belongs to rural areas deprived of necessary facilities of healthy living like clean drinking water, low proteinaceous meal, overcrowded poor ventilated residences and sanitation, 68% were smokers and 86% belongs to lower socio economic class, these findings are more or less similar with the study of Jagdeesh and Metha who found more than half 39 (65.0%) were having rural background, (33.3%) smokers and 60% patient belong to lower socioeconomic status.

Of the 50 patients 38 patients (16%) were females and 42 patients (84%) were males which is unrelated with studies conducted by Akhtar T and Ahmed M who found the ratio of females more than males that is 57% females and 43% males, this difference may be due to change in sample size or study duration.^{8,9}

Productive cough, hemoptysis, weight loss and malaise are common findings of TB patients we observed 90%, 68%, 56% and 62% respectively while study conducted by Khattak in northern Pakistan found these changes 85%, 27%, 50%, 50% respectively, quite similar as both reflecting poorly developed strata of study subjects.¹⁰

Different electrocardiographic changes were observed in 38 (76%) out of 50 cases in TB patients. Changes observed were sinus tachycardia seen in 29(58%), P wave changes in 11(22%), P pulmonale in 12(24%), low voltage QRS in 19(38%), left axis deviation in 11(22%) and right axis deviation 10 in (20%). Study conducted by Manoranjan Dash revealed ECG changes in 64% cases of TB with sinus tachycardia in 54%, P wave changes in 4%, P pulmonale in 4%, low voltage QRS complex in 10%, right axis deviation in 12% other changes in ECG were noted by authors but not observed in our study. ECG changes with some similarities and differences authors like khanna and Gouretal reported ECG changes in TB patients^{11,12,13}

The study conducted by Dasti and Hashmi at Liaquat university hospital showed cardiac involvement in 69.4% which is very near to our study. Pericardial involvement shown by low QRS complex was observed in 06% cases while we observed in 10% while study by Larrieu AJ, et al found it in 08% of the patients with pulmonary tuberculosis and it is consistent with the present study.^{14, 15}

CONCLUSION

As cardiopulmonary functions are correlated with one another abnormal changes in one system is reflected on other as well. Out of 50 patients of TB 38 had changes in cardiac functions reflected in ECG. Therefore it is important to diagnose and treat TB as prompt measure for prevention of cardiac complication seen in even newly diagnosed cases. In present study the sinus tachycardia, P pulmonale and low voltage QRS complexes were significant findings on electrocardiograph, therefore special attention must be paid to patients with atypical features like chest pain, breathlessness. Abnormal ECG changes should be further assessed with echocardiography to detect any cardiac involvement for accurate and timely management.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency of Dyslipidemia in Patients with Rheumatoid Arthritis

Raffad¹, Kashif Maqsood² and Javeid Iqbal²

ABSTRACT

Objective: To determine frequency of dyslipidemia in rheumatoid arthritis patients.

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Department of Medical OPD, Lahore General Hospital, Lahore from 30th September 2014 to 30th March 2015.

Materials and Methods: One hundred and fifty patients with rheumatoid arthritis, of both gender, age 18-80 years, disease duration ≥ 6 months, BMI 19-25 were included in the study. Fasting lipid profile was measured.

Results: Mean age of study sample was 54.51 ± 3.052 years (age range 44 to 60 years of age). There were 60 (40%) male patients and 90 (60%) female patients. 48 (32%) patients had dyslipidemia. Dyslipidemia was associated with duration of disease but not with age, gender or treatment

Conclusion: Frequency of dyslipidemia is quite high (32%) in our patients of rheumatoid arthritis.

Key Words: Rheumatoid arthritis, dyslipidemia, cholesterol, lipoproteins, diabetes mellitus.

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INTRODUCTION

Rheumatoid arthritis (RA) is the most common form of polyarticular inflammatory arthropathy characterized by persistent synovitis, bony erosions and progressive articular destruction leading to varying degree of physical disability.¹ Long-term complications of the disease are hospitalization, work disability, medical costs, poor quality of life, and cardiovascular disease (CVD) etc.^{2,3}

Rheumatoid arthritis is considered as an independent risk factor of cardiovascular disease ischemic heart disease (IHD) or congestive heart failure which cause up to 40% of deaths in these patients.^{3,5} In the general population, dyslipidemia, especially elevated levels of low-density lipoproteins (LDL), has been shown to be one of the strongest predictors of CVD and it constitutes the primary treatment target according to national guidelines.⁶

Dyslipidemia in RA mainly presents as low concentrations of high-density lipoprotein (HDL), which is associated with an unfavourable cardiovascular risk.

Total cholesterol and LDL levels in RA are inversely associated with the acute phase response, regardless of antirheumatic therapy.⁵ It is also recommended that lipid levels should be monitored and managed in patients with RA to minimize the long-term risk of cardiovascular disease. A study reported prevalence of dyslipidemia in 48% patients of RA.⁷ A local study also quoted various types of dyslipidemia in 54% of patients.⁸ However, this study included patients with < 6 months duration of disease and other CVD risk factors like smoking, obesity, hypertension were not recorded. The present study was undertaken to know the frequency of dyslipidemia in patients of rheumatoid arthritis who did not have any other risk factor for CVD. As cardiovascular disease is the leading cause of death in RA patients,⁹ disease-modifying therapies can be added to minimize the risk of mortality.

MATERIALS AND METHODS

It was a cross-sectional study, carried out in Department of Medical OPD, Lahore General Hospital, Lahore, over a six-month period from 30th September 2014 to 30th March 2015. The study was approved by the Institutional Ethical Committee. Non-probability, purposive sampling technique was used and estimated sample size was 150 patients at 95% confidence level, 8% margin of error taking an expected percentage of patients of dyslipidemia in RA patients 54%.⁸ Patients of both genders, 18-80 year of age, diagnosed as rheumatoid arthritis on the basis of American College of Rheumatism-(ACR-ELUR) criteria, with duration of RA $\geq$ six months, and having BMI 19-25 (with normal weight) were enrolled in the study. Exclusion criteria included smoking, diabetes (previous medical record or blood sugar fasting >126 mg/dl, blood sugar random

¹. Department of Medicine, The Lahore General Hospital Lahore.

². Department of of Medicine, Rashid Latif Medical College Lahore.

Correspondence: Dr. Raffad, Associate Professor of Medicine, Medical Unit-III Postgraduate Medical Institute /Ameeruddin Medical College, The Lahore General Hospital, Lahore.

Contact No: 0333-4200547

Email: drraffad@gmail.com

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>200mg/dl), lipid-lowering drugs, history of CAD or cerebrovascular accident (CVA), or any chronic systemic or metabolic disorder. Informed consent was obtained from each patient. Demographic profile (name, age, sex, contact no.) was taken. Complete medical history and physical examination including body mass index (BMI) and blood pressure measurement were done on patient's presentation. Patients' fasting (12-15 hour) blood sample (5cc) were taken and sent to hospital laboratory for analysis of lipid profile including high density lipoproteins (HDL), low density lipoproteins (LDL), total cholesterol (TC) and triglycerides (TG). Patients were labelled as dyslipidemic if there were ≥ 1 abnormal serum lipid abnormalities i.e. cholesterol (>150 mg/l), triglycerides (>150 mg/dl), HDL (<40 mg/dl), LDL (>100 mg/dl) and VLDL (>32 mg/dl).

All data were analyzed by SPSS-20. Quantitative variables like age, cholesterol, triglyceride, HDL, LDL and VLDL were presented as mean $\pm$ SD. Qualitative variables like, gender and pattern of dyslipidemia were calculated as frequency and percentage. Data were stratified for age < or ≥ 55 year, gender, duration of disease (6-12 months, 12-24 months and > 24 months). Chi-square test was applied for comparison of stratified variables for dyslipidemia. *P* value < 0.05 was considered as significant.

RESULTS

One hundred and fifty patients were included in our study sample with mean age of 54.51 $\pm$ 3.052 years and age range from 44 to 60 years (Table 1). 85 (56.7%) patients were less than 55 years of age while most (43.3%) ≥ 55 years of age. 60(40%) patients were male and 90 (60%) were females, with M:F of 1:1.5. 48 patients (32%) had dyslipidemia (Table 2). In 102 (68%) patients, duration of dyslipidemia was 6 to 12 months, in 28 (18.7%) it was 13 to 24 months and in remaining 20 (13.3%) patients it was above 24 months (Table 1). 114 patients (76%) were currently on treatment (Table 2). To determine the frequency of dyslipidemia among gender (20 male and 28 female patients), we stratified data, but there was insignificant difference ($p=0.775$). Among 48 dyslipidemia patients 43 were treated and 5 were not treated. Results were again non-significant [$p=0.008$] (Table 2). When we cross tabulated age groups with dyslipidemia, results were insignificant ($p=0.332$). Out of 48 dyslipidemia patients, 25 were less than 55 year while 23 were more than 55 years of age. When we cross tabulated duration of disease with dyslipidemia, results were significant ($p=0.001$). Among 48 dyslipidemia patients 28 had duration of 13 to 24 month and 20 had 24 month duration. However no patient of dyslipidemia had duration of 6 to 12 months.

Table No.1: Demographic and clinical data of patients (n=150).

Variable	No.	%age
Age (years)		
< 55	85	56.7
≥ 55	65	43.3
Sex		
Male	60	40.0
Female	90	60.0
Duration of disease (months)		
6-12	102	68.0
13-24	28	18.7
> 24	20	13.3
Treatment		
Under treatment	114	76.0
No treatment	36	24.0
Dyslipidemia		
Present	48	32.0
Absent	102	68.0

Table No.2: Stratification of dyslipidemia, according to age, sex, treatment and duration of disease (n=150).

Variable	Dyslipidemia		P value*
	Yes	No	
Age (year)			
< 55	25	60	0.43
≥ 55	23	42	
Gender			
Male	20	40	0.77
Female	28	62	
Treatment			
Under treatment	5	31	0.008
No treatment	43	71	
Duration of disease (months)			
6-12	0	102	0.001
13-24	28	0	
> 24	20	0	

* determined by X^2 test.

DISCUSSION

Patients with rheumatoid arthritis (RA) have an increased risk of cardiovascular disease that may not always be related to the presence of traditional cardiovascular risk factors. In the general population, dyslipidemia has been found to be one of the strongest predictors of CVD, with elevated levels of low-density lipoproteins (LDL) constituting the primary treatment target according to various guidelines.

In our study, 48 (32%) patients had dyslipidemia. This figure is lower than the previously reported data. A study from Spain by Batun-Garrido et al⁹ reported

dyslipidemia in 54.9% of patients. Dyslipidemia was frequent in 51-60 year age group, type 1 obesity, positive cyclic citrullinated antipeptide antibodies and positive rheumatoid factor, ESR >13mm/hr and CRP >2mg/l. A negative correlation was seen with lower rate of disease activity and treatment with hydroxychloroquine. Chavan et al¹⁰ also reported increased serum cholesterol and decreased HDL along with reduced serum magnesium level and raised uric acid levels. In the study by Nisar et al⁸ 54% of patients of RA had dyslipidemia in the form of deranged total cholesterol levels and low HDL levels. Another study from Tunis by Hassen Zrour et al¹¹ studied 92 patients with active RA and 82 healthy subjects for lipid profile analysis. They reported a higher prevalence of associated dyslipidaemia 95.7% in RA patients versus 65.9% in control, $p < 0.001$).

Reported pattern of lipids in RA patients has been quite conflicting in different studies. Some studies described similar,¹² higher¹³ or lower.¹⁴ levels of total cholesterol (TC) while others reported increased levels of TC and LDL-C in patients with RA.¹¹ Liau et al.¹⁵ compared 16,085 RA patients with 48,499 non-RA controls. They found that the relationship between LDL cholesterol levels, HDL cholesterol levels and risk of cardiovascular events was nonlinear and similar between RA patients and non-RA control.

When we cross tabulated age groups with dyslipidemia. Out of 48 dyslipidemia patients, 25 were less than 55 year while 23 were more than 55 years of age i.e. results were non-significant ($p = 0.332$). It shows that age of the patients in RA has no bearing on the presence of dyslipidemia. In our study sample 60 patients (40%) were male and remaining 90 patients (60%) were females. It implies that females are at more risk of developing this disease. Stratification of the data revealed that there is no effect of gender on the presence of dyslipidemia.

When we cross tabulated duration of disease with dyslipidemia, results were significant ($p = 0.001$). Among 48 dyslipidemia patients 28 were having duration 13 to 24 month and 20 were above 24 month duration however no patient of dyslipidemia was in duration of 6 to 12 months. This implies that longer the duration of disease, higher the chances of dyslipidemia and risk of cardiovascular diseases. Another parameter which we assessed in our study was treatment of the disease. Our results showed that patients under treatment had less chances of dyslipidemia. Similar findings have been reported previously.^{16,17} Disease modifying agents used in the treatment of RA like hydroxychloroquine and methotrexate have anti-atherogenic effect whereas the impact of biologicals on lipid levels is variable.^{16,17}

Limitations of the present study were that we did not use healthy controls and did not measure the effect of lipid levels in relation to different treatments. We

suggest analysis of lipid profile should be stratified by the presence of the use of corticosteroids, nonsteroidal antiinflammatory drugs, selective cyclo-oxygenase 2 inhibitors etc. in some prospective studies.

CONCLUSION

It is concluded that frequency of dyslipidemia is quite high (32%) in our population presenting with rheumatoid arthritis. It is not associated with gender, younger age and being on treatment. It is associated with duration of disease.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency of Hypertension in Pregnant Women Visiting District Head Quarter Hospital Rajanpur, Pakistan

Sidra Bilal¹, Sadia Batool², Hafiza Mehreen Gul³ and Muhammad Ishtiaq⁴

ABSTRACT

Objective: To determine the prevalence of hypertension in pregnant ladies throughout the pregnancy period.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Medical Clinic DHQ Rajanpur from 1st June to 15th July 2016.

Materials and Methods: 100 pregnant women with gestational age from 20 weeks ahead were contained. Gestational age was determined by ultrasound and from the concluding menstrual period. Pregnancy-induced hypertension was determined by measuring the blood pressure and based on clinical examination. The data was registered in a pre-designed table, entered and analyzed by using SPSS 22.

Results: Our study found that 57% of pregnant women who visited the hospital clinic were found with hypertension. The average age of the respondents was ± 31.54 and Standard Deviation of 3.18. Most of the respondents about (64.5%) were form the middle-aged group (26-35 years old), the highest age of childbearing.

Conclusion: Pregnancy is associated with a complex threat of pregnancy-induced hypertension. The mothers experience most of the complications during pregnancy and childbirth. Early booking, good care throughout pregnancy and childbirth and the rational use of contraceptive services can prevent complications from occurring.

Key Words: Pregnancy; Complications; Hypertension.

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INTRODUCTION

Pregnancy induced hypertension are the term used to describe the different stages of the same syndrome¹. Preeclampsia is pregnancy-induced hypertension alongside involvement of renal system and proteinuria². Preeclampsia progresses to Eclampsia when seizures appear along with above symptoms³. Arterial hypertension is a problem in about 8 to 10% of pregnant women and is one of the cause for the increased risk of prenatal complications, which include maternal or child mortality³. Among different varieties of pregnancy - induced hypertension, pre - eclampsia and eclampsia are responsible for most of the increased blood pressure in pregnant women⁴.

Pregnancy-induced hypertension remains a major cause of maternal prenatal disease and death⁵.

US Congressional obstetricians and gynecologists define it as a continuous blood pressure of 140 mmHg or a higher and diastolic 90 mmHg or more⁶. Signs and Symptoms of PIH is usually after 20 weeks of gestation. Hypertension in pregnancy is associated with CVS disorders later in life^{7,8}. It has been suggested that blood pressure monitoring in women who have experienced high blood pressure early in pregnancy after puerperium helps in detection and prevention of various CVS disorders. It may hang on the relative hyper and rogenic status and additional modifications in vascular endothelial function, carbohydrate and lipid metabolism, which have been shown to correlate with previous history of hypertension or otherwise to healthy women⁹. Per the National Heart, Lung and Blood Institute of Pregnancy; many possible reasons of high blood pressure include overweight or failing to remain active, smoking, drinking, high maternal age during the first pregnancy that is more than 35 years, and manifold foetuses¹⁰.

The pathogenesis is determined by the interface between the surface endothelial cells in the uterine placental circulation, motherly platelets and hostile action by these tissues producing eicosanoids¹¹. Our country is comparable to about 75% of other evolving countries where local co-ordination is lacking in basic health services and the concept of prenatal care is obscure¹². Consensus on the "causes and frequency of pregnancy-induced hypertension" is not fully agreed and immune factors to see trigger placental disease

¹. Department of Obstet. & Gynae, DHQ Hospital, Rajanpur.

². Department of Obstet. & Gynae, THQ Hospital, Jatoi.

³. Department of Obstet. & Gynae, Basic Health Unit Lakhani, Taunsa Sharif.

⁴. BVH, Bahawalpur.

Correspondence: Dr. Hafiza Mehreen Gul, Women Medical Officer, Basic Health Unit Lakhani, Taunsa Sharif

Contact No: 0342-6417280

Email: mehreengul408@gmail.com

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genetic arrangements leading to maternal vulnerability¹³. In Bangladesh, the study led to various complications like eclampsia, dystocia, postpartum hemorrhage and other labor complications associated to PIH¹⁴.

MATERIALS AND METHODS

This cross-sectional study of descriptive crossover was performed at the Medical Clinic of DHQ Rajanpur from 1st June to 15th July 2016. 100 pregnant women with gestational age from 20 weeks ahead were contained. Sampling was performed using a non-probabilistic sampling technique.

Inclusion criteria: 100 pregnant women with gestational age from 20 weeks ahead were contained. Gestational age was determined by ultrasound and from the concluding menstrual period and age of 15 to 40 years.

Exclusion criteria: History of DM, RA factor.

Data Collection Process: Data was collected from all study variables by using open and closed ended questions of self-administered questionnaires.

Data Analysis: Accessed and analyzed the complete data on SPSS version 22.

RESULTS

Our study found that 57% of pregnant women who visited the hospital clinic were found with hypertension. The average age of the respondents was ± 31.54 and Standard Deviation of 3.18. Most of the respondents about (64.5%) were from the middle-aged group (26-35 years old), the highest age of childbearing.

There were significant differences in the time of the different gestational ages and in the diagnosis of hypertension. High blood pressure was diagnosed more in the 2nd and 3rd trimester.

Many Conflicts found in believes that antenatal checkups help in early diagnosis and management of prenatal hypertension. In the presence of two groups of pregnant women one having antenatal visits and other not, no significant difference was found in between them. An important question rises here whether prenatal checkups are miscarried to determine high blood pressure or they do not consider it significant to determine and treat the hypertension.

Table No.1: Respondents with age groups

Age Groups	Frequency	%age
15-25 years	20	20
26-35 years	73	73
> 35 years	7	7
Total	100	100

DISCUSSION

In this study the prevalence of PIH was seen in 57. Our result compared with studies, such as per an assessment

made in Bangladesh, more than 50% of mothers suffer from pregnancy-induced hypertension, eclampsia, dystocia, postpartum hemorrhage and delayed delivery leading to death¹⁴ where, PIH is found to be 20% complicating the pregnancy¹⁵, and in an intercontinental and was found 18% in the native study¹⁶. In some other studies the population of teenage mothers with PIH found with frequency of 30% and 32%^{17,18}.

Same magnitude of disease where only group of 70 mothers were involved surprisingly showed the frequency of hypertensive disorders even up to 37% which is lower from our figures¹⁹.

CONCLUSION

The findings of this study elaborate that pregnant women with hypertension are recognized at the end of their gestation with a significant limitation of their proper management. More pregnant women who are opting pregnancies after long duration of their marriage are more sufferers of hypertension. Late diagnosis of Efforts must focus on the strict enforcement of the rules prohibiting marriage in our country. Access to the recognized health services should be recognized.

Recommendation: The collective awareness of health care providers and women with reproductive age at high blood pressure should be tested. Posters, pamphlets and leaflets should be put out and distributed on the awareness of early diagnosis and management of hypertension.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency of Ischemic Stroke in Patients of Mitral Stenosis

Osama Munir¹, Adeela Waheed², Maryam Amjad³

ABSTRACT

Objective: To assess the frequency of ischemic stroke in patients of mitral stenosis.

Study Design: Cross-sectional multi-centre study

Place and Duration of Study: This study was conducted at Sheikh Zayed Hospital, Rahima Yar Khan and Liaquat National Hospital Karachi from 1st January 2016 to 31st December 2016.

Materials and Methods: One hundred patients of mitral stenosis, age between 16-60 years and either gender were included. Registered patients of mitral stenosis were followed-up in OPD for 1 year.

Results: The mean age of 38.70±13.40 years. There were 49 (49%) males while 51 (51%) females. The mean BMI of patients was 20.02±2.37kg/m². The mean duration of mitral stenosis was 3.09±1.46years. Ischemic stroke was found to develop in 28% cases of mitral stenosis. The relationship of ischemic stroke was found to be insignificant (P>0.05) with age, gender, duration of mitral stenosis and BMI.

Conclusion: The frequency of ischemic stroke is high in patients of mitral stenosis registered in multiple healthcare centers of Lahore.

Key Words: Ischemic stroke, Mitral stenosis, Frequency

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INTRODUCTION

Defined simple mitral stenosis is the narrowing of the mitral valve of the heart,¹ which is usually caused by rheumatic fever.¹ The prevalence of rheumatic disease is higher in India (100-150 cases per 100,000) than Africa (35 cases per 100,000).² Therapy is directed at infective endocarditis prophylaxis, treating heart failure, controlling the ventricular rate in case of atrial fibrillation, and thereby preventing thromboembolic phenomena.³

Almost all mitral stenosis is due to rheumatic fever so prophylaxis against group A beta-hemolytic streptococci is must.⁴ Complications of mitral stenosis include systemic embolism. Cerebral embolism originates in the heart of the patients with several acquired diseases like rheumatic valvular heart disease, myocardial infarction and dilated cardiomyopathy.⁵ Since stroke causes huge morbidity and mortality, determining the mechanism of stroke is crucial for effective care and therapy. 14-30% of all cerebral infarctions are attributed to stroke.⁶⁻⁸

Ischemic stroke is not one disease and occurs due to a myriad of pathologic processes and small infarctions can cause major disability in the brain. Ischemia is responsible for 85% of all strokes.⁹ The high risk cardiac conditions resulting in stroke are atrial fibrillation, recent myocardial infarction and mitral rheumatic stenosis.^{10,11}

MATERIALS AND METHODS

This cross-sectional multi-centres study was carried out at Sheikh Zayed Hospital, Rahima Yar Khan and Liaquat National Hospital Karachi from 1st January 2016 to 31st December 2016. One hundred cases of mitral stenosis, already registered in teaching hospitals of Lahore were included. Patients of 16-60 years of either gender were included in the study through Simple Random sampling technique. The patients were registered on from January 2016 to December 2016 and were on follow-up with medical management. During follow-up period, patients were advised to report to the respective hospital in case of any complication including stroke. If patient presented with symptoms, including partial paralysis, unconsciousness, the CT scan was performed for confirmation of stroke. All this information was collected using structured questionnaire.

The data was entered in SPSS-20 and analysed. Mean±SD were calculated for age, BMI and duration of mitral stenosis, while frequency and percentage were calculated for gender and ischemic stroke. Data stratification was done for age, gender, BMI and duration of mitral stenosis. Both Chi-square test and P-value were calculated. P-value ≤0.05 was considered as significant.

¹. Department of Emergency, Sheikh Zayed Hospital, R.Y. Khan,

². Department of Cardiology, Liaquat National Hospital Karachi.

³. Department of Cardiology, Liaquat College of Medical and Dentistry Karachi.

Correspondence: Dr. Osama Munir, Medical Officer, Emergency Department, Sheikh Zayed Hospital, R.Y. Khan.

Contact No: 0336-2550133

Email: osamamunir.pansota@gmail.com

RESULTS

Hundred patients were included with the mean age of 38.70 ± 13.40 years. There were 49 (49%) males while 51 (51%) females (Fig. 1). The mean BMI of patients was $20.02 \pm 2.37 \text{ kg/m}^2$. The mean duration of mitral stenosis was 3.09 ± 1.46 years (Table 1). Ischemic stroke was found to develop in 28% cases of mitral stenosis (Fig. 2). In patients of age <20 years, 5 (55.6%) patients had stroke, in patients of age 20-40 years, 9 (19.6%) patients had stroke while in old age group (41-60 years), 14 (31.1%) patients had stroke. Frequency of stroke was equal in males (14 (28.6%)) and females (14 (27.5%)).

Table No.1: Baseline characteristics of patients (n = 100)

Age (Years)	38.70 ± 13.40
BMI (kg/m^2)	20.01 ± 2.37
Duration of mitral stenosis (years)	3.09 ± 1.46

Table No.2: Distribution of stroke in patients

Variable	Stroke		Total	P value
	Yes	No		
Age (years)				
<20	5 (55.6%)	4 (44.4%)	9	0.073
20-40	9 (19.6%)	37 (80.4%)	46	
41-60	14 (31.1%)	31 (68.9%)	45	
Sex				
Male	14 (28.6%)	35 (71.4%)	49	0.901
Female	14 (27.5%)	37 (72.5%)	51	
Body Mass Index				
Under weight	11 (28.9%)	27 (71.1%)	38	0.269
Normal weight	17 (27.4%)	45 (72.6%)	62	
Duration (years)				
1 – 2	9 (26.5%)	25 (73.5%)	34	0.807
3 - 5	19 (28.8%)	47 (71.2%)	66	

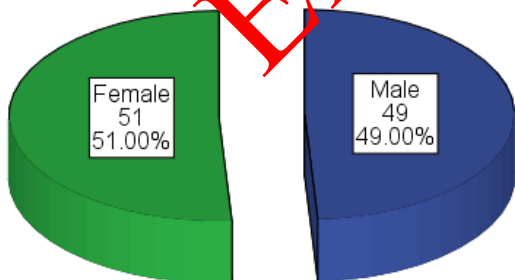


Figure No. 1: Gender distribution of patients

Among underweight, stroke occurred in 11 (28.9%) however, in normal BMI patients, stroke occurred in 17 (27.4%). The patients who had duration of mitral stenosis 1-2 years, stroke occurred in 9 (26.5%) while in patients having mitral stenosis for 3-5 years, stroke occurred in 19 (28.8%) cases (Table 2).

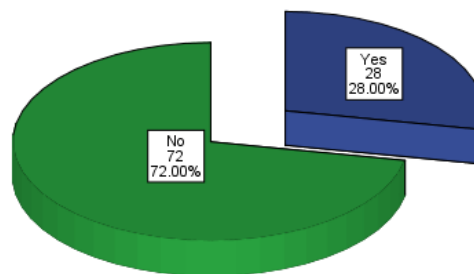


Figure No. 2: Distribution of stroke in patients.

DISCUSSION

The two well known factors for stroke, rheumatic valvular heart disease and mechanical prosthetic valves are independent of atrial fibrillation. In turn the most well known valve defects are mitral stenosis and calcific aortic stenosis.^{11,12}

In our study, we included 100 patients of mitral stenosis who were registered in different teaching hospitals of Lahore district. Patients mean age was 38.70 ± 13.40 years (16-60 years). There were 49 (49%) males while 51 (51%) females. The mean BMI of patients was $20.02 \pm 2.37 \text{ kg/m}^2$. The mean duration of mitral stenosis was 3.09 ± 1.46 years. In our study, ischemic stroke was found to develop in 28% cases of mitral stenosis. Aboix and Alió showed that only 1.2% cases of mitral stenosis developed stroke.¹³ Akdemir et al¹⁴ showed that the incidence of stroke was found to be 24.5% in patients with mitral stenosis.

Although the role of anticoagulants in the prevention of thromboembolic events in atrial fibrillation not caused by rheumatic fever is established, but their role recent transient ischaemic attacks (TIAs) /minor ischaemic stroke is still debated.¹⁵

We stratified data for age, gender, duration of mitral stenosis and BMI of patients to check the significance of these factors on occurrence of stroke in mitral stenosis patients. In patients of age <20 years, 5 (55.6%) patients had stroke, in patients of age 20-40 years, 9 (19.6%) patients had stroke while in old age group (41-60 years), 14 (31.1%) patients had stroke. This showed that age, although insignificant, but has effect on stroke occurrence. In this sample, we can see that in patients aged >40 years, number of patients with stroke is higher. Thus as age increases along with mitral stenosis can cause higher chances of stroke.

Frequency of stroke was equal in males (14 (28.6%)) and females (14 (27.5%)), showing no gender discrimination in occurrence of stroke. Among underweight patients, stroke occurred in 11 (28.9%) however, in normal BMI patients, stroke occurred in 17 (27.4%). This showed that weight or BMI of patient did not affect the occurrence of stroke. The patients who had duration of mitral stenosis 1-2 years, stroke occurred in 9 (26.5%) while in patients having mitral

stenosis for 3-5 years, stroke occurred in 19 (28.8%) cases, showing no effect on occurrence of stroke.

CONCLUSION

Ischemic stroke is a risk in 25% of patients with mitral stenosis. But regular screening of mitral stenosis patients should be done for cerebrovascular elements to prevent the patients from cerebrovascular events.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Histopathological Spectrum of Lesions of Hysterectomy Specimens

Mariam Riaz¹, Bibi Sara², Abdul Haseeb Khan¹, Fazl-e-Raziq¹ and Nargis Danish¹

ABSTRACT

Objective: To assess the range of pathological lesions in the hysterectomy specimens and correlate the findings with the clinical indications.

Study Design: Observational study

Place and Duration of study: This study was conducted at the Department of Pathology, Women Medical College Abbottabad and Department of Gynaecology and Obstetrics, Women and Children Teaching Hospital Abbottabad from Jan 2013 to Dec 2015.

Materials and Methods: All cases of hysterectomy sent to the Histopathology Department were included in the study. Data regarding patient characteristics and indications were collected from files and patients records. The slides stained with hematoxylin and eosin were examined. Pathological findings in the uterus, cervix and ovaries were noted. The results were analysed by using percentages.

Results: Total of 110 hysterectomy specimens were received. The commonest type of hysterectomy was Total abdominal hysterectomy with bilateral salpingo-oophorectomy with 59 cases (53.6%). Mean age of patients was 46 years ranging from 35 - 67 years. Most common preoperative diagnosis was fibroid uterus in 38 cases (34.5%) followed by dysfunctional uterine bleeding in 34 cases (30.9%). Most common pathology found in uterine corpus was Leiomyoma (36.3%) followed by adenomyosis (19%) and endometrial hyperplasia (11.8%). Chronic cervicitis in cervix and functional cysts in ovaries were most common histological findings. Ovarian neoplasms accounted for 14% of ovarian pathology. 67.6% of cases pre-operatively diagnosed as DUB had a defined pathology like adenomyosis, leiomyoma or both, endometrial polyps and endometrial hyperplasia.

Conclusion: Uterine fibroids and adenomyosis were the most common benign lesions. Justification of hysterectomy is proved when the Histopathology report is compatible with the preoperative diagnosis. All hysterectomy specimens should be sent for histopathological examination regardless of the pre-operative microscopic assessment.

Key Words: Hysterectomies, Indication, Pathology

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INTRODUCTION

Uterus, a vital reproductive organ is subjected to many benign and malignant diseases.

Together with the lesions that affect the cervix, the lesions of the corpus of the uterus and the endometrium account for most patient visits to gynaecologists. Hysterectomy is the commonest gynaecological surgery in pre and post-menopausal women all over world.¹ It is the second common surgical procedure in USA.²

It is the definitive cure for pelvic pathology including dysfunctional uterine bleeding, fibroids, utero-vaginal

prolapse, endometriosis and adenomyosis, pelvic inflammatory disease, pelvic pain, gynaecological cancers and obstetric complications.³

It produces an intact uterus and consequent control over tissue sampling and hence enabling determination of the origin of a particular lesion.⁴ The diagnostic value of histopathological examination is well explained in patients with malignancy where adjuvant treatment is dependent upon grade and extent of invasion of disease. Diagnosis of adenomyosis is only established by histopathology, while DUB is a diagnosis of exclusion.

Life time risk of hysterectomy is 25% in the U.S.A and 10.5% in Denmark.⁵ Around 60-80% of hysterectomies in the USA and the UK are performed via abdominal route.⁶ Rates of hysterectomy vary with geographic area, patient expectations and training and practice patterns of the local gynaecological surgeons

This study was conducted to assess the range of pathological lesions in the hysterectomy specimens in our setup and correlate the histopathological findings with the clinical indications.

¹. Department of Pathology, Women Medical College, Abbottabad.

². Department of Obstet & Gynae, Jinnah International Teaching Hospital, Abbottabad.

Correspondence: Dr. Mariam Riaz, Department of Pathology, Women Medical College, Abbottabad.

Contact No: 0300-8364904

Email: drmariaz3@gmail.com

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MATERIALS AND METHODS

This present retrospective study was conducted at Department of Pathology, Women Medical College and Department of Gyneacology and Obstetrics, Women and Children Teaching Hospital Abbottabad from the year Jan 2013 to Dec 2015. 110 cases of hysterectomy specimens were received in Histopathology Dept. The clinical information and the relevant investigations of the patients who underwent hysterectomy during this period were obtained from the histopathological requisition forms and clinical case sheets.

The specimens were properly labelled, numbered and fixed in 10% buffered formalin. After a detailed gross examination of the specimens, multiple bits were taken from representative sites, processed and paraffin blocks were made. The blocks were sectioned and stained routinely with hematoxylin and eosin. After thorough microscopic examination a histopathological diagnosis was given. Data was analysed by using percentages

RESULTS

A total of 110 hysterectomy specimen were received. 62.7% of the patients were in the age group 41 – 50 years. Mean age of patients was 46 years ranging from 35 - 67 years (Table 1).

Table No.1: Age wise distribution of women undergoing hysterectomy (n = 110)

Age (yrs)	Total cases	Percentage
30 – 35	03	2.7%
36 – 40	08	7.2%
41 – 45	28	25.4%
46 – 50	41	37.2%
51 – 55	11	10%
56 – 60	12	10.9%
Above 60	07	6.3%

Table No.2: Distribution of Types of Hysterectomies (n = 110)

Types of Hysterectomy	Total cases	Percentage
Total Abdominal Hysterectomy With Bilateral Salphingo-Oophorectomy	59	53.6%
Total Abdominal Hysterectomy	23	20.9%
Total Abdominal Hysterectomy With unilateral Salphingo-Oophorectomy	12	10.9%
Vaginal Hysterectomy	14	12.7%
Subtotal / Supracervical hysterectomy	02	1.8%

Table No.3: Clinical Indications of Hysterectomy (n = 110)

Clinical Diagnosis	Total cases	Percentage
Leiomyoma (Fibroids)	38	34.5%
Dysfunctional Uterine Bleeding (DUB)	34	30.9%
Uterovaginal (Uv) Prolapse	14	12.7%
Endometrial Hyperplasia	07	5.4%
Adenomyosis	07	6.3%
Ovarian Cysts/Tumors	06	5.4%
Uterine polyps	02	2.7%
Cervical dysplasia	01	0.9%
Carcinoma Cervix	01	0.9%

Table No.4: Histopathological lesions of endomyometrium of corpus uteri (n=110)

Histopathological Finding	Total cases	Percentage
Lesions in the endometrium		
Atrophic endometrium	07	6.3%
Simple cystic hyperplasia	07	6.3%
Complex hyperplasia without atypia	04	3.6%
Complex hyperplasia with atypia	02	1.8%
Disordered proliferative phase	06	5.4%
Pseudodecidual change	04	3.6%
Endometrial polyp	05	4.5%
Endometritis	05	4.5%
Normal histology	70	63.6%
Lesions in the myometrium		
Leiomyoma	40	36.3%
Adenomyosis	21	19%
Leiomyoma & Adenomyosis	04	3.6%
Normal histology	45	40.9%

The commonest type of hysterectomy was Total Abdominal Hysterectomy with Bilateral Salpingo-oophorectomy 53.6% with 59 cases (Table 2). Various indications for hysterectomy are listed in Table 3. Commonest indication was fibroid, followed by Dysfunctional uterine bleeding.

On histopathology in many hysterectomy specimens morethan one pathology was found.

Most common pathology found in uterine corpus was Leimyoma followed by adenomyosis (Table 4). Chronic cervicitis was an incidental finding in most of the cases. Only one case of squamous cell carcinoma of the cervix was noted (Table 5). Functional cysts were most common histological findings in 35.2% ovarian specimen. While ovarian neoplasms accounted for 14% of ovarian pathology (Table 6).

34 cases diagnosed clinically as dysfunctional uterine bleeding were histopathologically identified as follows: 14 adenomyosis (41%), 02 leiomyoma (5.8%), 04 cases of combined pathology having adenomyosis and leiomyoma (11.7%), 02 Endometrial polyps (5.8%), 01 endometritis (2.9%). 11 cases (32.3%) did not reveal any abnormality.

Table No.5: Histopathological Lesions in the cervix (n=108)

Histopathological Finding	Total cases	Percentage
Chronic Non-Specific Cervicitis	83	76.8%
Chronic cervicitis with squamous metaplasia of endocervix	09	8.3%
Papillary endocervicitis	02	1.8%
Endocervical Polyp	02	1.8%
Cervical Leiomyoma	02	1.8%
Cervical dysplasia	02	1.8%
Squamous cell carcinoma	01	0.9%
Normal histology	07	6.3%

Table No.6: Histopathological Lesions in the ovary (n=71)

Histopathological Finding	Total cases	Percentage
Simple follicular cyst	21	29.5%
Hemorrhagic cyst	02	2.8%
Corpus luteal cyst	02	2.8%
Serous cystadenoma	05	7%
Serous cystadenocarcinoma	01	1.4%
Borderline serous tumor	01	1.4%
Mucinous cystadenoma	01	1.4%
Benign cystic teratoma	01	1.4%
Metastatic mucinous carcinoma	01	1.4%
Endometriosis	02	2.8%
Normal histology	34	47.8%

DISCUSSION

Hysterectomy is the most commonly performed major gynaecological surgery throughout the world. Limited data is available in our community regarding histopathological analysis of hysterectomy specimens and relationship between the preoperative clinical indications and pathological diagnosis. It is observed that more than 90% of gynaecological surgeries are performed for benign conditions with the major objective of improving the patient's quality of life.⁷ In our study Abdominal approach was preferred in 87.2 % and vaginal route for cases of uterovaginal prolapse in 12.7% cases. Majority of the cases (53.6%) included TAH with bilateral salpingo-oophorectomy. Comparable findings were noted in a study by

MacKanzie and Abdullah et al.^{8,9} Peak age incidence of most of the pathologies was 41-50 years which is similar to that reported in other studies.^{10,11}

The indications for abdominal hysterectomy in our study were consistent with other studies.

Commonest indication was fibroid (40.4%) and DUB (29%) in the study by Jaleel R.¹²

Similar results have been reported by Shergill SK. and Gupta et al.^{13,14} Clarke A has reported the commonest indication to be DUB (58%), followed by fibroids (23.2%).¹⁵

Upon review of histopathology reports, leiomyoma was the most common diagnosis in our study, followed by adenomyosis. Other national studies have also reported leiomyoma as the most common pathological lesion with the frequencies ranging from 25-48%^{16,17,18}

Incidence of leiomyoma reported is 25.8% in Saudi Arabia¹⁹, 48 % in Nigeria²⁰ and 78% in USA.

²¹Geographical and racial influences are thus apparent on the prevalence of uterine leiomyoma. Hysterectomy was treatment of choice as it decreases the morbidity associated with massive vascular leiomyoma

Adenomyosis was next common uterine pathology as seen in other studies. Its prevalence was 56.5% in a study at Agha Khan University Hospital Karachi and 20.6% in Swat.^{22,23} Incidence of adenomyosis is high in parous women which supports the theory of implantation of the basal endometrium deep in the myometrium. Transvaginal ultrasound is the preferred choice for diagnosis of adenomyosis.²⁴ Adenomyosis is under-diagnosed because of relatively less use of imaging techniques and thus hysterectomy remains the diagnostic and therapeutic modality. Higher degree of suspicion and better technique may help in diagnosing the missed indications.

Four cases (3.6%) in this study revealed the presence of both leiomyoma and adenomyosis. Other studies have also reported this association.^{12,18} Endometrial hyperplasia constituted 11.7% cases in our study. A great difference of opinion prevails in the literature regarding the incidence of endometrial hyperplasia which may in part be due to different conceptions of what constitutes endometrial hyperplasia. This findings are similar to study by Jaleel et al.¹²

No case of endometrial carcinoma was diagnosed in this series, which denotes low frequency of carcinoma and other malignancies of the body of uterus as compared to other gynaecological malignancies in this region. This is similar to the findings of other workers in the sub-continent²⁵

Most common incidental finding was chronic cervicitis with or without squamous metaplasia in 85% cases. Cervicitis is extremely common in parous women. The incidence was similar to that reported by other studies.^{18,26} Cervical dysplasia was seen in 2 cases and a single case of squamous cell carcinoma was reported in our study.

In ovarian specimens, cysts of variable morphology was the most common pathology noted. Majority were simple follicular cysts. Incidence of the functional ovarian cysts was similarly high in other studies.^{3, 27}

Ovarian tumours constituted 14% of ovarian pathology in our study. Most common were serous cystadenomas. Among malignancies a single case of serous cystadenocarcinoma, metastatic mucinous carcinoma and one case in borderline category was noted. The incidence is close to that quoted by Talukder and Jha et al.^{26, 28} Ovarian tumors were observed in 13.1% of the hysterectomy cases by Verma D.²⁹

Eighty three percent gynaecologist recommend oophorectomy in postmenopausal women, fifty percent in perimenopausal women and less than five percent in premenopausal women at the time of hysterectomy.³⁰ However, removal of ovaries without the suspicion of any pathology seems to be unnecessary. The removal of ovaries leads to estrogen hormone deficiency, hastens up the menopause and patient's psychosexual health is affected.

Majority of pre-operative diagnosis were confirmed on hysterectomy. Those missed were mainly patients with dysfunctional uterine bleeding. DUB is a blanket diagnosis. It was confirmed in 32.3% of cases clinically diagnosed as DUB. Rest of our cases preoperatively diagnosed as DUB revealed adenomyosis, small leiomyomas or both and endometrial polyps on histopathology. Almost similar findings have been reported by Jaleel et al. and Shergill SK.^{12, 13}

CONCLUSION

The present study provides a fair insight into the histological patterns of lesions in hysterectomy specimens in our institution. Though the histopathological analysis correlates well with the clinical diagnosis, quite a few lesions are also encountered as pure incidental findings. Hence, it is mandatory that every hysterectomy specimen should be subjected to detailed histopathological examination so as to ensure a better postoperative management.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Knowledge and Practices for Healthy Lifestyle among Diabetics in Lahore

Rabia¹ and Sahar Farial²

ABSTRACT

Objectives: To assess the knowledge and Practices for healthy lifestyle among diabetics in Lahore, Pakistan.

Study Design: Observational / descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Outpatient Departments (OPD), Jinnah Hospital Lahore, Pakistan from April-May 2016.

Materials and Methods: SPSS 21 was used for data interpretation, percentages, frequencies were calculated and table was formed. Sample of 100 diabetic patients was taken. Sample was selected by convenient non-probability method of sampling. People of age group 20 to 75 years having history of diagnosed diabetes for at least 2 years were selected.

Results: The results of present study revealed that diabetes is most prevalent in age group of 40-60 years (54%). Health practices were found to be good in those who attended university (88.88%) as compared to those who never went to school. Disease was distributed in respondents of upper economic class 0 of respondents). Males had better knowledge (63%) than females (37%). 58% people who had disease were those with Positive family history. 57% of people believed that diabetics should take multiple small meals instead of few large ones. 67% of respondents believed that all underground vegetables are prohibited for diabetics and 50% believed that fish is best type of meat for their health. 83% of the sample believed that vegetable oil as best kind of fat. 93% believed that regular talk is important for disease control and 70% believed that foot care is necessary in diabetics. Only 35% people believed had adequate knowledge about HbA1c. 45% people believed that diet drinks be consumed as much as wanted.

Conclusion: Our study sample it is concluded that overall community awareness about disease duration, Complications and preventive measures of diabetes mellitus is satisfactory. Well educated diabetic patients have good knowledge about disease regular checkup. Complications and preventive measures (for example; regular walk) than less or uneducated patients. Males have good knowledge than females, but overall knowledge about diet schedule, medication and timings of test was not satisfactory. Care about feet was not practiced. Males were affected more; especially good socioeconomic status at age 40-60 years. Health practices were not found to be up to the mark. So, appropriate education about dietary control, life style, regular checkups and proper use of medicines should be given to control the disease.

Key Words: Knowledge; Practices; Healthy Lifestyle; diabetics; Lahore, Pakistan

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INTRODUCTION

Diabetes, mellitus has become a major chronic disease globally. WHO (2007), estimated that 30 million people worldwide had diabetes in 1985 and this estimation increased to 135 million a decade later.¹ WHO also estimated that the number of people with diabetes, worldwide, in 2000 was 1.1 million and it is likely to be more than double by the year 2030. While in Malaysia diabetes was ranked at the number six top killers among the other non-communicable diseases in year 2005.² There are two main types of diabetes which is insulin dependent diabetes mellitus (Type 1 DM) and non-

insulin dependent diabetes mellitus (Type 2 DM). Other types include gestational and drug induced diabetes mellitus. However, type 2 DM is the most common type of diabetes and usually seen in people over 35 years of age.³ Those who are at high risk of getting type 2 DM are people who are obese. Practice unhealthy dietary habits, middle aged or elderly ones, people who have a family history of type.

DM, those who are physically inactive, or females have history of Gestational diabetes during pregnancy. Apparently, those factors are all modifiable. On the other hand the well-educated individuals with a good attitude, who always practice a healthy lifestyle, healthy-diet and exercise regularly, have reduced possibility of being inflicted with diabetes disease.⁴

Furthermore, people with prolonged diabetes are at high risk to develop long term health complications such as heart attacks, strokes, kidney failure, blindness, amputations and etc.⁵ Thus, it is vital to reduce the mortality associated with the complications of diabetes mellitus as early as possible. This might avoid from sustaining its long term treatment cost which is very

¹. Department of Obs & Gynae, Saira Memorial Hospital, Lahore.

². Department of Medicine, RHC Narang Mandi, Sheikhpura.

Correspondence: Dr. Rabia, Department of Obs & Gynae, Women Medical Officer, Saira Memorial Hospital, Lahore.
Contact No: 0333 6413083
Email: iqbalian28@outlook.com

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costly and indirectly would cause the government to spend more money to solve it.

The studies have identified the factors related to the increase of DM among the people in particular study areas. As a result, it brings much better understanding of the importance of primary prevention and control of diabetes in the community. It is however very difficult to change peoples' behavior and attitudes towards diabetes as it requires well-structured diabetes program to educate every individual, especially those who have diabetes.

Moreover, it is a question whether the information regarding diabetes disease is accessible to those who live in rural areas, as that most of the healthservices are centered in capital. Those people are, actually the high risk population. Mainly, they are a group of people NA, ho have low educational level with low income, unemployed, practice unhealthy lifestyle and have less accessibility to information.⁶Therefore, it is crucial to do a study on the knowledge, attitude and practice of diabetes among the villagers who have diabetes in that particular-area.

DM is a challenging issue in all over the world. If proper planning and its prevention not take place in Pakistan, epidemic of diabetes will be fatal. There is a need of time to implement primary prevention, early diagnosis, and start educational program for its prevention, preventive programs will be beneficial as to target general population rather than diseased or high risk population.⁷

Obesity and physical inactivity are modifiable risk factors of type 2diabetes, proved by many studies. If we detect risk factors of disease earlier disease can be prevented and disease onset can be delayed. Knowledge of the disease plays a major role in early prevention, detection and future development of disease.

MATERIALS AND METHODS

An observational (descriptive) cross sectional study was carried out at outpatient departments (OPD), Jinnah Hospital, Lahore. Pakistan. Duration of this study was from April-May 2016.

Sample of 100 diabetic patients in OPD Jinnah Hospital, Lahore was taken. Sample was selected by convenient non-probability method of sampling. People of age group 20 to 75 years having history of diagnosed diabetes for at least 2 years were selected.

Data Analysis: The data from a questionnaire was translated back to English and analyzed by SPSS 21. The frequency distribution tables were made. Frequency of good knowledge and poor knowledge was found among different demographic variables i.e. gender, Economic status and education.

RESULTS

The results of present study revealed that out of sample of hundred people conducted disease was most

prevalent in age group of 40-60 years (54 %). Moreover 63% of affected respondents were males with distribution of disease not apparently affected by the level of education although people with no schooling or schooling up to 5th grade were generally more affected, 26% and 23% respectively. Health practices were found to be good in these who attended university (88.88%) as compared to those who never went to school (85.18%). Disease was distributed in people of upper economic class (56% of respondents) and only 3% prevalence in low economic class people.

Males had good knowledge (63%) than females (37%). 58%people who had disease were those with positive family history. 77% people were well aware that diabetes is a lifelong chronic disorder and 94 % people believed that regular blood glucose monitoring is important for disease control. 55% people considered fasting as the reliable time of blood glucose monitoring and 51% people considered oral medication as best mode of medication for their health. 72% people believed that insulin a red flag indicating that the disease is in the last stage. 47 % of people believed that three meals should be taken by a diabetic per day and 57% of people believed that portion of meal should be small. 67% of people believe that all underground vegetables are prohibited for diabetics and 47% believed that only 1 type of fruit should be taken by a diabetic per day. 50% of people believed that fish is best type of meat for their health and 83% believed that vegetable oil is best kind of fat. 93% believed that regular walk is important for disease control and 70% believed that foot care is necessary in diabetics. None of the respondent believed that persistent high sugar levels can affect wart, kidney and eyes all three organs. Only 35% people believed that HbA1c should be monitored three times per year and a significant number of people; about 4%; did not know about HbA1c test. 2% people believed that fresh juices can be consumed by diabetics as much as they want and .15% believed that diet drinks could be consumed as much as wanted, only1 % people believed that all types of juices and drinks are prohibited for diabetics.

DISCUSSION

The scientific knowledge of diabetes mellitus is a vital source for guidance and education of diabetic patients regarding their self-care. Self-care includes proper intake of diet, physical exercise, regular monitoring of BSR and taking medication either oral or insulin.⁸ many studies regarding relationship between information and self-care practices in newly diagnosed diabetic people. Many studies are present that involved the general peoples and type 2 diabetic patients.

Many Researches available that involved type 2 diabetic patients having the disease since many years as well as covered general population. This study was conducted to see the relationships between knowledge

and self-care practices among newly diagnosed type 2 diabetics at different hospitals.⁹⁻¹¹

Insulin is recommended in late stage of disease 72% believed that however they were not known about the fact that it was because of a specific diabetic type like juvenile diabetes they were advised to use insulin. Insulin use can prevent from complications 81% people believed that. Only 25% people aware from that, diabetics patients should take 5 small meals rather than 3 large meals, only 10% practiced this routine. A large proportion (70%) people believed that all types of vegetables can be consumed by diabetics which is in contrast to medical reality and actually depend upon glycemic index. It was encouraging to know that 50% of respondents considered fish as the best variety of meat as compared to mutton beef and chicken. 93% people are very well aware about the significance of regular walk for control of disease but the myth that fresh juices and diet drinks do no harm to a diabetic body was heart-rending.

In this study majority of people (66%) having basic and (78%) having technical information about diabetes mellitus. A study conducted in Singapore to see the level of information about diabetes results shows respondents had satisfactory level of information about diabetes. Another study that was conducted in Oman shows that level of knowledge about DM was adequate.¹²⁻¹³ A study was conducted in Aga Khan Hospital Karachi showed that 12 % people had knowledge of symptoms, 35% had treatments knowledge and 53% of patients had knowledge of complications of diabetes.(90%) of this study's respondents did not check their BSR regularly. Blood glucose level monitoring increases with the knowledge of patients. The diabetic patients in this study showed results of self-monitoring unlike to that study from Singapore.¹⁴⁻¹⁵

Other findings showed that people with good knowledge did physical exercise and exercising rate increasing with level of knowledge. A study in Peshawar, showed that 7 % of people had DM from nine years did exercise for the control of Blood glucose.¹⁶ In our study many respondents did not take of their feet regularly. Only 16% of patients in this study did not smoke. Similar results were found in all groups and the relationship was significant in basic and technical knowledge groups.^{17,18} Diet plays a vital role in management and prevention of Diabetes. Majority (90%) of people did not follow the dietary advice by consultants.¹⁹

In this study it was found that most of less educated diabetics believed that diet drinks and fresh juices could be taken as much as wanted. Similar results were found in previous studies Conducted in the developing countries with poor awareness. This myth was not found in developed countries like United States of America.

This study revealed the fact that respondents had average knowledge of diabetes but not having appropriate self-care. Most of the people in this study had positive family history of diabetes. Diabetic family member share their knowledge and experience with non-diabetic people and newly diagnosed cases.²⁰⁻²² secondly respondents did not attend any education programs. The lack of time, ignorance may be the reason for that.²³⁻²⁴ The results of this study encourage a Positive Outlook: appropriate education about dietary control, life style, regular checkups and use of medicines should be given to control the disease.²⁵⁻²⁸

CONCLUSION

Our study sample it is concluded that overall community awareness about disease duration, complications and preventive measures of diabetes mellitus is satisfactory. Well educated diabetic patients have good knowledge about disease regular checkup, complications and preventive measures (for example; regular walk) than less of uneducated patients. Males have better knowledge and females. But knowledge about diet schedule, medication and timings of testing blood sugar level as not satisfactory. Care about feet was not practiced. Therefore, appropriate education about dietary control, life style, regular checkups and use of medicines should be given to control the disease.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Use of Alcoholic Cautery in Ingrown Toenail

Imran Idris Butt¹, Munawar Nadeem¹, Rehan Anwar¹, Kamran Hamid⁴, Muhammad Sabir²
and A.Hamid³

ABSTRACT

Objectives: To study the effect of alcoholic cautery with surgery in an ingrown toenail.

Study Design: Experimental study

Place and Duration of Study: This study was conducted at the Department of Surgery at Idrees Teaching Hospital Sialkot and Allama Iqbal Memorial Teaching Hospital Sialkot from January 2014 to July 2016.

Materials and Methods: One thousand patients of ingrown toenail were included in this study. The alcoholic cautery was used with surgery in all cases. The procedure of surgery was wedge resection of the toe nail and nail fold. After excision of the affected portion of the ingrown nail fold and nail bed, the cotton swab soaked in 100% methyl alcohol was put on the excision area for 2 -3 minutes.

The performa was designed to record age, sex, socio economic status, area distribution, family history of the ingrown toe nail patients, date of surgery, surgery type, time duration of procedure, stay in the hospital, return to work time and healing time. Patients follow up is also recorded. The fully informed written consent of every patient prior to procedure was also recorded. The data was analyzed by SPSS version 10.

Results: In this prospective experimental study incidence of ingrown toe nail was maximum (55.3%) 553 cases at the age of 14-19 years & minimum (11.2%) 112 cases at the age of 26-30 years. It was seen that the patients of ingrown toe nail were maximum (66.3%) 663 cases of male as compared to female (33.7%) 337 cases. Urban population had (77.9%) 779 cases as compared to rural population (22.1%) 221 cases. The patients of ingrown toe nail were maximum (66.3%) 663 cases in high socio economic status group and minimum (10.4%) 104 cases in low socio economic group. In our study the recurrence of ingrown toe nail after alcoholic cautery was (05%) 50 cases.

The procedure for ingrown toe nail was conducted within 2-6 hours after admission of the patient. The operation time was 30-60 minutes. The patients discharged after operation within 1-3 hours.. The healing time and return to work was 1-2 weeks.

Conclusion: It was concluded that use of alcoholic cautery with surgery in ingrown toenail the recurrences were very much reduced.

Key Words: Alcoholic cautery, Ingrown toenail, Surgery

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INTRODUCTION

Ingrown Toenail is also known as Onychocryptosis¹. This nail disease is a common and painful. The patients of ingrown toenail fall in teenagers and young adults (second and third decades of life). The pain is the commonest symptom in ingrown toenail. If this disease is left untreated it leads to infection, discharge and difficulty in walking. It greatly affects the quality of life of the patient. Diagnosis of ingrown toenail is very easy and apparent. Number of treatment approaches exists, ranging from a conservative medical treatment to surgical treatment².

In ingrown toenail penetration of spicules of nail at the edge of the nail plate take place, which incite an inflammatory response. The most effected part in case of ingrown toenail is great toes.³

The aetiology of the ingrown toenail can be classified whether the primary fault is the nail itself or the soft tissues at the side of the nail.^{4,5,6} There is one theory that the nail is not the real cause, but the excess skin surrounding the nail is the real cause.¹⁶ The persons who develop ingrown toenail have a wide area of tissue medial and lateral to the nail and this tissue due to weight bearing causes, bulge up around the nail, leading to pressure necrosis.^{6,7}

In adolescence and adult, increased perspiration causing the nail fold to become soft and participation in sports result in the production of nail spicules, which can penetrate the lateral skin fold of the nail. In older persons, due to reduced mobility or vision problems spicule formation can be caused.⁷ Risk of developing ingrown toe nail is shape of the nail. In 80% of cases of ingrown toe nail condition is unilateral and mostly affects the males. The poorly fitting shoes and

¹. Department of Surgery / Anatomy² / Medicine³, Sialkot Medical College, Sialkot

². Department of Surgery Allama Iqbal Memorial Teaching Hospital, Sialkot.

Correspondence: Dr. Imran Idris Butt, Assistant Professor of Surgery, Sialkot Medical College, Sialkot.

Contact No: 0300-8611304

Email: hrd.smcs@yahoo.com

improperly trimmed toe nails are main factors for the development of an ingrown to enail.^{7,9,13}

MATERIALS AND METHODS

One thousand patients of ingrown toenail were included in this prospective experimental study in the department of surgery at Idrees Teaching Hospital Sialkot and Allama Iqbal Memorial Teaching Hospital Sialkot during January 2014 to July 2016. The alcoholic cautery was used with surgery in all cases. The procedure of surgery was wedge resection of the toe nail and nail fold. After excision of the affected portion of the ingrown nail fold and nail bed, the cotton swab soaked in 100% methyl alcohol was put on the excision area for 2 -3 minutes.

The performa was designed to record age, sex, socio economic status, area distribution, family history of the ingrown toe nail patients, date of surgery, surgery type, time duration of procedure, stay in the hospital, return to work time and healing time. Patients follow up is also recorded. The fully informed written consent of every patient prior to procedure was also recorded. The data was analyzed by SPSS version 10.

RESULTS

In this prospective experimental study incidence of ingrown toe nail was maximum (55.3%) 553 cases at the age of 14-19 years & minimum (11.2%) 112 cases at the age of 26-30 years as shown in Table no: 1. It was seen that incidence of the male patients of ingrown toe nail was higher (66.3%) 663 cases as compared to female (33.7%) 337 cases as shown in Table no: 2. Urban population had (77.9%) 779 cases as compared to rural population (22.1%) 221 cases as shown in table no:3. The patients of ingrown toe nail were maximum (66.3%) 663 cases in high socio economic status group and minimum (10.4%) 104 cases in low socio economic group as shown in table no:4. In our study the recurrence of ingrown toe nail after alcoholic cautery was (19%) 119 cases as shown in table no.5. The procedure for ingrown toe nail was conducted within 2-6 hours after admission of the patient. The patients discharged after operation within 1-3 hours. The operation time was 30-60 minutes. The healing time and return to work was 1-2 weeks. The patients were called for follow after 1 week.

Table No.1: Age distribution in use of alcoholic cautery in ingrown toe nail

Sr #	Age (years)	Cases	Percentage
1.	14-19	553	55.3%
2	20-25	335	33.5%
3	26-30	112	11.2%
	Total	1000	100%

Table No.2: Sex distribution in use of alcoholic cautery in ingrown toe nail

Sr #	Sex	Cases	Percentage
1.	Male	663	66.3%
2	Female	337	33.7%
	Total	1000	100%

Table No.3: Area distribution in use of alcoholic cautery in ingrown toe nail

Sr #	Area	Cases	Percentage
1.	Urban	779	77.9%
2	Rural	221	22.1%
	Total	1000	100%

Table No. 4: Socio economic status distribution in use of alcoholic cautery in ingrown toe nail

Sr .#	Socio economic status	Cases	Percentage
1.	High	663	66.3%
2	Middle	233	23.3%
3.	Low	104	10.4%
	Total	1000	100%

Table No.5: Recurrence of ingrown toe nail in use of alcoholic cautery

Sr #	Recurrence	Cases	Percentage
1.	"	50	05%

DISCUSSION

The worldwide common source of morbidity is also ingrown toenail and it has a significant impact on the quality of life of an individual¹⁴. An ingrown toenail requires identification of the stage and evaluation of the affected tissues¹⁵. Recurrent infection, pain and failure of conservative treatment, nail surgery should be considered¹⁶. The clinical situation is important to select the surgical technique, best suited to the patient¹⁷. It was proved by evidence the wedge resection of ingrown toenail combined with the use of alcoholic cautery, was more effective to prevent recurrence of ingrowing toenails¹⁸⁻²⁰.

In this prospective experimental study incidence of ingrown toe nail was maximum (55.3%) 553 cases at the age of 14-19 years & minimum (11.2%) 112 cases at the age of 26-30 years. It was seen that the incidence of male patients of ingrown toe nail was higher (66.3%) 663 cases as compared to female (33.7%) 337 cases. Urban population had (77.9%) 779 cases as compared to rural population (22.1%) 221 cases. The patients of ingrown toe nail were maximum (66.3%) 663 cases in high socio economic status group and minimum (10.4%) 104 cases in low socio economic group. In our study the recurrence of ingrown toe nail after alcoholic cautery was (19%) 119 cases.

The procedure for ingrown toe nail was conducted within 2-6 hours after admission of the patient. The patients were discharged after operation within 1-3 hours. The operation time was 30-60 minutes. The

healing time and return to work was 1-2 weeks. The patients were called for follow after 1 week. It was concluded that the incidence of recurrence of ingrown toe nail was reduced with use of alcoholic cautery with surgery. Our results coincide with study of other authors given in the literature².

CONCLUSION

The evidence suggests that wedge resection of the toe nail and nail bed combined with the use of alcoholic cautery, was more effective at preventing recurrence of ingrowing toenails. Despite innumerable treatment options, ideal technique is still to be invented.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Maternal Knowledge, Attitudes and Practices About Diarrhoea in Children

Knowledge of
Diarrhoea in
Children

Ayesha Nadeem and Sidra Shaukat

ABSTRACT

Objective: The objective of the study is to know the maternal knowledge, attitudes and practices about diarrhoea in children.

Study Design: Descriptive / Cross sectional study

Place and Duration of Study: This study was conducted at the Children Outdoor of Tehsil Hospital Yazman (District Bahawalpur) from September 20, 2016 to October 19, 2016.

Materials and Methods: The mothers carrying their children having diarrhoea were included. The children not carried by their mothers or sick enough to be admitted in the hospital or needed to be referred were excluded from the study.

Results: One hundred mothers were included in the study. Only 4% mothers were having at least Higher Secondary Certificate while 14% were uneducated. 41% mothers defined diarrhoea as 'increase in frequency' while 35% as 'decrease in consistency'. The main causes of diarrhoea as narrated by mothers were unhygienic water or food or both, eruption of teeth and eating earth. 71% mothers answered 'yes' to the question 'Does the fluid intake be increased during diarrhoea?' 65% mothers answered 'yes' to the question 'Is oral rehydration salt useful during diarrhoea?' 61% mothers were in the opinion of stopping or modifying the diet during diarrhoea. The response of mothers to the questions 'Does hand washing help in the prevention of diarrhoea?', 'Does clean water/food help in the prevention of diarrhoea?', 'Does proper disposal of excreta help in the prevention of diarrhoea?' and 'Does breast feeding help in the prevention of diarrhoea?' was 'yes' in 48%, 77%, 38% and 56% cases respectively.

Conclusion: There is need of improvement in the knowledge of mothers about diarrhoea in children.

Key Words: Diarrhoea; Education; Oral rehydration salt; Diet; Breast feeding

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INTRODUCTION

The two most common infectious causes of morbidity and mortality in children under five are diarrhoea and pneumonia. There were about 1.731 billion diarrhoeal episodes; out of which 36 million were severe one in 2010. The diarrhoeal diseases are the second most common infectious cause of mortality after pneumonia in under five children. There were about 70000 episodes of diarrhoea in 2011 that led to mortality¹.

Diarrhoea is defined as the passage of three or more loose or liquid stools per day or more frequent passage than is normal for the individual³. The etiology of diarrhoea include viral [rotavirus, norovirus, astrovirus, adenovirus], bacterial [shigella, enterotoxigenic escherichia coli, campylobacter, aeromonas, vibrio cholera] and protozoal [cryptosporidium, giardia]⁴.

51% of these deaths occurred among five countries that included Pakistan as well².

The infection spreads through contaminated food or drinking-water, or from person-to-person as a result of poor hygiene. The key measures to prevent diarrhoea include access to safe drinking-water, use of improved sanitation, hand washing, exclusive breastfeeding for the first six months of life, good personal and food hygiene, health education about how infections spread and rotavirus vaccination⁵.

The studies done nationally⁶⁻⁹ and internationally¹⁰⁻¹² showed variable knowledge of caregivers about the appropriate management and prevention of diarrhoea. Since there is very little data available in this part of Pakistan, so it this study was planned to conduct.

The objective of the study is to know the maternal knowledge, attitudes and practices about diarrhoea in children. The study will help us in the future planning about management of diarrhoea at community level.

MATERIALS AND METHODS

This cross-sectional study was carried out in the children outdoor of Tehsil Hospital Yazman (District Bahawalpur) from September 20, 2016 to October 19, 2016. The mothers carrying their children having diarrhoea were included. The children not carried by their mothers or sick enough to be admitted in the

Children Outdoor Department, Tehsil Hospital Yazman, District Bahawalpur.

Correspondence: Dr. Ayesha Nadeem, Women Medical Officer, Children Outdoor Department, Tehsil Hospital Yazman, District Bahawalpur.
Contact No: 0334-8697155
Email: ayeshanadeem23@gmail.com

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hospital or needed to be referred were excluded from the study. After giving elucidation of the purpose of the study to the mothers, verbal consent was taken from them to be enrolled for the study. The researchers interviewed the mothers (who agreed to take part in the study) by using a structured performa. The interviews were in English, Urdu or in local languages according to the mother's understanding of the language. The data were collected and analyzed with the help of SPSS version 15. The data were presented as percentages or proportions.

RESULTS

There were one hundred mothers included in the study. Only 4% mothers were having at least Higher Secondary Certificate while 14% were uneducated (Table-I).

The table-II showed the response of mothers to various questions asked from them. The response of the mothers to the question on definition of diarrhoea was 'increase in frequency' in 41% cases while 'decrease in consistency' in 35% cases. The main causes of diarrhoea as narrated by mothers were unhygienic water or food or both (35% cases), eruption of teeth (25% cases), eating earth (19% cases) and devil eye (15% cases). There were 71% mothers who answered 'yes' to the question 'Does the fluid intake be increased during diarrhoea?'. There were 61% mothers who were in the opinion of stopping or modifying the diet during diarrhoea. The response of mothers to questions 'Does hand washing help in the prevention of diarrhoea?', 'Does clean water/food help in the prevention of diarrhoea?', 'Does proper disposal of excreta help in the prevention of diarrhoea?' and 'Does breast feeding help in the prevention of diarrhoea?' was in 'yes' in 48%, 77%, 38% and 56% cases respectively. There

Table No.1: Education level of mothers
Total mothers 100

Education level	No. of mothers	%age
Having at least Higher Secondary Certificate	4	4%
- higher Secondary Certificate	3	3%
- having graduation	1	1%
- having post graduation	0	0%
Does not have Higher Secondary Certificate	96	96%
-having secondary school certificate	10	10%
-Middle pass	24	24%
-Primary Pass	31	27%
-Primary fail	17	17%
-Uneducated	14	14%

There were 65% mothers who answered 'yes' to the question 'Is oral rehydration salt useful during diarrhoea?'. There were 61% mothers who were in the opinion of stopping or modifying the diet during diarrhoea. The response of mothers to questions 'Does hand washing help in the prevention of diarrhoea?', 'Does clean water/food help in the prevention of diarrhoea?', 'Does proper disposal of excreta help in the prevention of diarrhoea?' and 'Does breast feeding help in the prevention of diarrhoea?' was in 'yes' in 48%, 77%, 38% and 56% cases respectively. There

were only 11% mothers who knew that vaccination helped in the prevention of diarrhoea.

Table No.2: Education level of mothers

Question	Number	%age
What is diarrhoea		
Increase in frequency	41	41%
Decrease in consistency	35	35%
Both	19	19%
Do not know	5	5%
What is the cause of diarrhoea		
Unhygienic water/food or both	35	35%
Eating earth	19	19%
Eruption of teeth	25	25%
Devil eye	15	15%
Do not know	6	6%
Does the fluid intake be increased during diarrhoea		
Yes	71	71%
No	20	20%
Do not know	9	9%
Is oral rehydration salt useful during diarrhoea		
Yes	65	65%
No	23	23%
Do not know	12	12%
Will you stop or modify diet during diarrhea		
Yes	61	61%
No	18	18%
Do not know	21	21%
Does hand washing help in the prevention of diarrhoea		
Yes	48	48%
No	31	31%
Do not know	21	21%
Does clean water/food help in the prevention of diarrhoea		
Yes	77	77%
No	17	17%
Do not know	6	6%
Does proper disposal of excreta help in the prevention of diarrhoea		
Yes	38	38%
No	31	31%
Do not know	31	31%
Does vaccination help in the prevention of diarrhoea		
Yes	11	11%
No	43	43%
Do not know	46	46%
Does breast feeding help in the prevention of diarrhoea		
Yes	56	56%
No	23	23%
Do not know	21	21%

DISCUSSION

There were only 4% mothers having at least Higher Secondary Certificate while 14% were uneducated. The study done in Karachi⁹ and Rahim Yar Khan¹³ showed 63.5% and 49.10% mothers were uneducated.

The response of the mothers to the question on definition of diarrhoea was 'increase in frequency' in 41% cases while 'decrease in consistency in 35% cases', the response in the study conducted at Karachi⁹ was 72% and 13.5 % respectively. The mothers in the study conducted at Rahim Yar Khan¹³ described diarrhoea as loose watery stool in 46.43% cases and increased frequency in 3.57% cases. The study done in India⁹ 68% of mothers knew the correct definition of diarrhoea.

The main causes of diarrhoea as narrated by mothers were unhygienic water or food or both (35% cases), eruption of teeth (25% cases), eating earth (19% cases) and devil eye (15% cases), the response in the study conducted at Karachi (9) was 17%, 10%, 14% and 47% respectively and the response in the study conducted at Rahim Yar Khan¹³ was 24.11%, 8.92%, 9.82% and 8.92% respectively.

There were 65% mothers who answered 'yes' to the question 'Is oral rehydration salt useful during diarrhoea?' There were 61% mothers who were in the opinion of stopping or modifying the diet during diarrhoea. The response of mothers to questions 'Does hand washing help in the prevention of diarrhoea?', 'Does clean water/food help in the prevention of diarrhoea?', 'Does proper disposal of excreta help in the prevention of diarrhoea?' and 'Does breast feeding help in the prevention of diarrhoea?' was in 'yes' in 48%, 77%, 38% and 56% cases respectively. The study conducted at Karachi⁸ showed that 62% mothers were aware of preventive measures like hand washing, keeping the child and environment clean. The study conducted at Rahim Yar Khan¹³ showed 92% mothers were aware of one or more than one preventive measures.

CONCLUSION

There is need of improvement in the knowledge of mothers about diarrhoea in children.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Preference of Pregnant Women Regarding Place of Delivery in Bahawalpur

Asma Wazir¹, Hafiza Sana Shahzadi¹ and Aqib Javed²

Preference of
Place of
Delivery of
Pregnant

ABSTRACT

Objective: The objective of study was to determine the women's preference for place of delivery among pregnant women of Bahawalpur City.

Study design: Descriptive / cross sectional study.

Place and Duration of Study: This study was conducted at the Outpatient Department of Gynecology Unit, Bahawal Victoria Hospital, Bahawalpur from March 2016 to July 2016.

Materials and Methods: Our study included 100 participants representing the characteristics of a sample. Informed consent was taken from all participants. The expenses of the study were paid by researchers. SPSS version 21 was used. Frequencies tables were made and Percentages were calculated. Cross tabulation was done.

Results: Out of 100 women of reproductive age group, 84 women preferred health care outlet for the place of delivery and 16 women referred home as a place of delivery. Each woman considers a number of reasons for her preference of place of delivery. Among 84 women, 97% preferred HCO for sake of safe and secure delivery, 88% due to easy access to health care facility, 87% for good antenatal care, 84% due to fear of unskilled attendants at home. Among 16 women, 100% referred home due to fear of interventions at hospital, 94% due to family support and feeling comfortable at home, 81% due to privacy and availability of trained birth attendants at home.

Conclusion: Majority of women preferred H.C.O to deliver baby while only few preferred home for delivery of child. It was concluded that mostly women preferred H.C.O for safe and secure delivery and good quality of care. Those who preferred home wanted privacy, family support and family environment.

Key Words: Pregnant Women, Place of Delivery, Bahawalpur.

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INTRODUCTION

Pregnancy is the period from conception to birth. After the egg is fertilized by a sperm and then implanted in the lining of the uterus, it develops into the placenta and embryo, and later into a fetus. Pregnancy usually lasts 40 weeks, beginning from the first day of the woman's last menstrual period, and is divided into three trimesters, each lasting three months. Delivery; The act or process of giving birth. Assurance of healthcare for all segments of the population with special attention given to the health needs of women and children was one of the top priorities in the Ethiopian Health Policy.¹ The endorsement of MDG in the HSDPs is an indicator of the willpower and commitment of the government to reducing maternal mortality across the country.

¹. Department of Obstet & Gynae, Civil Hospital, Bahawalpur.

². Department of Medicine, Basic Health Unit Adam Wahin, Lodhran.

Correspondence: Dr. Aaqib Javed, Medical Officer, Department of Medicine, Basic Health Unit Adam Wahin, Lodhran.

Contact No: 0334-5118151

Email: draqibm@gmail.com

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Wet. Ethiopia's health system is underdeveloped and underfinanced. While some progress has been made in providing basic health services to poor women and their children, the progress may be uneven because many people are not reached with services.²

Ethiopia's total health expenditure as a percentage of the gross domestic product (GDP) has remained stable at 4.3% for years. With emphasis given to publicly funded healthcare, out-of-pocket payment constitutes 42%.³ The public health sector is the main provider of primary healthcare and serves two-thirds of the population who cannot afford private healthcare. The main objective of the public sector service provision, as stated in the National Health Policy, is "to give comprehensive and integrated primary health care services in a decentralized and equitable fashion".⁴

Childbirth and its process are one of the most significant life events to a woman. The time of birth as well as shortly thereafter is the most dangerous period in a child's life especially the developing world. Hence the choice of place of delivery for pregnant woman is an important aspect of important factor often related to the quality of care received by the mother and infant for influencing maternal and child healthcare outcomes. In Addis Ababa the capital of Ethiopia, though the private health facilities (hospitals and clinics) outnumber public clinics, only 20 of deliveries take place in the private sectors and 17% of mothers deliver at home. This study aims to systematically explore the differences and the

factors that influence women's preferences for places to give birth in Addis Ababa. It is envisaged that a clear understanding of such factors is key in building a responsive maternal healthcare system and improving health outcomes in Ethiopia.⁵

Maternal Mortality ways remains a challenging issue in underdeveloped countries. Most Maternal Mortality is due to delivery at home because of poverty. This huge Maternal Mortality is because of obstetrical complications like Bleeding, eclampsia, Sepsis, Obstructed labor and abortion all these can't be predicted before delivery.⁶

Skilled attendance at the time of delivery, timely management of obstetric emergency and effective postnatal care are foremost in promoting maternal health, Skilled care during childbirth is a most important single factor in preventing maternal deaths and the "proportion of births attended by skilled health personnel" is a target indicator to measure improving towards maternal health.⁷

Pakistan is among six countries where estimated maternal mortality ratio of 533 in 1993. Now by initiatives recently this burden fall down to 260. Over the past decades Pakistan introduce policies for the improving of maternal health, introduced community-based midwives to make sure available of skilled care and accessible in low-resource settings to address the issue of skilled birth attendance. Community midwives trained to make delivery at homes, providing care to pregnant women during all their maternity period and the care of new born, counseling, guidance and communicating with community and involving family for safe delivery and dealing with possible emergencies.⁸

According to Health Survey 2013, only 48% of births occur at health center and 52% are attended by skilled workers. Many women fail to attain the community-based services because of unidentified reasons and delivered baby without skilled workers. A large number of factors like physical and financial factors identified from studies.⁹

This study focus on understanding factors that use of available maternal health care services in local context particularly in rural areas and focus on their believes and knowledge about pregnancy and delivery in a pregnant women in rural Pakistan.

MATERIALS AND METHODS

Descriptive cross sectional study conducted at outpatient department of gynecology unit of Bahawal Victoria hospital, Bahawalpur from March-2016 to July-2016. Our study included 100 participants representing the characteristics of a sample. Informed consent was taken from all participants. The expenses of the study were paid by researchers.

Sampling technique was non probability convenience method. All the women in third trimester of pregnancy

were interviewed while high risk pregnancies, women not willing to be included in the study were excluded. Preformed and pretested questionnaire was used for data collection.

Data analysis: SPSS version 21 was used. Frequencies tables were made and Percentages were calculated. Cross tabulation was done.

RESULTS

In our study we took a sample of 100 women of reproductive age group. in the overall age distribution the respondents were divided into 6 groups. 14% (14 respondents) belong to age group of 16-20 years 40% (40 respondents) were in age group of 21-25 years 31% (31 respondents) fall in the category of 26-30 years While 9% (9 respondents) belonged to agegroup of 31-35 years. 5% (5 respondents) were in age group of 36-40 years and 1 lady was above 40years (in age group of 41-45 years).

In case of education, respondents were divided into 6 main groups. 28% (28 respondents) were with no formal education, 29% (29 respondents) studied up to primary level 11% (11 respondents) studied up to middle, 10% (10 respondents) have done matriculation, 6% (6 respondents) were up to intermediate level, Only 16% (16 respondents) were graduate and above that level in case of residence of respondents, 74% (74 women) were from urban areas and 26% (26 women) were from rural side.

in case of occupation of the respondents, 89% (89 women) among total respondents were housewives and 11% (11 women) were working ladies and they belong to different fields. Grouping on the monthly family income of respondents to determine their economic status, 67% (67 women) belong to category of <20,000 and 22% (22 respondents) belong to category of 20,000 to 40 000 and 11% were above the 40,000 for their monthly income.

There were three family types in the questionnaire and 45% (45 respondents) belong to nuclear family, 55% (55 women) to extended family and no one was in this category of polygamous type.

We determined the number of living children in the questionnaire by making 4 groups, 21% of them were with no living child at that time. 51% belong to category 1-2 number of living children and 21% were having 3-4 children alive, 7% women were with 5-7 no. living children category, we calculated findings with concern to gravidity, there were 4 groups. 44% (44 women) were in the Category of 1-2. 30% within the 3-4 categories. 17% were in 5-6 category and 9% in category of 7-8.

Taking into account our major concern about place of delivery 84% (84 respondents) preferred health care outlet for their delivery and 16% (16 respondents) liked home delivery. In our study we found that most of our respondents were within age group of 21-25 years i.e.

40%. If further analyzing it then out of this 40% (40 women) 34 preferred health care outlet and 6 of those 40 women preferred to go for home delivery.

The second highest frequency 31% (31 respondents) with age group of 26-30 year was observed. 28 of them were in favor of health care outlet and 3 were in favor of home. As respondents were mostly from urban areas so they preferred health care center more. Out of 74% (74 respondents) 68 women preferred health care outlet and only 6 women of them preferred home. In our study 29% (29 women) studied up to primary level and at this educational level 26 liked health care outlet and 3 preferred home. 28% of respondents (28 women) were having no formal education and 10 of them preferred home but 18 women preferred health care outlet. And as the educational level increases, the preference for health care outlet increases. Those who were graduate and above this level were 16% (16 women) and all of this preferred health care outlet.

Regarding occupation, we found that who were working ladies mostly preferred health care outlet Out of 11% (11 women) working women 10 preferred health care outlet.

Belongs to 1-2 groups and 44 (44/51) preferred health care outlet and 7(7/51) preferred home, Women who experienced first pregnancy mostly preferred health care outlet. Our least frequency 7% of (group 5-7 number of living children), 5 preferred health care outlet and 2 preferred home. In our study we found that high frequency of women 44% were in category of 1-2 of gravidity. 40 (40/44) preferred health care center and 4 preferred home. As gravidity increases the more favor in the health care outlet. Out of 9 with 7-8 gravidity status 6 preferred health care outlet and only 3 preferred home. Following reasons for preferring the H.C.O. most frequent reason that come on the top is due to safe and secure delivery, 82 was its frequency. Second most important and frequent reason was good antenatal care provided at health care facility and they were satisfied with that.

The reason that ranked third is fear of unskilled birth attendants at home so they preferred H.C.O. The least common reason was risk factor i.e. hypertension anemia, unconsciousness which directed their decision to H.C.O. In case of home delivery most frequently encountered reason was fear of interventions at hospitals and fear of surgery i.e they may go for C-section.^{2nd} most common reason behind home delivery was privacy at home and comfortable environment at home as well as the family support." most common reason was availability of trained birth attendants at home. Then came the financial issue to be the reason for home preference. Least frequent was with 1 frequency, Bad attitude of health professionals.

So it is concluded that mostly women preferred H.C.O for safe and secure delivery and good quality of care.

Those who referred home wanted privacy, family support and family environment.

DISCUSSION

Our study depicted that majority of women preferred H.C.O. our results were very much consistent with the study conducted in Basra. According to this 83.9% of women delivered at H.C.O and 16.1% at home.² Same is the case in our study, 16% preferred home. Study from Ethiopia also showed that 88% preferred delivery at health care facility.³ while discussing the reasons for health care outlet delivery safety and security comes first with 98.6%. In our study it is 82%. While in reasons fear of unskilled birth attendant at home was also 71% in our study as compared to study in Oromia regional state where fear of unskilled birth attendant was 12%. It can be due to awareness of health facility and knowledge and concern of people about health. It can be due to low training staff available at home in our region that women have feared.⁷

73% of women of our study were having good antenatal care at H.C.O. So they preferred to deliver at H.C.O. same were the results with study done in rural community in Jos North where 74% of their study participants were attending ANC as women find themselves satisfied with the care provided at H.C.O they preferred to plan delivery at H.C.O for safe and secure delivery.⁶ Education is the key determinant in health care. Our study was also showed that as the educational status increases the preference for H.C.O. increases. Illiteracy has inverse relation with choice of H.C.O. in our study all women above graduation level preferred H.C.O. those with no formal education preferred home. Similar is case with respect to socioeconomic status and monthly family income. All of women in our study who fall in > 40000 Rs category of family income, all preferred H.C.O. same facts were seen in while looking at the study done in north India, where high educational status and good jobs of their spouse were associated with H.C.O. During data collection one of the respondents said, "I have no plan about where to deliver. it may depend upon my husband whether he can afford the expenses at H.C.O or no."

Other factors like family type and total no. of family do affect the choice of place of delivery. Women with 1-2 children mostly preferred H.C.O. 52% of women who preferred H.C.O were with 1-2 living children. Results support that of study from Entebbe, Uganda which showed that primigravidae were mostly to deliver at H.C.O. those who were having good facility to reach H.C.O preferred to go there for delivery. 70 times was the reason of good transportation among those who preferred H.C.O. 5 of the women who preferred home were telling about bad roads and poor transportation facilities.¹⁰

Among the reasons for home preference, fear of interventions at H.C.O and good family support stood at the top. Asma aged 25, the respondent of our study said during interview "No, No, doctors will go for surgery and I am afraid of that. I will prefer home and my family can take care of me at home". So these are the reasons given by women. They are afraid of interventions at hospitals. They have a mindset that home is place where family is near and support is also available. If we compare with study of Hashemene town, about 30% was the reason that women feel comfortable at home and seek care from family.¹¹

Similarly in our case, among 16 women who preferred home almost 13 women give reason of privacy and family support. Remaining consistent with the study of Pokhara city Nepal, main reasons of home delivery were convenience and ease at home (21%) financial problems and cost of care at H.C.O (11.3%). In our study some difference from that study occurred. We have financial reason at lowest may be the good financial conditions of the respondents and no are low in this respect Comfortable environment is mainly the most uttered reason among women who preferred home delivery.¹²

In Bangladesh according to one study conducted in rural area, results show that delivery by TBAs was first preference for pregnant women. Poverty was also important among this category. In our case in BWP city among those who preferred H.C.O were mostly afraid of unskilled TBAs. This shows that there is lack in providing primary health care and poverty is not main factor for those who preferred home they just wanted family support.¹³

So our discussion comes to end with result that great % is in favor of H.C.O. Results show that people are satisfied with the care provided to them. Among those few who preferred home reason was privacy and family support.

CONCLUSION

Majority of Women preferred H.C.O to deliver baby while only few preferred home for delivery of child, it was concluded that mostly women preferred H.C.O for safe and secure delivery and good quality of care. Those who preferred some wanted privacy, family support and family environment.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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An Outcome of Acute Flaccid Paralysis Surveillance in Khyber Pakhtunkhwa During 2015

Sher Bahadur¹, Gohar Rehman¹, Rizwan Anwar¹, Attaullah Jan¹, Shams ur Rehman¹, Shehnaz Bakhtiar² and Shaista Rasool¹

ABSTRACT

Objective: The present study aims to determine the final outcome (diagnosis) of AFP cases reported in Khyber Pakhtunkhwa (KP).

Study Design: Descriptive study

Place and Duration of Study: This study was conducted at Health Department with Joint Collaboration World Health Organization from January 2015 to January 2016.

Materials and Methods: This study was based on evaluation of secondary data related to APF surveillance data. Formal permission was taken from Provincial Polio Surveillance Unit, health department KP, data was received in MS Excel sheet which was transformed into SPSS version 20 for analysis.

Results: A total of 1217 cases with mean age of 42 ± 34.2 (ranged 1 to 172 months) out of whom 724 (59.5%) were being male and 493 (40.5%) were being female. The children with age range of 13-24 months (2 years) were high in proportion. Most of the children presented with history of fever 802 (65.9%) and asymmetrical weakness 809 (66.5%). Traumatic Injection Neuritis (TIN) was the leading cause of AFP accounted for 266(21.9%), followed by GBS 214(17.6%), Unspecified fall 190(15.6%), Arthritis 54(4.4%) and Meningitis 33(2.7%) respectively. There was no single case of true poliomyelitis although 27(2.2%) cases were suspected during initial health assessment. Apart from these etiologies, there were 55 other clinical conditions associated with AFP.

Conclusion: Traumatic injection neuritis and GuillainBarre Syndrome misleading the causes of AFP in the region among children. Unspecified Injuries/trauma and fall plays a significant role in disability among children and account for overuse of hospital services.

Keywords: Traumatic injection neuritis, GuillainBarre syndrome, Arthritis, poliomyelitis and Meningitis

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INTRODUCTION

Poliomyelitis is an acute viral infection which ranges in severity from a nonspecific illness to paralysis with permanent disability. It is one of the diseases which is incurable but can be prevented. Polio virus when invades the nervous system through blood stream, causes Acute Flaccid Paralysis (AFP) rendering the person crippled for life.¹

The global effort to eradicate polio has become the largest public health initiative in history and is spearheaded by the World Health Organization (WHO).^{2,3} Polio cases (limited number) are now pertinent to few countries that can be eradicated. Targeting and eradication of polio case is easy because polio only

affects humans, and an effective, inexpensive vaccine is available which provides lifelong immunity⁴ There are no long-term carriers of the disease, no animal or insect reservoir and the virus can only survive for a short time in the environment.⁵

Pakistan has been the major contributor to confirm polio cases in 2013 as compared to Nigeria and Afghanistan the only three remaining endemic countries⁶⁻⁸. The polio eradication campaigns in Pakistan has been suffering from continuous setbacks as 27 polio workers have been assassinated since December 2012 during anti-polio immunization campaigns^{9,10}. According to the 2013 World Health Organization report, 74 polio cases have been reported in Pakistan. However, 51 (69%) of the polio confirmed cases are from Federally Administered Tribal Areas (FATA), identifying it as the single major poliovirus reservoir in Pakistan^{6,8}. The Government of Pakistan has highlighted multiple reasons for the growing polio endemic in Pakistan citing primarily militancy and 'refusal families'. Militancy, especially in the Federally Administered Tribal Authority (FATA) and North Waziristan areas of Pakistan, may have compounded the polio campaign further by putting many children at risk.

¹. Department of Health Policy and Management / Pathology², Khyber Institute of Child Health Peshawar.

Correspondence: Sher Bahadur, Epidemiologist, Department of Health Policy and Management, Khyber Institute of Child Health Peshawar.

Contact No: 03453018449

Email: sher.umar@yahoo.com

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World Health Organization has been involved in many activities for Polio eradication which include capacity building, supporting public health emergencies and strengthening the integrated polio surveillance.

Screening of polio cases requires extensive follow up of 60 days after the onset of sign and symptom, which account for significant among of resources (human and financial) unity ²screening involves activities like differentiating cases of AFP caused by Polio virus from those that are caused by other factors such as GuillainBarre syndrome, Transverse myelitis, Non-polio enteromyelitis, Traumatic/injection neuritis, Childhood hemiplegia, CVA, Encephalitis, Meningitis etc puts a toll on the already overburdened health infrastructure/resources respectively.¹¹⁻¹⁴ the purpose of such screening was to exclude the miss leading (non-polio viral) cause Acute Flaccid Paralysis. hence a major chunk of resources of polio eradication are spend on scrutinization of these diseases.

In our view, the ambition of the global health community to eradicate polio appears to be blinding it to the lessons learnt about health systems over the past 30 years. Polio eradication will only be achieved with stronger health systems and bottom-up community engagement, which is likely to require more time and more investment than is currently available in Pakistan, Nigeria, and Afghanistan because of their political fragility.

The solution is to strengthen the routine health system, including door-to-door general vaccination coverage rather than highlighting polio as “the only” health problem an important solution that has been acknowledged in the Polio Eradication and Endgame Strategic Plan 2013–18^{15 16}. However, the time lag needed to put this solution into practice may be problematic. Although new opportunities often arise to integrate polio eradication activities into other immunization campaigns, policy implementers frequently fail to take advantage of such opportunities. For example, during the recent measles outbreaks in Pakistan¹⁷, polio vaccine could have been administered to millions of children in the affected districts but, as a routine practice, immunization campaigns were limited to vaccination against measles.

The strong health system may be able to minimize other causes of AFP. However weak health management is found as the hub of majority of the challenges¹⁸.

MATERIALS AND METHODS

A retrospective descriptive approach was conducted which was based on the secondary AFP surveillance data of Khyber Pakhtunkhwa for the period of year, (Jan-2015 to Jan-2016) at the health department with joint collaboration World Health Organization, where all clinical and laboratory data for all reported cases of AFP is available. There are 1218 case of AFP reported from different areas of Khyber Pakhtunkhwa through

active and passive (zero reporting) surveillance methods during 2015. All cases reported in the above mentioned period, regardless of sex, ethnicity and area of belonging were included in the study. After formal permission from Provincial Polio Surveillance Unit (under Provincial Extended Program) and chairman Expert Review Committee (ERC) was obtained. The data was then filtered according to the objective of the study. The data was analyzed using SPSS 20 and results were subjected for appropriate statistical analysis.

RESULTS

A total of 1217 cases were reported to the health department from 01-Jan-2015 to 30-Jan-2016. Out of those 493 (40.5%) were female and 724 (59.5%) were male with mean age of 42 ± 34.2 (ranged 1 to 172 moths). Result indicate that 369 (30.3%) of the effected children were of 2 years (ranged 1-12 months) of age and 3 years (ranged 25-36 months) of age as shown in figure 1.

Regarding the involvement of the body in AFP, 809 (66.5%) were asymmetrical (single side involvement) while 390 (32.0%) had weakness in both side of the body and 18 (1.5%) were unable to correlated the weakness. Fever was reported by 802 (65.9%) of the children (table 2).

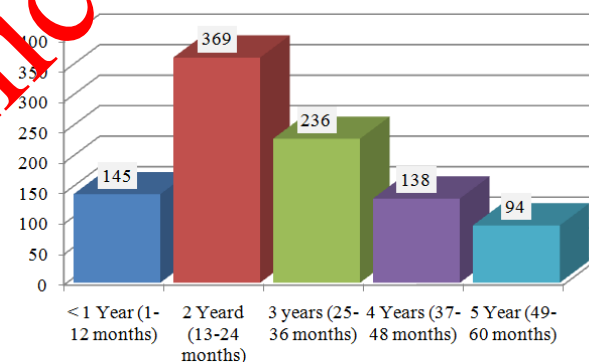


Figure No.1: Age categories of children presented with AFP in KP

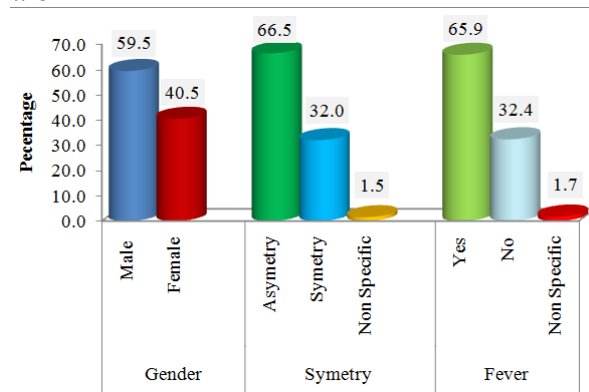


Figure No.2: Gender and basic of sign and symptoms of AFP cases in KP

Injection neuritis remained the leading cause of AFP among the children followed by GuillainBarre Syndrome (GBS) respectively. Unclassified/unnoticed trauma was the third leading cause followed by Arthritis and Meningitis as shown in table 1. Where the least frequent diagnosis which included (arranged in descending order based on frequency) Electrolytes

Imbalance, Rickets, Diphtheria Neuropathy, Malnutrition, Pneumonia, Metabolic Disorder, Gastrointitis, Cerebral Palsy, Muscular Dystrophy, Monoperisis, Degenerative Disease, Epilepsy Seizure, Tubercullus Meningitis, Rheumatic Fevel, Post Chicken pox weakness, Opium Poisoning, Multiple Salvosis and Hydrocephalus.

Table No.1.Comparison of provisional andfinal diagnosis of AFP cases in Khyber Pakhtunkhwa

Provisional Diagnosis based on DRC			Final Diagnosis based ERC		
Diagnosis	F	%	Diagnoses	F	%
Injection Neuritis	298	24.5	T80: Traumatic/Injection neuritis	266	21.9
GBS	266	21.9	G61.0: GBS	214	17.6
Unnoticed Trauma	139	11.4	Unclassified	212	17.4
CVA	77	6.3	W19: Unspecified fall	190	15.6
Arthritis	73	6.0	M13: Arthritis	54	4.4
Trauma	62	5.1	G03: Meningitis	33	2.7
AFP	43	3.5	G81: Hemiplegia, hemiparesis	29	2.4
Meningitis	37	3.0	E87.6: Hypokalemic hypotonia	26	2.1
Suspected Poliomyelitis	27	2.2	G04: encephalomyelitis	23	1.9
Acute Ataxia	26	2.1	B34.1: Non-polio enterovirus	16	1.3
Synovitis	25	2.1	R27.0: Ataxia, Cerebellar	16	1.3
Encephalitis	20	1.6	Other	15	1.2
Hypocalcemia	19	1.6	G93: CVA	15	1.2
Febrile Fits	15	1.2	A17+:Tuberculosis	09	0.7
Myopathy/Myositis	12	1.0	R56: Febrile Seizure, Fit	08	0.7
Pseudo Paralysis	10	0.8	M65: Synovitis and tenosynovitis	06	0.5
Non Polio Neuropathy	10	0.8	E87: fluid electrolyte imbalance	05	0.4
Elecrolytes Imbalance	07	0.6	E88: Metabolic disorders	05	0.4
Rickets	06	0.5	G7: Disorders of muscle	05	0.4
Diphtheric Neuropathy	06	0.5	G83: Monoplegia,	05	0.4

DISCUSSION

Acute flaccid paralysis (AFP) is a clinical condition associated with complex characteristics including weakness in legs, muscles and swallowing, progressing to maximum severity within several days where the term "flaccid" means the absence of spasticity (hyperreflexia of) extensor of in motor tract of central nervous system (CNS).^{5,19} The cause of AFP is associated with variety of provoking factors like infections, injection neuritis, GBS and arthritis etc.²⁰

In Pakistan suspected AFP cases are reported to the surveillance system of the poliomyelitis eradication initiative. The data indicates that 1218 cases of AFP were evaluated for final diagnosis in 2015.

Based on the ERC data, out of total AFP cases traumatic injection neuritis accounted for 266(21.9%), followed by GBS214 (17.6%) respectively.

The prevalence of injection neuritis is 7.1 per 1000000 in children under 3 years old.²¹ While in present study the 21.9% of children with AFP were diagnosed with injection neuritis. This indicates that incidence of injection neuritis is high in PKP. However literature supports this study regarding incidence of GBS.

According to study in District Bannu which indicates that the leading etiology of AFP was GBS contributed to 15% of AFP cases.²²

The incidence of injection neuritis is common because the treatment of choice for treatment of all types of fevers is the use of injections. Therefore it is recommended that if cases of poliomyelitis are not to be missed, the diagnosis of injection trauma or traumatic neuritis (TN) must be exact.¹⁴ Unspecified fall accounted for 190(15.6%) of the reported cases which indicate that trauma is the leading cause of weakness of lower motor neuron which is one of characteristic feature of AFP. According to ICD report 10% of hospital admissions among children take place due to unspecified fall.²³ This indicates proportion of this condition is high in Khyber Pakhtunkhwa. Other leading causes include; M13 (Arthritis) G03 (Meningitis), G81 (Hemiplegia, hemiparesis), E87.6 (Hypokalemic hypotonia) and G04 (encephalomyelitis) etc. Literatures conclude that there are multiple causes of AFP varying from region to region ranging from infection both bacterial and viral to injuries (traumas) and auto immune diseases. The potential possible causes reported by literatures are; infections both viral

and bacterial like Poliomyelitis, Non polio enterovirus, Neurotropic Viruses (Encephalitis virus etc.). Guillain-Barré syndrome (GBS), Acute TIN, Acute Transverse Myelitis (TM), Neuropathies (Exo-toxin of *Corynebacterium Diphtheria*, toxin of *Clostridium Botulinum*, tick bite paralysis etc.), Diseases of the Neuromuscular junction (myasthenia gravis etc.)^{20,22} Disorders of muscle like polymyositis, viral myositis and metabolic disorders (hypokalemic periodic paralysis) etc. The result of the present study reveals the same as shown in table 1.

CONCLUSION

Among the non viral cause of AFP, traumatic injection neuritis and Guillain-Barre Syndrome remained on the top of the list. Unspecified trauma and falls also has significant contributions to AFP and disability among children. Quackery practices in Pakistan need to be banned. Need a proper awareness among medical professionals and parents about the risk of intramuscular injections among children. Further study is required to investigate causes of false positive cases.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Assessment of Prevalence and Haematological Parameters of Colorectal Cancer Patients at a Tertiary Care Hospital, Al Ahsa, Kingdom of Saudi Arabia

Ashok Kumar¹ and Abdul Latif Al Arifi²

ABSTRACT

Objective: To assess the prevalence and haematological parameters of colorectal cancer (CRC) patients at King Fahd Hospital (KFH) Al Ahsa, Kingdom of Saudi Arabia (KSA).

Study Design: Observational / analytic study.

Place and Duration of Study: This study was conducted at King Fahd Hospital (KFH), Al Ahsa, Kingdom of Saudi Arabia (KSA) from January 2015 to December 2015.

Materials and Methods: The study was conducted among cancer patients, visited KFH, Al Ahsa. Total 200 cancer patients, consisting of 110 males and 90 females of age 46-80 years, were included. The medical records of the patients, suffering from various cancers, i.e., colorectal, breast, lung, blood and thyroid, etc., were retrieved from KFH, and the patients who were diagnosed to have CRC were assessed for the prevalence & the haematological parameters. The data were analysed using SPSS 16.

Results: Prevalence of CRC: Among total 200 cancer patients, 49 (24.5%) males of age 46 – 80 (median 63) years, and 13 (6.5%) females of age 48 – 72 (median 60) years were found to have CRC. Hematological parameters of CRC patients: In both genders, majority (~80%) of the patients had Hb level ~10g/dl. The type of anaemia was iron deficiency anaemia. The ESR was found to be raised (~45mm/hour) in both genders. The WBC and platelet counts were in normal range.

Conclusion: We found significant prevalence (31%) of CRC among various cancer patients. Two haematological parameters, i.e., Hb and ESR were significantly disturbed in these CRC patients. The Hb and ESR parameters are inexpensive investigations, which are very important indicative of CRC disease and its prognosis.

Key Words: Colorectal cancer, prevalence, haematological parameters, anaemia

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INTRODUCTION

Colorectal cancer (CRC) is the most common cancer among adult males and the second most common cancer among adult females in Saudi Arabia as per the report of 2012¹, and the second & the third most common cancer among females & males, respectively, worldwide². The survival after the diagnosis is estimated to be around five years. In comparison to the other countries worldwide, Kingdom of Saudi Arabia (KSA) is considered to have a low incidence of CRC, but within the kingdom itself, this disease ranks the second number after the breast cancer³.

The differences in the prevalence of CRC worldwide are explained by different dietary and the environmental factors⁴, which are supported by the evidence of the studies of migrants, moving from low risk to high risk areas^{5,6}. The increased risk of CRC was reported in the people, who consumed the diet, poor in fiber, such as meat⁷ and fat⁸. It has also been shown that increased body-weight and lack of physical activity are the major risk factors for the development of CRC⁹⁻¹². The other non-dietary causes of CRC include genetic predisposition¹³, Crohn's disease and ulcerative colitis¹⁴. In previous reports, an association between the anaemia and CRC was shown where the CRC patients presented with the anaemic features as their presenting complaint and later diagnosed to have CRC¹⁵. Another study showed that the main presenting feature of these patients was microcytic hypochromic (Iron deficiency) anaemia, which was also found to be the major prognostic predictor of these patients¹⁶⁻²⁰. Several studies have been conducted on the hemoglobin level of CRC patients before the start of the treatment²¹, however no updated data have been published in our region Al Ahsa on the prevalence of CRC and the changes in their haematological parameters, including

¹. Department of Pathology, College of Medicine, King Faisal University, Al Ahsa, Kingdom of Saudi Arabia

². College of Medicine, King Faisal University, Al Ahsa, Kingdom of Saudi Arabia

Correspondence: Dr. Ashok Kumar, Assistant Professor, Department of Pathology, College of Medicine, King Faisal University, Al Ahsa, Kingdom of Saudi Arabia.
Contact No: 00923363813283
Email: dr.ashok.kumar@hotmail.com

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Hb & ESR levels, and WBC & platelet counts during the time of the diagnosis and before the start of the treatment. The information on the haematological parameters in these patients is very important to improve the physical health by adding the adjuvant treatment. In our current study, we analysed the prevalence of CRC patients and assessed their haematological parameters, which will provide with the important information to prevent the development of CRC and to add the adjuvant therapy to CRC patients to improve their health and increase their life expectancy.

MATERIALS AND METHODS

Total 200 patients (both males and females), suffering from various cancers, i.e., colorectal, breast, lung, blood, thyroid, and bone, etc., were included in the study. The age of the patients ranged from 46- 80 years. Medical records of these patients were retrieved from KFH, Al Ahsa. The patients, who were diagnosed through histopathological reports to have CRC, were analysed for their prevalence. Furthermore, their haematological parameters were assessed for any changes. The study was conducted retrospectively from January 2105 to December 2015. The data were analysed by using SPSS 16.

RESULTS

Prevalence of CRC: Among total 200 cancer patients, 62 (31%) had CRC, amongst which 49 (24.5%) were males of age 46 – 80 (median 63) years, and 13 (6.5%) were females of age 48 – 72 (median age 60 years). Figure 1 and figure 2 describe the prevalence of CRC patients in number and percentage, respectively.



Figure No.1: Prevalence (in number) of CRC patients. Out of total 200 cancer patients, 49 males and 13 females had CRC.

Assessment of haematological parameters in CRC patients: Pretreatment haematological parameters were assessed for Hb & ESR levels, and WBC & platelet counts. In male patients, the Hb level ranged from 4 to 13g/dl (normal 13-18g/dl), while in females from 9 to 14g/dl (normal 12-16g/dl). In both genders, majority (80%) of the patients had Hb level ~10g/dl (figure 3). The type of anaemia was iron deficiency anaemia. The

ESR was found to be ~45mm/hour in both genders (normal <20mm/hour) (figure 4). Total WBC count in both genders was found to be $3.7 - 11.7 \times 10^3/\text{mm}^3$ (normal $4 - 11 \times 10^3/\text{mm}^3$). Platelet count was found to be $120 - 300 \times 10^3/\text{mm}^3$ (normal $150 - 450 \times 10^3/\text{mm}^3$). The normal laboratory values for these parameters have been previously described²².

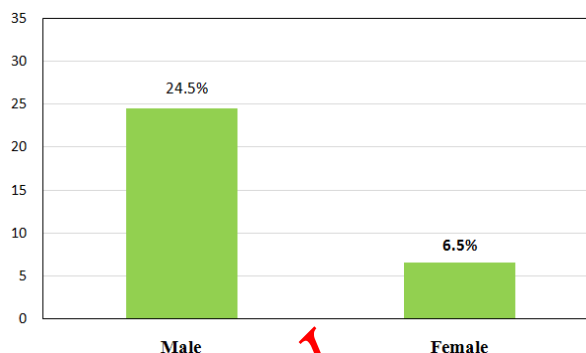


Figure No.2: Prevalence (in percentage) of CRC patients. Among total 200 cancer patients, male CRC patients constituted 24.5% and females 6.5%.



Figure No.3: Haemoglobin level of CRC patients. 10g/dl in males, and 10.2g/dl in females.

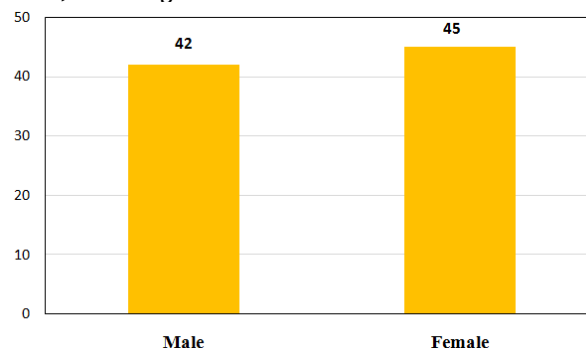


Figure No.4: ESR level of CRC patients. 42mm/hour in one hour in males, and 45mm/hour in females.

DISCUSSION

In the current study, we determined the prevalence of colorectal cancer (CRC) among various cancer patients and assessed their haematological parameters. In first part of the discussion, we discuss on the prevalence of CRC. We found significant percentage of CRC (31%) among various cancer patients. Taking all the cancer

patients together, CRC was found to be the most common (number one) in males and the second most common (number two) in females after the breast cancer, which clearly indicates the high prevalence of this disease in our region Al Ahsa. There has been very scarce data on the prevalence of this disease throughout the KSA. Our study correlates to some extent with another study of Saudi Cancer Registry (2004 to 2010), Riyadh, KSA in the regard that the prevalence of CRC in males was also found to be number one (the most common), but number third among females, where number 1 and 2 cancers were breast and thyroid cancers, respectively. The median age at presentation of CRC was reported to be 60 years in males and 55 years in females, respectively²³. Another study in KSA, conducted in 2003, also reported the prevalence of CRC in males to be the most common, but number third in females²⁴. As per the study, conducted in KSA in 2012, CRC was found to be the most common cancer among adult males and the second most common cancer (after breast cancer) among adult females¹. This indicates that CRC is on rise not only in males, but also getting more common in females, where it stands the second most common cancer after the breast cancer in our region. On the basis of age, CRC was found to be most common at the median age of 63 years in males and 60 years in females at the time of presentation in our current study. Our results are slightly different from another study of Riyadh province, where the median age at the presentation of CRC was reported to be 60 years for males and 55 years for females²³. In contrast to this, another study in Riyadh showed the higher incidence of CRC in middle age people, where the median age of male patients was reported to be 46 years and for female 41 years²⁴. These variations might be due to differences in environmental factors and mainly the dietary habits, as Riyadh is a big and busy city where the majority of the people, regardless of the age, eat junk and fiber-free food in the restaurants. The dietary and the environmental factors have already been shown as the risk factors for the development of CRC⁴⁻⁶.

In the second part of discussion, we discuss on various haematological parameters, including hemoglobin (Hb) & ESR levels, and WBC & platelet counts of CRC patients. In our study, we found two haematological parameters, the Hb and the ESR, which were disturbed in both genders. In majority (~ 80%) of CRC patients, Hb level was found to be around 10g/dl. The type of anaemia which was found was iron deficiency anaemia. Our results correlate with a study, conducted in Riyadh, which showed iron deficiency anaemia (IDA) in majority of the CRC patients²⁵. A study in China showed decreased survival of CRC patients who had IDA²⁶. It was already shown that cancer patients presenting with anaemia as their presenting feature had worse prognosis and increased mortality^{27,28}. A study in

United Kingdom confirmed strong association between IDA and colorectal cancer by showing increased risk of colorectal cancer as the haemoglobin falls²⁹. In our study, we also found moderately raised ESR in all CRC patients. It has been shown that the ESR often increases in malignant diseases³⁰. Another study showed high ESR correlates with the worse prognosis of CRC patients³¹. The other haematological parameters, i.e., WBC and platelet counts were not significantly disturbed in these patients, which indicate a good prognostic factor, as two different studies already showed the worse prognosis of CRC patients who had increased platelet³² and WBC counts³³.

Since in our study we analysed these parameters in CRC patients at the time of their diagnosis and before the start of treatment, further follow up of these patients, before and after the start of cancer treatment and iron supplements, etc. would provide more data on the association between these parameters and CRC prognosis.

CONCLUSION

We found significant prevalence (31%) of CRC among various cancer patients. Two haematological parameters, i.e., Hb and ESR were significantly disturbed in these CRC patients. The Hb and ESR parameters are inexpensive investigations, which are very important indicative of CRC disease and its prognosis.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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Correlation of C Reactive Protein Elevation with Hypertension in Tertiary Care Hospital

Muhammad Iqbal, Suhail Ahmed Almani and Shafak Nazia

ABSTRACT

Objective: To determine the correlation between serum CRP levels and high blood pressure in hypertensive patients.

Study Design: Observational / descriptive study

Place and Duration of Study: This study was conducted at the Medicine OPD of LUMHS, Jamshoro from May 2016 to November 2016.

Materials and Methods: This study was conducted on 101. All the hypertensive patients were incorporated, after taking informed consent while, smokers, diabetics, patients having any infection, and any other co morbidity were excluded from the study to avoid bias in the results. Blood samples were taken for assessment of C reactive protein. Information was gathered on self-made proforma.

Results: Mean age of the participants was 41 ± 2.03 years. Majority of the cases 60 (59.40%) were noted with age group of >40 years. 55 (54.77%) patients were male while 14 (13.86%) were female. Mean SBP was 146.66 ± 18.99 mm Hg, mean diastolic blood pressure was 96.50 ± 10.59 mm Hg and mean CRP was 2.8 ± 0.10 mg/dL. 65.35% patients had elevated C reactive protein. Positive correlation was found between CRP and SBP R-value 0.36 and also positive correlation was noted between CRP and DBP r-value 0.38.

Conclusion: CRP elevation was positively correlated with hypertension, but not strongly correlated.

Key Words C reactive protein, hypertension, Co-relation

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INTRODUCTION

Hypertension (HTN) is the typical, asymptomatic, promptly detectable and for the most part effortlessly treatable sickness that prompts to deadly difficulties if left untreated.¹ In the world over around 1 billion peoples having HTN “333 million in financially created and 639 million in the economically developing countries”.² It is most often is asymptomatic in nature which leads to dangerous complications in untreated cases. Around 7.6 million mortality and 92 million disabilities worldwide were attributable to hypertension in 2001. It is the common cause of atherosclerosis and various cardiovascular diseases CVDs like CHD, renal failure, CHF, ischemic stroke and the peripheral vascular disease.³ HTN is the multi factorial attribute that outcomes from net impact of ecological and hereditary constituents. Elements that may add to HTN incorporate plenty salt in the diet or alcohol consumption, depression, aging, hereditary qualities physical idleness, rich fat saturated diets and the family history.

Inflammation considered as the commonest pathogenic element in the development of pulmonary arterial hypertension (PH) with several studies showing a significant association between systemic inflammatory markers and PH.⁴ Inflammation is also a precursor for the atherosclerosis progression and systemic hypertension. CRP is the plasma protein, having “ $\leq 1 \text{ mg/L}$ ” in normal cases with levels elevate 100 fold in the injuries, inflammation and infection's response. CRP impulsive the “somatic C-polysaccharides of the pneumoniae by streptococcus bacteria and 1st acute phase of the protein to be labeled.”⁵ CRP primarily synthesize through hepatic response to “IL-6” and “IL-1 β ”, and the risk valuation marker, and had good facts as the stable, with big half-life as nineteen hrs and demonstrated minor alterations in the levels in b/w fresh and the frozen forms which makes it as a good marker for diagnosis.² In 2001, Bautista et al, 1st time evaluate the CRP levels in hypertensive cases and found it is the independent risk factor for hypertension development.⁶ Elevated CRP can development the HTN by reduction of endothelium-dependent relaxation by decreasing nitric oxide in the endothelial cells, in outcome vasoconstriction and improved endothelin1 production.⁷ CRP can also encourage the atherosclerosis by highly regulating angiotensin 1 receptor manifestation.⁸ HTN, if not treated timely than in the cases may develop lethal complications and may result in morbidity and mortality. HTN is commonest

Department of Medicine, LUMHS Jamshoro.

Correspondence: Dr. Muhammad Iqbal, Associate Professor, Department of Medicine, LUMHS Jamshoro.

Contact No: 0333-2700192

Email: saedaarain@yahoo.com.com

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health issue in population in developing nations and also major cause for CVD and it has been stated that HTN is the portion of inflammation and many researchers reported that increases of CRP in HTN cases. To best of our knowledge, we had conducted this study on relationship of CRP and hypertension in our setup.

MATERIALS AND METHODS

This observational descriptive study was containing on 101 cases attending medicine OPD of LUMHS over a time of 7 months; May 2016 to November 2016. All the hypertensive patients were incorporated after taking informed consent while, smokers, diabetics, patients having any infection, endocrine pathologies, Recent illness, previous history of IHS, MI, stroke, PVS and other vasculitis Chronic inflammatory diseases like Systemic Lupus Erythromatosis, and any other co morbidity were excluded from the study to avoid bias in the results. After taking thorough history and doing examination, blood was taken for estimation of C reactive protein. Information was gathered on self-made proforma. SPSS version 16 was used for analysis of results.

RESULTS

Total 101 hypertensive cases were selected. Mean age of the participants was 41 ± 2.03 . 11(10.49%) patients were with age group of < 30 years, 30(29.70%) having age group of 30-40 years while 60(59.40%) were noted with age group of > 40 years. 55(54.77%) patients were male while 14(13.86%) were female. Table:1.

Table No.1: Demographic characteristics of Patients n=101

Demographic characteristics	Number / percentages
AGE	
less than 30 years	11(10.49%)
30-40 years	30(29.70%)
More than 40 years	60(59.40%)
Gender	
Male	55(54.45%)
Female	14(13.86%)

Table No.2: Patients distribution according to Hypertension and CRP (n=101)

Blood pressure and CRP	Mean $\pm$ SD
Systolic blood pressure	146.66 $\pm$ 18.99 mm Hg
Diastolic BP	96.50 $\pm$ 10.59 mm Hg
CRP	0.8 $\pm$ 0.10mg/dL

Mean SBP was 146.66 $\pm$ 18.99 mm Hg, mean DBP was 96.50 $\pm$ 10.59 mm Hg and mean CRP was 0.8 $\pm$ 0.10 mg/dL. Table: 2.

65.35% patients had elevated C reactive protein Fig: 1.

In this study positive correlation had found between CRP and SBP R-value 0.36 Fig:2

In our study positive correlation was found between CRP and DBP R-value 0.38 Fig:3

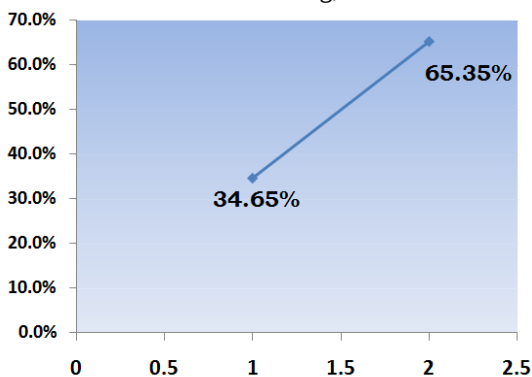


Figure No.1. Patients distribution according to frequency of elevated CRP (n=101)

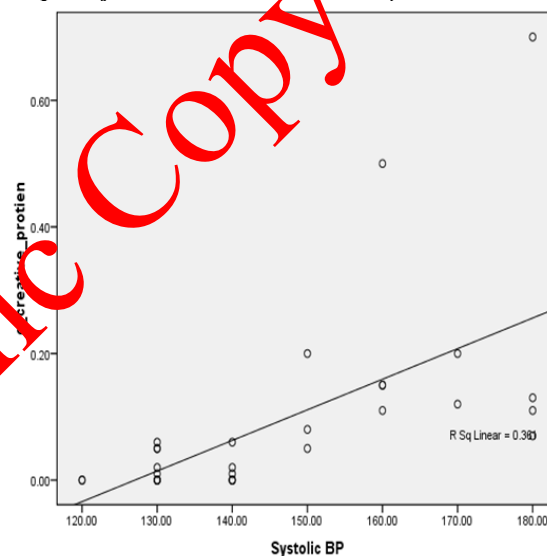


Figure No.2. Correlation between diastolic BP and CRP n=101

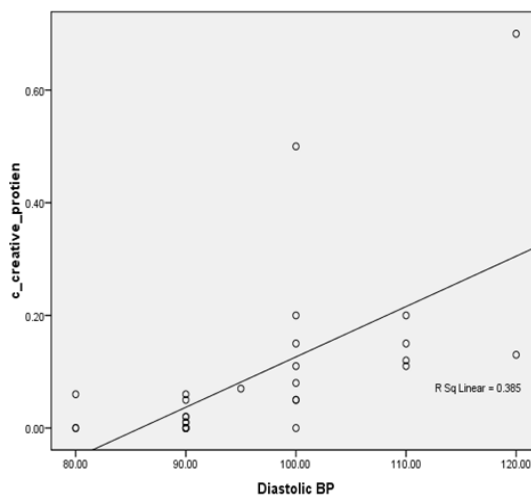


Figure No.3. Correlation between diastolic BP and CRP n=101

DISCUSSION

In present study assessed the correlation of high blood pressure and CRP and we found 65.35% hypertensive patients had increased c-reactive protein. Similar findings were seen in the study conducted by Dawris S.⁹ On other hand Sesso and workers mentioned that the elevated level of the CRP is a risk of hypertension development. This correlation between elevated hs CRP and new-onset HTN led Sesso et al to suggested that HTN is the inflammatory disease.¹⁰ The ATTICA study found higher levels of hsCRP, TNF- α and other inflammatory markers in pre-hypertensives. This communication was independent of the other co-existing causes for cardiovascular diseases indicating that pre-hypertension might be an inflammatory condition.¹¹ HTN may develop to several inflammatory stimulation at walls of vessel those encourage production of pro inflammatory cytokines like as the TNF- α , IL-6 and CRP as the protection against factors of the injuries. Several studies reported that inflammatory markers like as CRP is the particular determinant of endothelium containing vascular function in cases having CHD and this condition can also exist in the cases having HTN.^{2,13}

CRP prevents the nitric oxide formation through endothelial cells that in turn encourage vasoconstriction, adhesion of the leukocytes, and activation of the platelets, oxidation and thrombosis. Furthermore elevated CRP may high regulate the receptors of the angiotensin and improve the expression of the activator inhibitor-1 of plasminogen through endothelial cells¹³. These both conditions may develop the BP and promote the atherogenesis. In our study 34.65% smoker cases were with elevated CRP level and CRP mean was 0.8 ± 0.10 mg/dL. While in the study conducted by Dar MS et al² reported that mean hsCRP in the patients with hypertension is 3.26 mg/L on comparing with normal cases as 1.56 mg/L p-value 0.001. This mean level was very high as compare to our study, this may because in our study sample size is very short. Further Dar MS et al² reported that the significant difference of hs-CRP elevation was also seen in cases with shorter hypertensive duration as 1 year, as compare to those cases having hypertension history more than 5 years P-0.01.

Results of this study show that c reactive protein was positively correlated with both SBP and DBP.

CONCLUSION

In the conclusion of this study the C reactive protein was positively correlated with hypertension, while no strong correlation was found, therefore further

randomized studies are require to conform the findings of this study.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Effects of Caffeinated Soft Drink on Gonadosomatic Index and Testicular Histology: An In-Vivo Experimental Study in a Wistar Albino Rat Model

Shoukat Ali Memon¹, Sajjad Ali Almani¹ and Abdul Hafeez Baloch²

ABSTRACT

Objective: To determine the effects of caffeinated carbonated soft drinks on the testicular indices, gonadosomatic index (GSI) and histology in an *in-vivo* Albino Wistar rat model.

Study Design: Experimental study

Place and Duration of Study: This study was conducted at the Department of Medicine, Faculty of Medicine and Allied Medical Sciences, Isra University Hyderabad from July 2014 to February 2015.

Materials and Methods: The present experimental case control study was conducted at the Department of Anatomy and Postgraduate laboratory of Isra University Hyderabad Sindh. A sample of 20 Wistar Albino rats was selected randomly according to inclusion criteria. Group A (n=10)- tagged as control rats and Group B (n=10)- Experimental rats. Testicular size, weight and histological examination were performed. SPSS 22.0 was used for data analysis at 95% confidence interval (P-value ≤ 0.05).

Results: Body weight was increased in the experimental group B rats (P=0.0004). Testicular size and weight were decreased in rats given caffeinated soft drinkers (P= 0.0006). Necrotic areas, Edematous tissues, pyknotic nuclei, hyalinization, luminal defects, reduced seminiferous cell thickness; diameter and tubular lumen were noted in experimental rats.

Conclusion: Caffeinated Soft Drink showed deleterious effects on body weight, testicular indices, gonadosomatic index and testicular histology as observed in present *in-vivo* Wistar Albino Rat model study.

Key Words: Caffeine, Soft Drinks, Gonads, Body mass

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INTRODUCTION

Biochemically, the caffeine is a methyl xanthene compound which is a potent brain stimulant hence commonly used in the soft drinks. Caffeine is the World's widely consumed psychoactive agent used as drug combinations and in soft drink beverages.¹ Caffeine is related to the purine bases (adenine and guanine) of the Deoxyribonucleic acid (DNA) and Ribonucleic acid (RNA). Most common source of caffeine is the seed of Coffea plants. Caffeinated carbonated soft beverages are consumed for vigor, vitality and prevent drowsiness and to improve physical performance.

Caffeinated carbonated soft drinks are very popular; for example 90% of North Americans consume caffeine daily.^{2,3} Caffeinated carbonated soft drinks increase body weight due to the sugar content. Obesity is a major health problem in the developed countries like America. Caffeinated carbonated soft drinks are linked to the Infertility and obesity.⁴

Exact recipe of Caffeinated carbonated soft drinks is one of the top most secrets of the industry. But the ingredients labelled on the tins of caffeinated carbonated soft drinks show containing caffeine, flavoring agents, colorants, odorants, phosphoric acid and bicarbonate.⁵ Many countries have legally banned the use of caffeinated carbonated soft drinks in the schools and university students such as the Philadelphia, Los-Angeles and Miami. California has legally banned the use of soft drinks by passing a Government Resolution in 2016 as they are bad for health.⁶ Caffeine is a methyl Xanthine, an inhibitor of Phosphodiesterase (PDE) enzyme. Caffeine modulates the cellular functions by increasing the intracellular c-AMP levels, this results in the nervous system alert, increased appetite and physical activity.⁷⁻⁹ Caffeine increases the basal metabolic rate and increases body temperature, this might interfere with testicular

¹. Department of Anatomy, Isra University, Hyderabad.

². Department of Anatomy, King Faisal University, College of Medicine, Al-Ahsa, Kingdom of Saudi Arabia.

Correspondence: Dr. Shoukat Ali Memon, Assistant Professor of Medicine, Isra University, Hyderabad, Sindh.

Contact No: 0300-3032792

Email: Giggly786@gmail.com

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functions, spermatogenesis, decreased sperm counts and infertility. The Gonadosomatic index, (GSI) is an index of percentage of gonad weight in relation to the body mass. GSI is an index of identifying the fertility status of an animal. GSI is calculated as $[\text{Gonad Weight} / \text{Total Tissue Weight}] \times 100$.^{10,11} A recent study reported the GSI is a good indicator of gonadal development and fertility in fish model during the spawning periods.^{11,12} In this context, the effects of Caffeinated carbonated soft drinks needs further research as it may be causing serious fertility effects in human beings which is yet to be evaluated. The present study was designed to study the effects of caffeinated carbonated soft drinks on the testicular indices, Gonadosomatic index (GSI) and histology in an *in-vivo* Albino Wistar rat model. The present is the first study which determined the effects of caffeinated carbonated soft drinks on the testes. Testicular weight, body weight and testicular histology were the studied to determine the health hazardous effects of soft drinks. The present study hypothesized the caffeinated carbonated soft drinks have no adverse effects on the testes of albino Wistar rats.

MATERIALS AND METHODS

The present experimental case control study was conducted at the Department of Anatomy and Postgraduate laboratory of Isra University Hyderabad Sindh. The animals were housed at the Animal House, Department of Animal Husbandry and Veterinary Sciences, Sindh Agriculture University Tandojam. The study covered a period of six months for experimentation and write up. A sample of 30 Wistar Albino rats were selected randomly according to inclusion criteria of body weight 200 grams and age 8 – 12 weeks. Animals were divided into 2 groups; Group A (n=10)- tagged as control rats and Group B (n=10)- Experimental rats which were used for the research purpose and were drink on caffeinated carbonated soft drinks along with normal chow diet. Study protocol was approved by the ethical review committee of the institute and the animal research ethics committee. Animals were kept in according to the NIH (National Institutes of Health) Guidelines for the Care and Use of Laboratory Animals. Plastic cages were used for the housing of rats. The animal house is well equipped. The cages are equipped with stainless steel feeders. Plastic drinkers with nozzles are available for the drinking purpose. Access to the water and standard chow diet was free and available 24 hours before and after experimental period. Saw dust was used as feeding and changed daily. Experimental group B rats were given caffeinated carbonated soft drinks in addition to the standard chow diet. Hygiene and ventilation of cages was strictly maintained. Temperature was maintained at the 26°C. 12/12 hours dark and light cycles were maintained for the rats. Body weight was recorded on

an electronic weighing machine before experiment. The caffeinated carbonated soft drinks were given for 30 days. At the end of experiment period, the body weight was performed again and noted. Animals were euthanized by cervical dislocation after Ketamine and Xylazine anesthesia. Body cavity was open by dissection; testes were retrieved by fine dissection. Gross examination of testes including size and weight were noted. Tissue was processed in formalin. 3-5µ thick tissue sections were prepared and stained by Hematoxylin and Eosin staining for the histological study. Histological slides were prepared from the testes of control and experimental rats both. Gonadosomatic index was calculated as using formula; Gonadosomatic index (%) = $[\text{Gonad Weight} / \text{Total Tissue Weight}] \times 100$.¹² The data was analyzed on SPSS version 22.0 (IBM, incorporation, USA) for windows. Continuous variables comparisons were analyzed by Student t-test and results were presented as mean $\pm$ SD. While the categorical data was handled by Chi- square test and results were presented as frequency and %. Data was presented in tabulated form. 95% confidence interval was the criterion for the data analysis (P-value $\leq$ 0.05) as statistically significant.

RESULTS

Body weight and testicular parameters are shown in the table 1. The initial weight of the body in grams of Albino rats in groups A and B were as 218.80 ± 12.5 and 221.20 ± 9.7 respectively (P=0.057). End experiment body of Albino rats was noted as 226.40 ± 9.56 and 236.90 ± 16.29 in groups A and B respectively (P = 0.001). Testicular size was decreased in rats given caffeinated soft drinks. Testicular size was noted as 1.852 ± 0.041 versus 1.749 ± 0.067 in group A and B respectively (P= 0.0006).

Table No.1: Body weight and testicular parameters of experimental Albino rats (grams)

Groups	Group A	Group B	P-value
Body weight (baseline)	218.8 $\pm$ 12.5	221.2 $\pm$ 9.7	0.057 [†]
Body weight (post-experiment)	226.4 $\pm$ 19.1	236.9 $\pm$ 25.4	0.001
Testicular size (cm)	1.852 $\pm$ 0.041	1.749 $\pm$ 0.067	0.006
Testicular weight (g)	1.068 $\pm$ 0.027	0.860 $\pm$ 0.063	0.0001
Tubular epithelial cell layers	5.20 $\pm$ 0.63	2.90 $\pm$ 0.57	0.0001
Seminiferous tubule diameter (µm)	259.8 $\pm$ 4.01	257.2 $\pm$ 3.9	0.0001

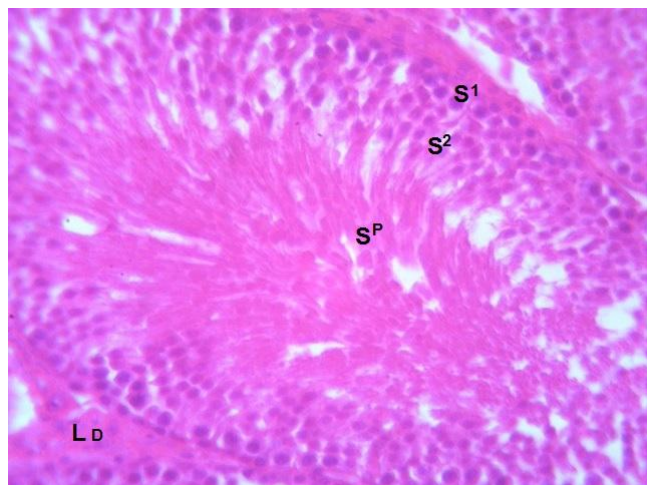
[†]- P value Non-significant

Table No.2: Gonadosomatic index (%) of experimental Albino rats

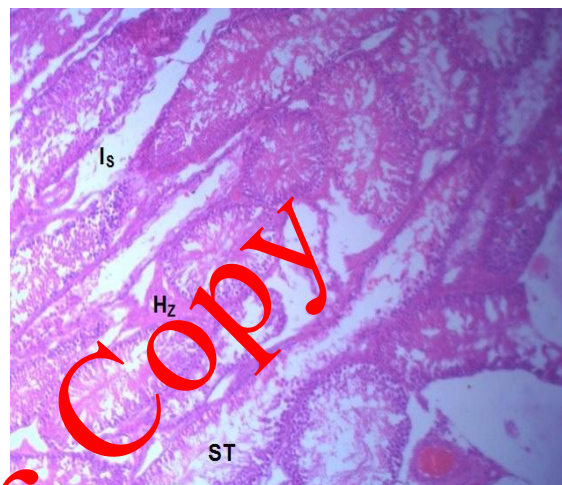
Groups	Mean	SD	P-value
Group A	0.47	0.02	0.001
Group B	0.37	0.04	

Testicular weight was found in gram in control group A and experimental groups B were 1.068 ± 0.027 and 0.860 ± 0.063 ($p < 0.0001$). The findings suggest a negative effect of caffeinated soft drinks on weight of testes. The GSI was decreased in rats that were given caffeinated soft drinks. GSI is mentioned in table-4. The GSI was decrease in experimental groups B (caffeinated soft drinks) as Compared to control group. GSI was found in control group A and experimental groups as 0.47 ± 0.02 and $0.37 \pm 0.04\%$ respectively. The GSI of experimental groups B showed a statistically highly

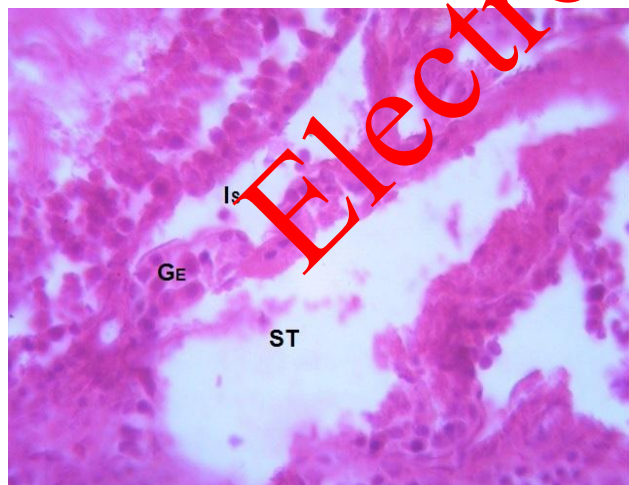
significant decrease ($P=0.0001$). Histological findings of controls and experimental albino rats are shown in microphotographs 1 to 4. Testicular histology in experimental group B showed major changes in testicular histology as shown in microphotograph 2 to 4. Necrotic areas, Edematous tissues, pyknotic nuclei, hyalinization, luminal defects, reduced seminiferous cell thickness; diameter and tubular lumen were noted in rats given free quantities of mixture of caffeinated soft drinks.



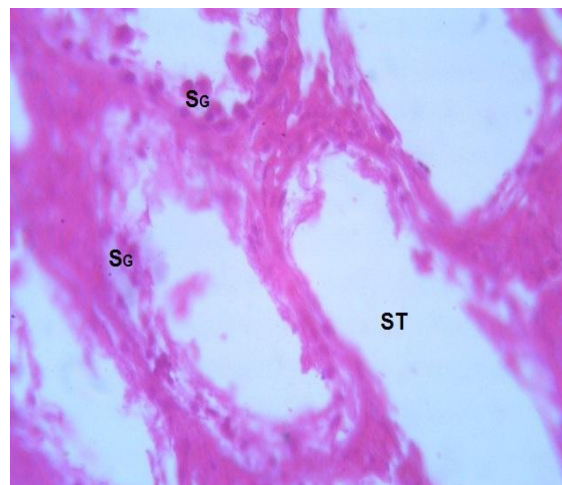
Microphotograph 1: Photomicrograph of the cross section of testis in control group A showing many normal Dark staining nucleus of spermatogonia (S1) present on the basement membrane. Spermatid (S2) is seen in adluminal surface. Luminal are filled with sperms (SP). Leydig cells are seen in the connective tissue. Magnification x 400. H&E.



Microphotograph 2: Photomicrograph of the seminiferous tubules (ST) showing changes with the formation of edematous tissues in the interstitial (Is) connective tissue, necrotic areas, hyalinization (Hz) observed in the experimental group B (non-caffeinated soft drinks) x 100. H&E.



Microphotograph 3: Cross section of the seminiferous tubules (ST) showing decrease layers of germinal epithelium (GE) indicating that there may be arrest of spermatogonia, decrease size of the basement membrane and decrease formation of sperms. Edema is observed in the interstitial connective tissue (Is). Magnification x 400. H&E (Experimental Group B).



Microphotograph 4: Cross section of seminiferous tubule (ST) shows spermatogonia (SG) which may be arrested and caused reduced germinal layer. Edematous and narrowing of lumen were observed in the experimental group 'B' x 400. H&E.

DISCUSSION

The present is the first original research study conducted to determine the harmful effects of caffeinated carbonated soft drinks on the body weight, testicular indices, Gonadosomatic index and testicular histological changes in an *in-vivo* animal rat model. To the best of knowledge and a search of Pubmed, Medlip and Pakmedinet, the present is the first research being reported from Isra University Hyderabad, Sindh, Pakistan. The researcher claim it appears to be the first research study of its kind reported from Pakistan. Body weight, testicular weight, testicular indices, GSI and testicular histological examination showed adverse effects in the Experimental group B rats compared to the controls. This proves the hypothesis that the caffeinated carbonated soft drinks adversely affect the testicular structure and functions. Testicular weight, shrunken size and impaired spermatogenesis (Microphotographs 2-4) point towards deleterious effects of soft drinks *in-vivo*. The food intake was increased and increased body weight point towards the tendency of obesity induced by soft drinks. This proves the fact that the caffeinated carbonated soft drinks are health hazardous and may contribute to the obesity and infertility when consumed over a long time period. Soft drinks are proved to act as an appetizer. The observation points towards possibility of increased risk of obesity, infertility and cardiac problems in human beings too. Shrunken testicular size of rats fed on caffeinated carbonated soft drinks proves tendency of testicular toxicity. The rats given combined caffeinated carbonated soft drinks showed significant decrease in testicular size ($p < 0.05$). Hence it may be postulated that the caffeinated carbonated soft drinks increase the risk of problems like infertility, testicular dystrophy, impaired spermatogenesis, etc. Similarly, testicular weight as shown in our study was reduced up to highly significant value ($p = 0.0001$) in rats that were given ($p = 0.0001$). The findings suggest a deleterious effect of caffeinated carbonated soft drinks against testes. These findings are in keeping with previous studies which reported deleterious effects of caffeinated carbonated soft drinks on the liver¹³, kidneys¹⁴, brain¹⁵, cerebellum¹⁶, lateral and medial geniculate body.¹⁷ A dynamic bone disease in rats with chronic kidney disease, fructose induce metabolic syndrome and glomerular hypertension, carcinogenic effects of aspartame, semen quality of a child in pregnant women using soft drink (one of its ingredient) during pregnancy were reported.¹⁸ The GSI is an indicator of sexual maturity and was found decreased in rats drunk the caffeinated carbonated soft drinks (table 2) ($p = 0.0001$). Adebisi¹⁹ demonstrated that the Gonadosomatic index is the indicators of gonadal development in the fish and production of the eggs. The findings of present study are in agreement with a previous study by Ebbeling²⁰

has reported the effects of cola drinks on rat body weight. Body weight gain was observed similar to present study and risk of obesity was concluded. Adjene²¹ reported on the deleterious effects of soft energy drinks on body and brain tissue. Body weight was increased in rat group's drunken caffeinated carbonated soft drinks and adverse effects were also reported on the brain tissue. The findings of above study support the present research. Eluwahad²² reported shrinkage and degeneration of Cerebellar cortical Purkinje cells in experimental rats. Cerebellar cortical cells showed hypertrophic dendrites, increased number of regenerating molecular and granular cells, degeneration and increase in Purkinje cells and white matter spongiosis. These findings indirectly support that the caffeinated carbonated soft drinks are toxic for various tissue organs of body.²³⁻²⁵ Keeping in view, the findings of present study and review of available medical research literature, it is suggested the caffeinated carbonated soft drinks adversely affect the various tissue organs of organisms. In present study, the harmful effects on the testicular structure and function are evident sufficient to report and warnings may be issued on the related health problems of obesity, infertility and obesity related metabolic syndrome. The use of caffeinated carbonated soft drinks may be restricted and law implications are suggested like countries as in California. The present study has some limitations- first; the present study is an experimental animal model study, second; the sample size was very small. Hence the findings cannot be generalized and further large scale studies are recommended.

CONCLUSION

The present study reports deleterious effects of Caffeinated Carbonated Soft Drink on body weight, testicular indices, Gonadosomatic index and testicular histology as observed in *in-vivo* Wistar Albino Rat model. Testicular necrosis, edema, pyknotic nuclei, hyalinization, luminal defects, reduced seminiferous cell thickness; diameter and tubular lumen were observed. These findings may possibly lead to poor quality of semen and infertility which needs both experimental and clinical research.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency of Groin Pain in Inguinal Hernia Repair By New Extended View Totally Extraperitoneal Technique Without Mesh Fixation

Muhammad Azim Khan¹, Shaukat Ali² and Allah Bukhsh Parhar³

ABSTRACT

Objective: The objective was to determine the frequency of severity of groin pain after inguinal hernia repair by e-Tep without mesh fixation.

Study Design: Descriptive case study

Place and Duration of Study: This study was conducted at the General Surgical Department of Nishtar Hospital Multan from 15 November, 2015 to 25 October 2016.

Materials and Methods: Total 350 patients of both genders with inguinal hernia with duration of complain >6 months were included in the study. Patients with Recurrent Hernia, Hypertension, DM, Previous intra-peritoneal intervention, ASA grade III and IV were excluded. In this technique we give a 12mm incision on the upper lateral quadrant of abdomen on the same side of hernia or on either side in the bilateral case. We expose the anterior aponeurosis and incise it creating the space over the posterior aponeurosis. Two additional 5-mm ports are created one at umbilicus other midway between this one and pubic tubercle. Thus with the help of scissors we obtained ample space of surgical area. This division was created with the help of laproscope from the lower most trocar, which allow proper dissection of the line of Douglas free from the underline peritoneum.

Results: The age range in our study was from 18-45 years with average age of 34.585 ± 7.61 years and average duration of hernia was 8.450 ± 1.91 months. Baseline pain score 4.666 ± 1.02 , height 1.571 ± 0.11 meter, weight 73.84 ± 13.76 and mean BMI was 28.668 ± 3.11 kg/m². Majority of the patients were from 31-40 years (42.1%). Male were 86.9%. 86.1% patients have right inguinal hernia. No pain was seen in 72.8%, mild pain in 22.4% and severe pain was seen in 4.8% patients.

Conclusion: It was concluded that most patients were asymptomatic after Laproscopic e-Tep. So e-Tep repair with no mesh fixation is safe and feasible for inguinal hernia.

Key Words: Inguinal hernia, e-Tep hernia repair, Groin pain

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INTRODUCTION

Laparoscopic inguinal hernia repair approaches were first used in 1982, Later on different modifications were done. Recently in 2010, DAES J have made a modification of Tep technique to compensate for its primary disadvantage which is limited surgical field. This modification is called e-Tep (enhanced view-totally extraperitoneal) technique which creates ample surgical field being useful in big inguino scrotal hernias, incarcerated hernia, obese patients and in patients with short distance between umbilicus and pubis.¹

¹. Department of Surgery, Ghazi Khan Medical College, DG Khan

². Department of Surgery, Sahiwal Medical College, Sahiwal.

³. Department of Surgery, NMC, Multan.

Correspondence: Dr. Muhammad Azim Khan, Associate Professor of Surgery, Ghazi Khan Medical College DG Khan
Contact No: 0300-7331709
Email: azimkhan874@hotmail.com

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Groin pain is quite common following the inguinal hernia repair and may reduce the quality of life. This groin pain is either "non-neuropathic" (which is due to scar tissue or mechanical pressure) or neuropathic, (which results from nerve injury or nerve compression or by both). A 2012 Cochrane review by Willaert et al, reports this risk of post hernia repair chronic pain from 7.83% to 40.47%.²

Also 2% to 4% chronic pain is serious that affects the patients daily activity.³

Ali SM and his colleagues has reported the frequency of groin pain after inguinal hernia repair by e-Tep without mesh fixation as 21%- mild pain, 2% having moderate and severe pain.⁴

Bignell M et al has reported in another study the frequency of this pain as 15% by e-Tep.⁵

MATERIALS AND METHODS

Total 350 patients of both genders with inguinal hernia duration > 6 months were included in this study. Patients with recurrent hernia, hypertension, DM, previous intra-peritoneal interventions, ASA grade III and grade IV were excluded. This study was conducted in the surgical department of Nishtar Hospital, Multan from November 15, 2015 to October 25, 2016.

RESULTS

Age range of this study was from 18 to 45 years with mean age of 34.585 ± 7.61 years, mean duration of hernia 8.450 ± 1.91 months, Base line pain score 4.680 ± 1.02 , Height 1.571 ± 0.11 meter, weight 73.874 ± 13.76 and mean BMI was $28.668 \pm 3.11 \text{ kg/m}^2$ as shown in table -1. Majority of the patients were from 31-40 years (42.1%) as shown in table-2. Males were 86.9% as shown in table-3. while 68.1% patients belong to right hernia site as shown in table 4. No pain was seen in 72.8% patients, mild pain was seen in 22.4% and severe pain was seen in 4.8% patients as shown in Table-5, 6,7 and Table 8.

Table No.1: Mean $\pm$ SD of patients according to age, duration of hernia, base line pain score, height, weight and BMI n=335

Demographics	Mean $\pm$ SD
Age(years)	34.585 $\pm$ 7.61
Duration of hernia(months)	8.450 $\pm$ 1.91
Base line pain score	4.680 $\pm$ 1.91
Height (m)	1.57 $\pm$ 0.11
Weight (kg)	73.87 $\pm$ 13.76
BMI (kg/m ²)	28.668 $\pm$ 3.11

Table No.2: % age of patients according to age distribution n=335

Age Groups(years)	No. of Patients	%age
<20	22	6.6%
21-30	22	23.3%
31-40	141	42.1%
>40	51	28.1%

Table No.3: %age of patients according to gender n=335

Gender	No. of patients	%age
Male	291	86.9%
Female	44	13.1%

Table No.4: %age of patients according to site of inguinal hernia n=335

Age group (years)	No. of patients	%age
Right	228	68.1%
Left	79	23.6%
Bilateral	28	8.4%

Table No.5: %age of patients according to no pain n=335

No pain	No. of patients	%age
Yes	244	72.8%
No	91	27.2%

Table No.6: %age of patients according to Mild pain n=335

Mild Pain	No. of Patients	%age
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Yes	75	22.4%
No	260	77.6%

Table No.7: %age of patients according to Severe Pain n=335

Severe Pain	No. of Patients	%age
Yes	16	4.8%
No	319	95.2%

Table No.8: Stratification of no pain with respect to age groups.

Age (years)	No Pain		P-Value
	Yes	No	
<20	14(63.6%)	8(36.4%)	0.759
21-30	58(74.4%)	20(25.6%)	
31-40	102(72.3%)	39(27.7%)	
>40	70(74.5%)	24(25.5%)	
Total	244(72.8%)	91(27.2%)	

DISCUSSION

In my study no pain was seen in 72.8% patients, Mild pain was 22.4% and severe pain was 4.8%. Chronic disabling pain persistent at and beyond 1 year is thought to be real but rare, which affects 1% patients with hernia repair.⁶

Severe chronic pain after hernia repair is usually due to ischaemia or neuropathy. Ischaemia may be due to repair under tension which causes severe pain. Neuropathic chronic pain is usually by nerve injury during dissection, neuroma formation, entrapment by sutures or by post operative adhesions or inflammation.⁷

It is true that reported incidence of chronic groin pain after hernia repair is increasing in recent years, though the cause of these changes are still unsettled.⁸

The report from the "DANISH HERNIA DATA BASE" group⁹ suggests that incidence of chronic pain 1 year after groin hernia repair is 29% which is unexpectedly high and gain the attention of all surgeons who repair hernias. Only 1-2% have severe pain at rest and 10% have severe pain on moving which is the result of another study.¹⁰

97.5% Patients with severe chronic pain after groin hernia repair failed to return to walk at 3 months.¹¹

CONCLUSION

It was concluded that the majority of patients were asymptomatic after laproscopic E-TAP inguinal hernia repair. So, laproscopic E-TAP repair with no mesh fixation is safe and feasible for inguinal hernias.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Knowledge and Attitude regarding Insulin, its Administration in Diabetic Patients Attending Medicine OPD in Tertiary Care Hospital

Ramesh Kumar Suthar¹, Naheed Memon² and Lal Bukhsh Khaskheli³

ABSTRACT

Objective: To find out knowledge, attitude and frequency of insulin in type II diabetic patients.

Study Design: Observational / descriptive study

Place and Duration of Study: This study was conducted at the Tertiary Care Hospital from January 2016 to July 2016.

Materials and Methods: All diabetic patients who were attending the general medicine OPD were included in the study after taking informed consent. Total 135 cases were selected. Cases were interviewed and all the information regarding patient's knowledge, attitude and its frequency of administration were gathered on pre designed proforma.

Results: Mean age was noted 37 ± 2.03 years. Out of 135 patients, 27(20%) patients belonged to age of <30 years. Majority of cases in this study, i.e. 67(49.62%) had received primary education, (15.5%) cases were illiterate while only 15(11.11%) were graduate. 18.51% had complete knowledge regarding insulin 51.85% had partial knowledge while 29.62% patients don't know. Majority of patients i.e. 79(58.51%) patients believe that if once insulin is started, it should be continued forever and it can't be stopped. Only 43(35.55%) patients agree that Self administration of insulin is beneficial. 13(9.62%) patients were in favor that they will use insulin in future if they will be advised. 97(71.85%) patients believe that Insulin is usually prescribed as a last option in the treatment. Only 14.81% patients were under treatment of insulin while 85.19% were under oral medication.

Conclusion: In the conclusion of this study mostly patients were found without proper knowledge regarding insulin administration and mostly showed negative attitude.

Key Words: Knowledge, Attitude, Insulin

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INTRODUCTION

Diabetes and its microvascular complications having higher risk of the accelerated atherosclerosis that eventually culminates in the CVD and cerebrovascular events along with premature death.¹ Diabetes is big economic burdens in new-developing nations. It is the commonest prevailing disease worldwide, estimated prevalence globally was in 2013, 382 million people having DM and probably expected that to rise to 592 million in 2035. Currently 6.6 million diabetic cases in Pakistan and in 2025 people with diabetes is probably to be 14.5 million; Pakistan is 11th big diabetic population country.²

Studies stated that controlled glycemic status can decrease the complications rate and evidence suggested

that the cases those are knowledgeable regarding DM self-care, having better glycemic status³. According to recent estimates, 50% patients having type 2 DM require insulin in the first six years following diagnosis.⁴ The self-care practices of individuals influenced through their knowledge about diabetes; the more they know about their illness, more they would have self-management skills. Many research work published have shown that, in Pakistan the diabetic population don't have enough awareness of diabetes, the proper use of medications, life style modifications, dietary plans, myths associated with insulin and other education programs on health issues.⁵ Studies of the developed countries stated that above than 30% diabetic patients use insulin with combination of oral anti-diabetic drugs.⁶ Low knowledge regarding insulin drug is likely to effects its adherence and the acceptance. Being an injection formed drug, its use more likely to be effected through misconceptions than oral anti-diabetic drugs. Insulin ensures attainment of recommended desired metabolic targets, maintains the blood glucose level at an appropriate range, and inhibits many complications resulting from hyperglycemia. However, insulin is usually not taken on time by these

¹. Department of Medicine, Indus Medical College TM. Khan.

². Department of Pharmacy / Anatomy³, LUMHS Jamshoro.

Correspondence: Dr. Ramesh Kumar Suthar, Assistant Professor of Medicine, Indus Medical College TM. Khan.

Contact No: 0313-2851728

Email: dr.sajidarain@gmail.com

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patients.⁷ There are different factors that cause resistance to the initiation of insulin therapy such as myths concerning DM and its treatment and nature of insulin. This may also be due to a dislike of the healthcare centres⁸. There could also be many other factors that might influence attitudes, such as patient hesitation, prejudice against injection, misperceptions, inadequate knowledge of insulin action and belief that another treatment should be offered as the initial treatment. DM patients with poorly regulated blood glucose levels are at risk of increased morbidity and mortality, and proper insulin treatment is the good blood glucose levels regulator drug. Purpose behind present study was to find out knowledge and attitude and frequency of patients using insulin in patients with DM.

MATERIALS AND METHODS

Present observational study was held in medicine department at the tertiary care hospital over a 6 months duration from January 2016 to July 2016. All the type II DM patients who were attending the OPD were selected after taking informed consent. Total 135 cases were included in the study. Patient's knowledge was assessed regarding control of diabetes by insulin, their attitudes and myths towards administration of insulin. All patients were interviewed and all the information was gathered on pre designed self-made proforma. Patients were asked about age, literacy level, their socioeconomic condition. Questions were asked regarding awareness and attitude of insulin and its frequency of administration etc. Results were analyzed on SPSS version 16.

RESULTS

Total 135 diabetic cases were incorporated. Mean age was 37 $\pm$ 2.03 years. Out of 135 patients, 27(20%) patients were with < 30 years of age, 35(25.92%) belonged to age group of 30-40 years while 73(54%) belonged to age of > 40 years. Table 1

Majority of cases in this study, i.e. 67(49.62%) were noted with primary education 21(15.55%) cases were illiterate while only 15(11.11%) were graduate. 22(16.29%) cases were from poor socioeconomic class, 85(62.96%) were from middle class and 28(20.74%) were from upper class. Table 1

Figure 1 is showing awareness of diabetic patients regarding insulin. Out of 135 patients, 18.51% had complete knowledge regarding insulin, 51.85% had partial knowledge while 29.62% patients don't know.

Majority of patients i.e. 79(58.51%) believe that if once insulin is started, it should be continued forever and it can't be stopped. Only 48(35.55%) patients agree that Self administration of insulin is beneficial. 13(9.62%) patients were in favour that they will use insulin in future if they will be advised. 97(71.85%) patients

believe that Insulin is usually prescribed as a last option in the treatment. Table 2

In this study, only 14.81% patients were under treatment of insulin while 85.19% were not using insulin. Figure 2

Majority of the patients i.e. 105 (77.77%) had got information from family and friends, 11(8.14%) had received information from doctors, 9(6.66%) from literature while 10(7.4%) from media. Table 3

Table No. I: Basic characteristics of the cases n= 135

Basic characteristics	Number / percentages
AGE	
<30 years	27(20.0%)
30-40	35(25.92%)
>40 years	73(54.0%)
EDUCATION	
Illiterate	21(15.55%)
Primary	67(49.62%)
Secondary	32(23.70%)
Graduate	15(11.11%)
SEC	
Poor class	22(16.29%)
Middle class	85(62.96%)
Upper class	28(20.74%)

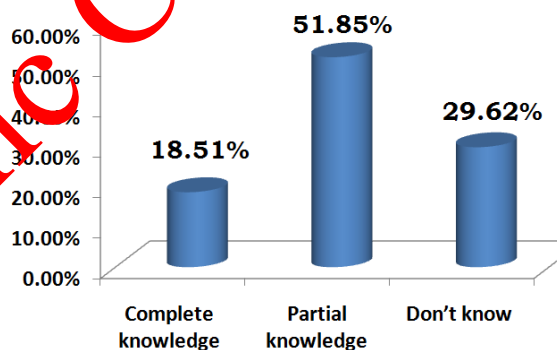


Figure No.1. Cases distribution according to awareness regarding insulin n=135

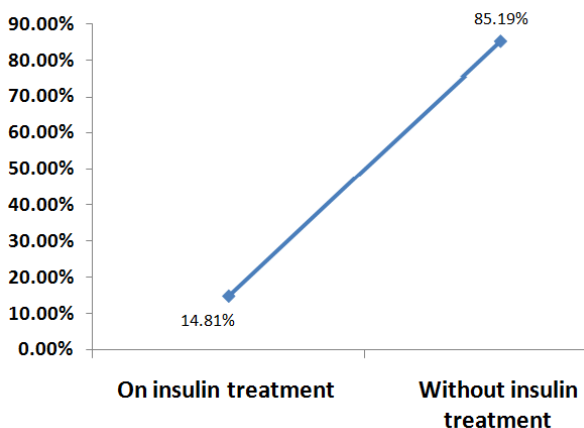


Figure No. 2: Patient's distribution according to insulin administration n=135

Table No.3: Attitude of patients regarding insulin n=135

	Agree	Don't agree
Insulin once started, then can't be stopped	79(58.51%)	56(41.48%)
Self-administration of insulin is beneficial	48(35.55%)	87(64.44%)
In future insulin will use or not	13(9.62%)	122(90.30%)
Insulin is a drug which can control diabetes completely	10(7.4%)	125(92.59%)
Friends and relatives not agree for this treatment	26(19.25%)	109(80.74%)
Insulin is usually prescribed as a last option in the treatment	97(71.85%)	38(28.15%)
Insulin is too expensive	94(69.62%)	41(30.38%)
It is a painful treatment option	125(92.59%)	10(7.40%)

Table No.4: Source of information n= 135

Information sources	Number/percentages
Doctors	31(8.14%)
Friends/family	105(77.77%)
Literature	09(6.66%)
Media	10(7.40%)

DISCUSSION

Treatment of DM basically depends on self-care ability of the cases and their life style modification, therefore education status is considered as an essential part in its treatment. Majority of our patients were unaware about the advantages of insulin. Patients had inadequate information on how to respond the unwanted effects of insulin. Most patients lacked explicit and accurate information on the advantages and disadvantages of insulin. For instance, many of our patients believe that insulin lowers the blood glucose level too much. Inadequate and wrong information enhanced the reluctance to use insulin. Majority of patients in our study i.e. 85.19% were reluctant to start insulin because of myths that it is last resort of treatment and patient will not be able to stop this, once it will be started e.t.c. Same is seen in the study conducted by Yilmaz A.⁴

In our study, when patients knowledge was assessed regarding insulin than only 18.51% had complete knowledge regarding insulin, 51.85% had partial knowledge while 29.62% patients don't know. Similarly Mengesha AB et al⁹ stated that out of 141 cases 55.3% showed average knowledge regarding insulin. Similar results are found in the study conducted by Hadgu Gerenseat al.¹⁰ Our study showed lower knowledge as compare to Indian and Bangalore studies

which were showed 68% and 86.7% respectively¹¹. This difference might be due to some factors as well as high illiteracy rate of study participants, insulin is costly for the poor people, unfavorable suggestions of friends and relatives and insulin self-administration.

In this study 35.55% patients agree that Self administration of insulin is beneficial. Another study conducted by Gawand KS¹² demonstrated that lack of awareness of patients regarding insulin. This may due to away from organized health education and the ignorance of insulin self-administration. Low awareness about insulin injection's site may create complicated events after insulin therapy. Therefore it should be highlighted during diabetes education. Several studies reported that patients had poor knowledge regarding diabetes and self-care treatment¹³. Hence, there is strong knowledge is required regarding diabetes and its self-care management.

The lack of adequate information and frequent misunderstandings contribute to an unwillingness to take insulin. If insulin is essential at any time, it is imperative to change such attitudes, especially in patients with a poor education. Such patients need to be educated on progressive nature of the DM, the role played by insulin, and the mechanism of insulin action. Majority of patients in this study i.e. 58.51% patients believe that if once insulin is started, it should be continued forever. Similarly Surendranath A et al¹⁴ showed that patients were on insulin treatment mostly without adequate knowledge. The perception of insulin as the last resort intimidates patients, when insulin initiation is perceived as the final solution patients may show some degree of reluctance. They fear that insulin would affect their lives negatively¹⁴. In our community insulin is not usually started until diabetes complications occur. Patients' fear could be appreciated from this respect. Patients also disliked the prospect of daily injections. Brunton et al,¹⁵ also found that patients considered insulin to be the drug of last resort, and were thus reluctant to commence treatment. These thoughts were more prevalent in poorly educated patients. Another study conducted by Saleem A shows similar results.¹⁶

In our study majority of the patients i.e. 77.77% had got information from family and friends 8.14% had received information from doctors, 6.66% from literature while 7.4% from media. Patients should be educated about the importance of sugar control and insulin. The goal of education should be to reduce the barriers to use the insulin therapy, and to tackle the reluctance to overcome such barriers, by providing a base of evidence supporting rational decision making. Educational tools should be presented in multiple formats to allow patients to choose materials with which they are comfortable. Continuing medical education programmes and commercial educational initiatives may prove useful. In spite of these interesting

findings, in the present study sample size was limited and from only one hospital, therefore findings of this study are not generalizable to whole country.

CONCLUSION

In the conclusion of this study mostly patients were unaware and showed negative attitude regarding insulin, average patients used insulin regularly, drug cost and unfavorable relative advises are factors to reduced insulin administration. The overall level of awareness of diabetic patients about insulin was found low. Strong policies should be made to create awareness in general population. More big sample size studies are needed to conform these findings.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Prevalence of Lower Lobe TB in Hospitalized Patients

Bacha Amin Khan¹, Abdul Ahad¹, Momin khan¹, Israr-ul-Haq² and Fazal Akbar³

ABSTRACT

Objective: To determine the prevalence of lower lobe tuberculosis in hospitalized patients.

Study Design: Observational study.

Place and Duration of Study: This study was conducted at the Medical Department of Saidu Hospital from 1st Nov 2015 to 1st Nov 2016.

Materials and Methods: Hundred patents with pulmonary tuberculosis were included. Pulmonary tuberculosis was classified as upper, lower, middle lobe and milliary tuberculosis on x-rays findings and other investigation.

Results: Results showed 60% upper lobe, 23% lower lobe, 11% middle lobe and 6% milliray tuberculosis, according to the formula: prevalence out of TB patients % = $\frac{\text{No of patients TB type} \times 100}{\text{total No of TB patients}}$.

Conclusion: we conclude that the lower lobe tuberculosis is quite common and should be considered in the differential diagnosis of lower lobe opacities.

Key Words: Upper Lobe, Lower Lobe, Tuberculosis, Prevalence.

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INTRODUCTION

Tuberculosis is a global health problem. In 2012, 8.6 million people developed TB and 1.3 million died from the disease including TB in HIV patients¹. Our country is belonging to the 22 high burden countries in the world. It is also on the list of high MDR-TB burden countries², which is 4.3% in new cases and 19% in retreatment patients³. TB can involve any part of the body. The most common sites of involvement are the lungs, more often the upper lobes. However, a high index of suspicion is needed to diagnose lower lobe tuberculosis because early diagnosis will decrease morbidity and mortality as well as psychological impact on patients⁴. Pulmonary tuberculosis is caused by mycobacterium tuberculosis as well as atypical mycobacteria. It is an acid fast aerobic bacillus. The characteristic cell wall structure (mycolic acids) makes it resistant to many antibiotics⁵. The development of new diagnostics tests like MTB/RIF assay, line probe assay and DST by liquid medium have helped in the early diagnosis as well as identifying resistant strains⁶. Our concern is to diagnose lower lobe tuberculosis as early as possible, so that effective counseling and early treatment can be initiated.

¹. Department of Medicine / Paediatrics²/ Gastroenterology³, Saidu Group of Teaching Hospital Saidusharif, Swat

Correspondence: Dr. Bacha Amin Khan, Associate Professor of Medicine, Saidu Group of Teaching Hospital Saidu Sharif, Swat.

Contact No: 0301-8067612

Email: bacha66@hotmail.com

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MATERIALS AND METHODS

This observational study was carried out in the department of Medicine Saidu Teaching hospital over a period of 1 year from 1st Nov 2015 to 1st Nov 2016. A total of 100 patients both males (60%) and females (40%) were included. The age was ranging from 12 year to 17 year. After clinical evaluation appropriate investigations were performed and data was recorded on a printed designed Proforma. Fever, cough and shortness of breath were the main presenting complaints. Hemoptysis was present in 20% patients. ESR was more than 60mm in first hour in 80% patients while less than 60mm in first hour in 20% patients. 79% were sputum smear positive for AFB while 21% were sputum Smear negative. The X-rays and CT findings (in selected cases) were used to classify the lobe involvement. 60% were having upper lobe involvement, 23% had lower lobe involvement, 11% have middle lobe involvement and 6% had milliary tuberculosis. Diabetes mellitus was a major risk factor.

RESULTS

- The Results are shown in the Tables 1, 2 and 3.
- The statistical formulae 1, 2 and 3 were used to determine the prevalence.

Formula 1: Prevalence total patients admitted (%) = $\frac{\text{Pulmonary TB patients} \times 100}{\text{Total No of patients admitted}}$.

Formula 2: Prevalence out of TB patients (%) = $\frac{\text{No of patients (TB types)} \times 100}{\text{Total No of TB patients}}$.

Formula 3: Prevalence of type of TB = $\frac{\text{No of patients (TB type lower lobe)} \times 100}{\text{Total No of TB patients}}$.

Table No. 1: Symptoms with percentages

Sr.No.	symptoms	Percentages
1	Cough	100
2	Fever	100
3	Shortness of breath	90
4	Weight loss	60
5	Chest Pain	30
6	Hemoptysis	20
7	Night Sweats	15

Table No.2: Kinds of TB

Site	Upper lobe TB	Lower lobe TB	Middle lobe TB	Milliary TB
Right	30	11	11	6
Left	30	12		
Total	60	23	11	6

Table No.3: TB with percentage

A	B	C	D	E	F
Total	Pulmonary TB	Upper lobe TB	Lower lobe TB	Middle lobe TB	Milliary TB
17869	100	60	23	11	06
Prevalence total patients admitted (%)	0.56	0.34	0.13	0.06	0.03
Prevalence out of TB patients (%)		60.00	23.00	11.00	6.00

DISCUSSION

The purpose of this study was to know the prevalence of lower lobe tuberculosis in hospitalized patients suffering from pulmonary tuberculosis. The young doctors need training and awareness⁷ as well as education of the public. This can be achieved if regular training workshops are arranged and different types of media are used for mass propaganda, keeping in view the WHO learning objectives⁸. Because of the high burden of the disease across the world and especially in Pakistan, it is important that all pulmonary shadows should be thoroughly investigated and high index of suspicion for tuberculosis should be in the mind of health care provider. Early diagnosis will prevent spread of the disease in the community. Patient education at the start of the treatment is essential to adhere to therapy which will minimize the risk of drug resistant TB^{9,10,11}. The national TB program recommends sputum examination for any patient who has a cough of more than two weeks (Presumptive TB). Patients with advanced disease have different radiological manifestations on the X-rays, involving different parts of the lung¹². One third of the world population is harboring the bacilli and are at risk of the disease¹³.

For a poor country like Pakistan where health facilities are not up to the standard, a serological test can also be

relied upon, which has a sensitivity of 73% and specificity of 98%¹⁴. Sputum smears are positive only when there is a large number of bacteria (>100000/ml) in the sputum¹⁵. Sputum cultures are 100% specific but takes long time on solid media and the bacter cultures are very expensive. This sometimes lead to the delay in diagnosis. Fortunately new techniques are coming like DNA probe and polymerase chain reaction¹⁶. Patients who have characteristic radiological features of TB but are smear negative, presents a challenge in the management¹⁷. The incidence and prevalence of lower lobe tuberculosis is increasing maybe because of the early detection due to New diagnostic tools¹⁸. Since it was first reported by Reiner in 1935¹⁹, the clinical features of lower lobe TB are similar to that of pneumonia, so misdiagnosis and delay in diagnosis can occur²⁰, which can have disastrous consequences²¹. Lower lobe TB is more common in the elderly and diabetics because of increased alveolar oxygen pressure in the lower lobes in these patients^{22,23}. Although studies have shown variable reports about the incidence and prevalence i.e. from 6.4% to 18.49%^{24,25}. In our study Diabetes was a major risk factor as in other studies^{26,27}, while in our study the prevalence of lower lobe TB is 23%, which is more than the previous studies. The reason may be relatively small sample of patients, or may be because of improved diagnostic techniques.

CONCLUSION

We conclude that the lower lobe tuberculosis is quite common and should be considered in the differential diagnosis of lower lobe opacities.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Short Term Outcome Between Conventional VS Stapled Hemorrhoidectomy in Patients Having 3rd and 4th Degree Hemorrhoids

Agha Taj Mohammed¹, Bilal Rasool¹, Rasool Bux Behan¹ and Sohail Yousuf²

ABSTRACT

Objective: To compare the short term outcome between conventional hemorrhoidectomy and stapled hemorrhoidectomy in the treatment of 3rd and 4th degree haemorrhoids in the term of postoperative complications, pain and hospital stay.

Study Design: Comparative study

Place and Duration of Study: This study was conducted at the Department Surgery and OPD at Lique Medical University Hospital Hyderabad/Jamshoro with 6 months duration from November 2015 to April 2016.

Materials and Methods: All the cases more than 18 years of age, both genders and diagnosis of with Grade 3 or 4 hemorrhoids were selected. Brief history of duration of illness and examination including proctoscopy were carried out. Patients were randomly divided into two groups, group 1 cases were treated with conventional hemorrhoidectomy, and patients in group two were treated with the stapled hemorrhoidectomy. Surgeries were performed by consultant general surgeons. All information was recorded in Performance.

Results: In this study 64 patients with 3rd and 4th degree hemorrhoids were selected and equally divided in two groups, 32 were underwent conventional hemorrhoidectomy and 32 were underwent stapled hemorrhoidectomy, most common age groups were 31-40 years and 40-50 years in 34.37% and 37.50% patients respectively. Male gender was in majority 70.31%. According to the clinical presentation bleeding was the most common in 43(67.18%) cases following by Discharge, Itching, Prolapse and Others with percentage of 35(54.68%), 21(32.81%), 14(21.87%) and 30(46.87%) respectively. Staples hemorrhoidectomy showed good efficacy as compare to conventional hemorrhoidectomy, as well as moderate and severe pain were significantly more in patients those were underwent conventional haemorrhoidectomy, P-value <0.001. Bleeding and wound infection were high in conventional group p-value 0.01 and hospital stay was also significantly shorter in stapled group from conventional group.

Conclusion: Stapled haemorrhoidectomy is a choice surgical treatment option for 3rd and 4th degree hemorrhoids, this technique showed fewer complications, less postoperative pain and hospital stay as compare to conventional haemorrhoidectomy.

Key Words: Haemorrhoids, Stapled haemorrhoidectomy, Conventional haemorrhoidectomy

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INTRODUCTION

Haemorrhoidal disease is commonest anorectal disease, affecting, in various forms, almost 50% of people over the age of 50 years, and is one of the surgical problems to which there is still no unanimity of opinion as to the best form of surgery.¹ The most important aspect in the diagnosis of hemorrhoids is to exclude other more life-threatening conditions and bleeding from the rectum.²

¹. Department of Surgery, LUMHS, Hyderabad, Jamshoro.

². Department of Surgery, National Medical Center, Hyderabad.

Correspondence: Dr. Sohail Yousuf, Assistant Professor, Department of Surgery, National Medical Center, Hyderabad. Contact No: 0333-2700192 Email: dr.sajidarain@gmail.com

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Symptomatic hemorrhoids are no longer as agonizing as before because of the new modalities of operation that require shorter hospital stay and allowing patients to return to work earlier.³ During years, many modifications have been created to operation of excision of hemorrhoids consuming scissors the outcome improvement, particularly postoperative pain. Milligan-Morgan conventional hemorrhoidectomy is commonly practiced procedure and is considered through to be the current standard for the haemorrhoidal surgical treatments.⁴ It is a traditional effective approach; however, it is frequently accompanied with big prevalence of the complications, like as hemorrhage, urinary retention, and postoperative pain.⁵ Surgical treatment⁶ is considered being the best therapeutic modality for 3rd and 4th degree haemorrhoidal disease. Open and closed haemorrhoidectomy are the mostly used ones among

the traditional options. Both are favored by surgeons due to their low post-operative complications plus better symptomatic relief. But post operatively both results in severe pain.⁷ On other hand it is suggested that Stapled technique as an effective and valid option in the treatment of 3rd and 4th degree hemorrhoids with excellent patient's satisfaction.⁸ In the different studies different efficacy is reported of these both procedures, therefore purpose of present study is to compare efficacy between conventional and stapled hemorrhoidectomy in the term of postoperative complications, pain and hospital stay at LUMHS Jamshoro

MATERIALS AND METHODS

This comparative study had carried out department of general surgery at Liaquat medical university hospital Hyderabad/Jamshoro with 6 months duration from November 2015 to April 2016. All the cases more than 18 years of age, both genders and diagnosis of with Grade 3 or 4 hemorrhoids were selected. All the cases with Grade 1 or 2 hemorrhoids, coexisting perianal disease, previous anal surgery and with severe comorbidities like uncontrolled diabetes mellitus, chronic HCV and HBV were excluded. Subjects were selected through outpatient department OPD. Brief history of duration of illness and examination including proctoscopy were carried out and written consent was taken. All the necessary laboratory investigations including radiology were carried out. Patients were randomly divided into two groups, patients in group one were treated with conventional hemorrhoidectomy and patients in group two were treated with the stapled hemorrhoidectomy. Surgeries were performed by consultant general surgeons. All the data regarding age, sex, duration of disease, disease grade and postoperative complications was documented. Prophylactic antibiotic and painkillers were given equally preoperatively. All the data will be entered in the Performa. Data was analyzed in SPSS version 16.0

RESULTS

In this study 64 patients with 3rd and 4th degree hemorrhoids were selected and equally divided in two groups, 32 were underwent conventional hemorrhoidectomy and 32 were underwent stapled hemorrhoidectomy, most common age groups were 31-40 years and 40-50 years in 34.37% and 37.50% patients respectively. Male gender was in majority 70.31% as compare to females 29.68%. Mostly cases were noted with less than 3 years of hemorrhoids duration. Table:1

according to the clinical presentation bleeding was the most common in 43(67.18%) cases following by Discharge, Itching, Prolapse and Others with percentage of 35(54.68%), 21(32.81%), 14(21.87%) and 30(46.87%) respectively. Table:2

In our data 3rd degree haemorrhoids was found in majority of the cases 62.50% as compare to 4th degree in 37.50% of the cases. Fig:1

Staples hemorrhoidectomy showed good efficacy as compare to conventional hemorrhoidectomy, as well as moderate and severe pain were significantly more in patients those were underwent conventional haemorrhoidectomy, P-value 0.002. Bleeding and wound infection were high in conventional group p-value 0.01 and hospital stay was also found shorted significantly in stapled procedure as compare to conventional procedure. Table:3

Table No.1: Basic Characteristics Of Patients n=64

Basic Characteristics	Numbers	%
Age groups		
18-30 years	10	15.62%
31-40 years	22	34.37%
40-50 years	24	37.50%
>50 years	08	12.50%
Gender		
Male	45	70.31%
Female	19	29.68%
Duration of disease		
<3 years	40	62.50%
>3 years	24	37.50%

Table 2: Clinical presentation of patients n=64

Clinical presentation	Numbers (%)
Bleeding	43(67.18%)
Discharge	35(54.68%)
Itching	21(32.81%)
Prolapse	14(21.87%)
Others	30(46.87%)

Table No.3: Patients distribution according to postoperative complications and hospital stay n=64

Complications and hospital stay	Haemorrhoidectomy		
	Conventional N=32	Stapled N=32	P value
Postoperative pain			
No	05(15.62%)	12(37.50%)	0.002
Mild	12(37.50%)	13(40.62%)	
Moderate	08(25.0%)	05(15.62%)	
Severe	07(21.87%)	02(06.25%)	
Bleeding	04(12.50%)	01(03.12%)	0.02
Wound infection	03(09.37%)	00	
Urinary retention	02(06.25%)	01(03.12%)	
Hospital stay			
Less than 2 days	20(62.50%)	28(87.50%)	0.001
More than 2days	12(37.50%)	04(12.50%)	

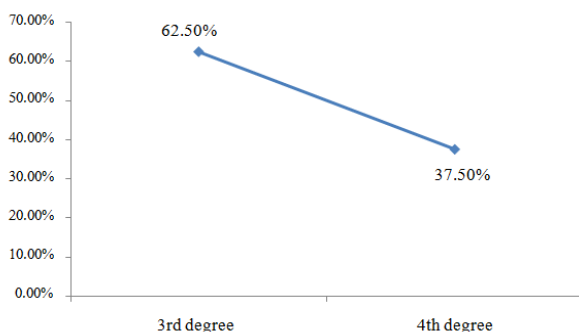


Figure No.1: cases distribution according to degree of haemorrhoids n=64

DISCUSSION

Haemorrhoids is a frequently observed disease in surgical practice and various non-surgical and surgical treatments are available. However in this study two surgical techniques conventional and stapled hemorrhoidectomies were compared in the treatment of 3rd and 4th degree hemorrhoids, and we found good efficacy as; low rate of moderate and severe pain, less complications and short hospital stay in stapled groups cases as compare to conventional groups cases. Similarly on other hand Chalkoo M et al⁹ concluded that stapled hemorrhoidectomy is the safe and valid surgical procedure as compare to traditional Milligan-Morgan procedure, it is very easy in perform well tolerated and very cost effective than the conventional procedure. Kulkarni S et al¹⁰ stated that stapled Haemorrhoidectomy is less painful with shorter duration of hospital stay and resumption of daily activity is faster than the open haemorrhoidectomy. In this study young aged and middle aged peoples were found majority as well as most common age groups were 31-40 years and 40-50 years 44.37% and 37.50% patients respectively. Kulkarni S et al¹⁰ also found male in the majority as, 78% were males and 22% females in open haemorrhoidectomy, 90% were males and 10% females in stapled haemorrhoidectomy. In our study Male gender was in majority 70.31% as compare to females 29.68%. Qureshi MSet al¹¹ reported that men to women ratio 3:1 with the median age of 39 years.

According to the clinical presentation bleeding was the most common in 43(67.18%) cases following by Discharge, Itching, Prolapse and Others with percentage of 35(54.68%), 21(32.81%), 14(21.87%) and 30(46.87%) respectively. Similar finding were also found in the study of ABID KH Jet al⁸. In our data 3rd degree haemorrhoids was found in majority of the cases 62.50% as compare to 4th degree in 37.50% of the cases. Whereas ABID KH Jet al⁸ reported that 17(68%) cases of third degree and 8 (32%) cases of fourth degree hemorrhoids.

Staples hemorrhoidectomy showed good efficacy as compare to conventional hemorrhoidectomy. Pain is the very important variable for hemorrhoidectomies as well as in our study moderate and severe pain was significantly more in patients those were underwent conventional haemorrhoidectomy, P-value 0.002. Similarly Kulkarni S et al¹⁰ reported post-operative pain according to Visual Analog score was 1.9, scores lesser for stapler haemorrhoidectomy compared to open haemorrhoidectomy. In a study by Palimento D et al¹² mentioned that pain according to visual analog score was lower in stapler haemorrhoidectomy versus open haemorrhoidectomy. Bhandari RS et al¹³ also proved lesser post-operative pain in the stapled group. The reduction in pain is attributed to the procedure being carried out above the dentate line which has no nerve endings carrying pain. In our series bleeding and wound infection were high in conventional group p-value 0.01. ABID KH Jet al⁸ reported bleeding in 100% cases. Kulkarni S et al¹⁰ reported that complications like post-operative bleeding, post-operative urinary retention and anal incontinence were commonest and almost same in both the groups p value 0.46.

In our study Hospital stay was also significantly less in the patients were underwent stapled procedure as compared to conventional group P-value 0.001. Kulkarni S et al¹⁰ reported that post-operative hospital stay was less by 0.6 score for stapler haemorrhoidectomy compared to open haemorrhoidectomy which is statistically significant with $p < 0.001$. Bikchandani J et al¹⁴ demonstrated that mean hospital stay of 1.24 days in stapler haemorrhoidectomy compared to 2.76 days in open haemorrhoidectomy with a $p < 0.001$. Khan NF et al¹⁵ mentioned that hospital stay found significantly less in stapled group 3.37 ± 2.2 as compare to open haemorrhoidectomy 2.03 ± 0.81 , $p = 0.003$. Bhandari R Set al¹³ stated that the post-operative hospital stay was definitely less for stapled haemorrhoidectomy compared to open haemorrhoidectomy..

CONCLUSION

We concluded that Stapled haemorrhoidectomy is a choice surgical treatment option for 3rd and 4th degree hemorrhoids, this technique showed fewer complications, less postoperative pain and hospital stay as compare to conventional haemorrhoidectomy.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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To Assess the Causes of Implant Failure in Treatment of Closed Femoral Diaphyseal Fractures

Failure in Treatment of
Closed Femoral
Diaphyseal Fractures

Abbas Memon, Faheem Ahmed Memon, Niaz Ahmed Kerio and Muhammad Yahya Memon

ABSTRACT

Objective: To evaluate the responsible factors of implant failure in treatment of closed femoral diaphyseal fractures.

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Department of Orthopaedic Surgery, LUMHS, Jamshoro and Hyderabad from August 2013 to July 2015.

Materials and Methods: 30 Patients with presentation of implant failure in treatment of closed femoral diaphyseal fractures were selected. Causes of implant failure were noted. All the data was recorded in the proforma.

Results: Total 30 cases with implant failure were included. Mean age was 45.5 ± 10.3 years. Male were in majority 26(86.6%) and female were 4(13.4%). 76.7% cases had right sided and 23.3% cases had left side fracture. Responsible factors of implant failure were observed in all patients. from factors poor implant quality was the most common in 50% of the cases following by poor fixation technique in 16.6%, wrong size of the implant was in 6.6% patients, noncompliance of instruction were noted in 23.3% cases and only in 3.3% cases implant failure due to inadequate weight bearing.

Conclusion: We concluded that poor implant quality was commonest responsible factor for the implant failure in treatment of closed femoral diaphyseal fractures

Key Words: Closed femur diaphyseal fracture, implant failure, responsible factors

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INTRODUCTION

Femoral shaft fracture is the commonest fracture experienced in orthopedic practice.¹ Despite expanded comprehension of biomechanics and design of implant, femoral shaft fracture's nonunion of keeps on delay of treatment of these wounds. This inconvenience introduces a troublesome treatment challenge for the specialists. There are a few techniques for treatment for non-union femoral diaphyseal which were at first treated with an IMN. This incorporates nail dynamization, change nailing, fixation of plate, grafting of bone, and addition of bone.² Hygienic nonunion and low complicated cases well respond to the Ilizarov management.³ Metals are the material of decision for manufacture of implant in light of the fact that they offer big stiffness, quality and great biocompatibility. To accomplish this point alongside development in the procedures of use of implant, the exceptional accentuation was on the change of metallurgy of

implant to stay away from issues confronted with utilization of normal steel made implants.⁴ Material of implant utilized for internal fixation must affirm to certain essential necessities like solid capacity and insignificant side effects. implants of orthopedic are mechanical artificial devices, while mounted skeletal arrangement of the body of human are presented not exclusively to stress of the muscular strengths of limbs yet presented to the living cells, tissues and organic liquids which are alterable as well as an unfriendly domain for the implant survivals.⁵ Femoral shaft fractures among the most widely recognized fractures experienced in the orthopedic practice. Since the femur is long bone of the bodies and one of the main load-bearing bones of lower extremities, fractures may cause about delayed morbidities and broad handicap unless treatment is suitable. Fracture of the femur shaft frequently are the consequence of big-energy injury and might be related with numerous injuries type.⁶ Many procedures are presently accessible for the treatment of it, and orthopedic specialist must know about disadvantages, limitations and advantages of each to choose the best possible treatment for every patient. Fracture's type and the area, the level of the comminution, patient's age, social and economical conditions of the cases and different elements may impact the technique for treatment.^{7,8} One examination regarding implant failure at AAS lab of central capability division of the Pakistan Institute of Nuclear

Department of Orthopaedic Surgery, Dost LUMHS Jamshoro.

Correspondence: Dr. Faheem Ahmed Memon, Assistant Professor, Department of Orthopaedic Surgery, Dost LUMHS Jamshoro.

Contact No: 0313-2851728

Email: dr.sajidarain@gmail.com

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Science and Technology (PINST) obviously demonstrated that locally made implant are substandard without best quality and can't fit in with the require able implants properties.⁹ Aside from nature of implant, the imperative part of implant utilize is choice of the implant and method of utilization in various fractures as per suggested principles.¹⁰⁻¹³ The goal of this study was to assess the reasons for failure of the implants in management of femoral diaphyseal fractures.

MATERIALS AND METHODS

This comparative study had carried out department of general surgery at Liaquat medical university hospital Hyderabad/Jamshoro with 6 months duration from November 2015 to April 2016. All the cases more than 18 years of age, both genders and diagnosis of with Grade 3 or 4 hemorrhoids were selected. All the cases with Grade 1 or 2 hemorrhoids, coexisting perianal disease, previous anal surgery and with severe comorbidities like uncontrolled diabetes mellitus, chronic HCV and HBV were excluded. Subjects were selected through outpatient department OPD. Brief history of duration of illness and examination including proctoscopy were carried out and written consent was taken. All the necessary laboratory investigations including radiology were carried out. Patients were randomly divided into two groups, patients in group one were treated with conventional hemorrhoidectomy, and patients in group two were treated with the stapled hemorrhoidectomy. Surgeries were performed by consultant general surgeons. All the data regarding age, sex, duration of disease, disease grade and postoperative complications was documented. Prophylactic antibiotic and painkillers were given equally preoperatively. All the data will be entered in the Performa. Data was analyzed in SPSS version 16.0

RESULTS

Total 30 cases with implant failure in the treatment of close Femoral diaphyseal fractures were incorporated. Mean age $\pm$ SD were 45.5 ± 10.3 years. Table: 1. Male were in majority 26(86.6%) and 4 (13.4%) were female. Table: 1

In this study history of Road Traffic Accidents was most common in 25(83.34%) patients. Fig:1 23(76.7%) cases having implant failure at right side and 07(23.3%) cases having left sided implant failure Fig:2 In this study responsible factors for implant failure were noted in all cases. These factors were found as poor fixation techniques were noted in 5(16.6%), wrong implant size were noted in 02(6.6%), poor quality of the implant "locally made" was noted in 15(50.0%), non-compliance instructions were in 07(23.3%) cases and only 1(3.3%) cases was found with inadequate weight bearing protocols. Table 2

Table No.1. Age and gender distribution of patients n=30

	Frequency (%)
Age (Mean $\pm$ SD)	45.5 $\pm$ 10.3 years
Gender	
Male	26(86.6%)
Female	04(13.4%)

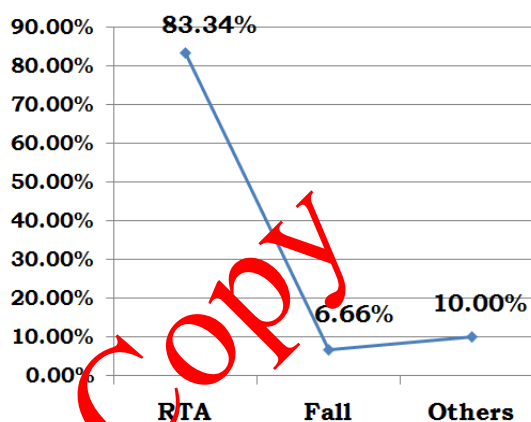


Figure No.1. Causes of fractures n=30

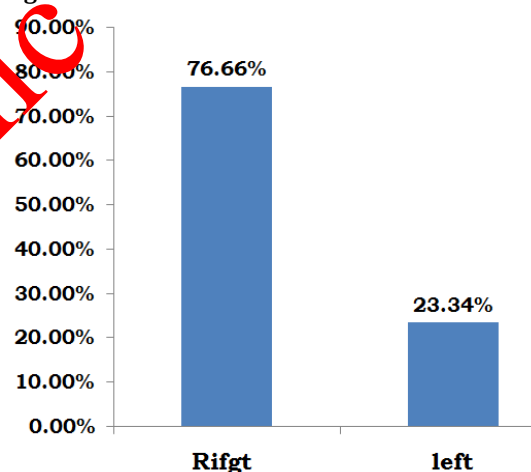


Figure No. 2: Site of fractures n=30

Table No.2. Age and gender distribution of patients n=30

Responsible factors of implant failure	Frequency (%)
Poor fixation	05(16.6%)
Implant improper size	02(06.6%)
Poor quality of implant	15(50.0%)
Non-compliance of the instructions	07(23.3%)
Weight bearing inadequate protocols	01(03.3%)

DISCUSSION

Failure of the implant mostly arises due to loosening of internal fixation or its breakage, because metal plates are not flexible as bones, metallic plate screwing stiffen

the bones it and create (stress riser) on the each end point of plate.¹⁴ Long bone fracture mostly occurs in young age. In this study mean age of the cases was 45.5 ± 10.3 years. While Wiss et al¹⁰ reported mean age was 29 years. Series of mean age 28 years in cases with femoral shaft fractures stated. This difference of the mean age in our study and other may because in our study some old age peoples were comes with history of fall. In our findings male were in majority 26(86.6%) as compare to women 4(13.4%). Similarly Ogbemudia AO et al¹⁵ reported that male were in the majority. Majority of the male patients were because male were more involve in the outdoor activities. In this study history of Road Traffic Accidents was most common in 25(85.0%) patients. In studies of Johnson and Greenberg¹⁷ reported that right side was mostly affected. Similarly Wisset al¹⁰ of reported that fractures were mostly found at right side. As well as in our study right sided was found most common.

In this study responsible factors for implant failure were noted in all cases. These factors were found as poor fixation techniques were noted in 5(16.6%), wrong implant size were noted in 02(6.6%), poor quality of the implant "locally made" was noted in 15(50.0%), non-compliance instructions were in 07(23.3%) cases and only 1(3.3%) cases was found with inadequate weight bearing protocols. Peivandi MT et al¹⁶ stated that the commonest cause involve in implant failure as itrogenic causes in 4% cases, non-compliance with post-operative instructions in the 34.8% of the cases and poor implants quality was in 60.9% cases.¹⁶ Sharma et al¹⁸ demonstrated that commonest cause of implant failure was the traumatic occurrence before complete fractures healing. Vallier et al¹⁸ demonstrated that 6 patients with implants failure out of 46 cases treated by LCP-condylar plate by the attention to bone loss or the average comminution as the considerable inclination to failure of implant. Ogbemudia AO et al¹⁵ reported that the probability of over the top body weight and early weight bearing as hazard components for implant failure. A planned randomized review is important to evaluate the genuine extent of the impact of each of these variables on the rate of implant failure and to enable the worthy measurable deduction to be acquired.¹⁵ In some other studies stated that implant failure may cause the populace to delay the treatment of fractures in the setting where support of traditional bonesetters is still very up.^{19,20}

CONCLUSION

We concluded that poor implant quality was commonest responsible factor for the implant failure in treatment of closed femoral diaphyseal fractures. More randomized studies are required to conform our findings.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency and Severity of Thrombocytopenia in Children with Malaria Caused by Different Species of Plasmodium

Bhag Chand Lohano¹, Fozia² and Chetan Das¹

ABSTRACT

Objective: To determine the frequency and severity of thrombocytopenia in malaria.

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at the Department of Pediatrics, Liaquat University Hospital, Hyderabad from 24th June 2014 to 23rd December 2014.

Materials and Methods: All children presenting in pediatrics department of Liaquat University Hospital Hyderabad with fever ($>101^{\circ}\text{F}$) or history of fever ($>101^{\circ}\text{F}$) for 3 days duration were evaluated for malaria parasite through thick and thin blood smear. Then all malaria positive patients were assessed for platelet count. Thrombocytopenia (if present) was classified according to the reference ranges and categories.

Results: Total 154 children of malaria were included in this study mean age $\pm$ SD (range) was 5.76 ± 3.63 (6 months to 12 years). 118 cases were plasmodium vivax positive while 34 were suffering from plasmodium falciparum malaria, whereas 02 children had mixed (p. vivax and p. falciparum) infection. Out of 154 children of malaria, 100(65.0%) had decreased platelets count. Of these, 71(71.0%, $n = 100$) had mild thrombocytopenia, 26(26.0%, $n = 100$) had moderate thrombocytopenia, while severe thrombocytopenia was observed in 3(3.0%, $n = 100$).

Conclusion: This study concluded that various degree of thrombocytopenia is common with malaria which if severe then may be associated with prolonged bleeding time leading to life threatening bleeding. Early diagnosis and prompt precautions and management by intervention such as immediate transfusion of platelets can prevent fatal outcome.

Key Words: P. falciparum, p. vivax, malaria, platelets, thrombocytopenia

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INTRODUCTION

Malaria has been recognized as a human disease for thousands of years. Over 40% of world population lives in malaria endemic area including South East Asia, India, Pakistan, Bangladesh, Africa, areas of middle east, Central and South America with significant economic burden. Pakistan being a part of endemic belt has an incidence of one case per thousand populations. The reported prevalence of malaria in Pakistan is 43% and such high prevalence is due to extreme poverty and lack of education regarding preventive measures. In Pakistan estimated fifty thousand deaths each year mostly in infants, children and pregnant women with maximum mortality are associated with Plasmodium falciparum malaria.^{1,2}

Department of Pediatrics / Anatomy², Liaquat University Hospital, Jamshoro, Sindh.

Correspondence: Dr. Chetan Das, Assistant Professor, Department of Pediatrics / Anatomy², Liaquat University Hospital, Jamshoro, Sindh.

Contact No: 0300-2960920

Email: drchetandas@hotmail.com

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Malaria is caused by the bite of a female Anopheles mosquito that is infected with species of the protozoan genus Plasmodium. There are four most common species affecting humans as P falciparum, P vivax, P. ovale, P. malariae. Considering the gravity of the complications of this potentially treatable disease, it is important to diagnose and treat this disease timely. Microscopy remains the Gold standard for the diagnosis of malaria. All clinically suspected malaria patients must be diagnosed by repeated smear examinations or rapid antigen detection tests.^{3,4}

Hematological abnormalities have been observed in patients with malaria, which ranges from asymptomatic thrombocytopenia to fulminant disseminated intravascular coagulation (DIC), anemia and thrombocytopenia being the most common.^{5,6,7}

The mechanism of thrombocytopenia in malaria is unknown; postulated mechanisms reported is macrophage activation leading to platelet destruction, increased levels of cytokines, immunological destruction due to antiplatelet IgG and oxidative stress. It has been observed that 70% patients infected with either P. vivax or P. falciparum malaria develop thrombocytopenia during infective period, whereas regarding the severity; the mild thrombocytopenia was observed in 68% patients, moderate thrombocytopenia

in 24% patients and severe thrombocytopenia in 8% patients.^{8,9}

Severity of Thrombocytopenia:⁷

1. Mild thrombocytopenia <150,000 to >50,000/l.
2. Moderate thrombocytopenia <50,000 to >20,000/l.
3. Severe thrombocytopenia <20,000/l.

Therefore this study is designed to evaluate the frequency and severity of thrombocytopenia in malarial patients, which if associated with prolong bleeding time then become major medical emergency, require immediate platelet transfusion for preventing fatal outcomes.

MATERIALS AND METHODS

This Cross sectional descriptive study was conducted in Department of Pediatrics, of Liaquat University Hospital Hyderabad from 24th June 2014 to 23rd December 2014. A total 154 patients of malaria from non - probability purposive sampling were selected.

Inclusion criteria:

- The age ranges 06 months to 12 years (as malaria in children <6 months age is less frequent and secondly thrombocytopenia in children <6 months age is mostly due to sepsis, whereas >12 year of age children were out of pediatric range.
- Fever (>101 °F) at the time of presentation or history of fever (>101 °F) for 3 days duration and positive malarial parasites by thick or thin blood smears
- Both genders.

Exclusion criteria:

- Patients who had taken anti-malarial therapy.
- Patients with typhoid fever, prior history of tuberculosis, Diabetes mellitus, connective tissue disease, chronic liver disease, neoplasm (because they represent as chronic fever cases).
- Known case of idiopathic thrombocytopenic purpura, known case of aplastic anemia, myelodysplastic syndrome, osteopetrosis.
- Patients on drug therapy (fansidar, septran, thiazides and chemotherapeutic agents that can lead to thrombocytopenia).

Data Collection Procedure: After approval by ethical committee of Liaquat University of Medical and Health Sciences and written informed consent from attendant of the patients regarding purpose and procedures, this study was carried out. All children presenting in pediatric department of Liaquat University Hospital Hyderabad with fever (>101 °F) measured via mercury containing standard thermometer which was kept in an armpit for a minimum of two minutes by a trained staff nurse or history of fever (>101 °F) for 3 days duration and fulfilled the inclusion as well as exclusion criteria of the study were evaluated for malarial parasite through thick and thin blood smear by using a standard sterile needle (blood Lancet) skin was punctured at

fingertip of ring finger and a drop of blood was used to prepare thick and thin blood film by expert laboratory technician. Then all malaria positive subjects were assessed for platelet count by taking 2ml venous blood in complete blood picture bottle and sent to pathology laboratory for analysis through Medionic cell counter method. Thrombocytopenia (if present) was classified according to the reference ranges and categories. All the data of the study were recorded on the pre-designed proforma.

Data Analysis: The data of all patients were entered and analyzed in the statistical program SPSS version 16.0. Qualitative data (frequency and percentage) such as gender, age in groups, species of plasmodium, frequency of thrombocytopenia and its severity were presented as n (%). Mean and standard deviation of continuous variables like age in years, platelet counts was calculated.

RESULTS

One hundred and fifty four patients of malaria were enrolled in this study based on inclusion and exclusion criteria. Males were 95 (61.7%) and 59(38.3%) were female shown in Table No. 1

Of these 154 children of malaria, mean age + SD (range) was 5.76 + 3.63 (6 months to 12 years). Majority of the children i.e. 58(37.7%) were seen in the age group 1 to < 5 years, 55 (35.7%) were ranged from 5 to < 10 years, 36(23.4%) were observed between 10 to 12 years of age group and only 05(3.2%) children were 6 months to <1 year of age. Table No. 2

Out of 154 cases, 118 cases were plasmodium vivax positive, 78(66.1%) were male and 40(33.9%) were female. Thirty four children were suffering from plasmodium falciparum malaria, 16(47.1%) were male and 18(52.9%) were female whereas 02 children had mixed (p. vivax and p. falciparum) infection, 1(50.0%) was male and 1(50.0%) female. Table No. 3

Out of 154 children of Malaria, 100(65%) had decreased platelets count indicative of thrombocytopenia, 59 (59%) were male and 41 (41%) were female. 54 had normal platelets count. Out of 100 thrombocytopenic patients, 71(71.0%) were found mild thrombocytopenic.

Of these, 48(67.6%) were suffering from p. vivax, 22(31.0%) had p. falciparum malaria and 1 (1.4%) had mixed infection (p. vivax and p. falciparum). 26(26.0%) had moderate thrombocytopenia. Of these, 18(69.2%) children were p. vivax positive, 7(26.9%) were p. falciparum positive and only 1(3.8%) child had mixed infection (vivax and falciparum). Severe thrombocytopenia was observed in 3(3.0%). Of these, 2(66.6%) were p. falciparum and 1(33.3%) were p. vivax malarial children. Table 4

Majority of the thrombocytopenia was observed in 67(67.0%) children of p. vivax while 31(31.0%) children had p. falciparum malaria, 2(2.0%) children

had mixed (p. falciparum + p. vivax) malaria. In vivax malaria, mild and moderate degree of thrombocytopenia was more common whereas in falciparum malaria severe thrombocytopenia was commonly seen. In the present study, out of 118 cases of p.vivax, 67(56.8%) had thrombocytopenia while out of 34 cases of p. falciparum malaria, 31(91.2%) had thrombocytopenia and 2 children had mixed infection (vivax + falciparum), both had thrombocytopenia. Table 5.

Table No. 1: Gender Distribution (n = 154)

Gender	Frequency	Percentage
Male	95	61.7%
Female	59	38.3%

Table No. 2: Frequency of age groups of study participants (n = 154)

Age groups	Frequency	%age	Mean + SD
6 months to < 1 year	05	3.2%	0.60 + 0.29
1 to < 5 years	58	37.7%	2.32 + 1.0
5 to < 10 years	55	35.7%	6.42 + 1.38
10 to 12 years	36	23.4%	11.0 + 0.86

Table No.3: Species of plasmodium in gender (n = 154)

Malaria	Gender		Total
	Male n = 95	Female n = 59	
Vivax	78(66.1%)	40(33.9%)	118(100.0%)
Falciparum	16(47.1%)	18(52.9%)	34(100.0%)
Vivax & Falciparum	1(50.0%)	1(50.0%)	2(100.0%)

Table No.4: Plasmodium malaria in patients with and without thrombocytopenia (n = 154)

P. Malaria	Thrombo-cytopenia n = 118	Without thrombo-cytopenia N = 54	Total
Vivax	67(56.8%)	51(43.2%)	118(100.0%)
Falciparum	31(91.2%)	3(8.8%)	34(100.0%)
Vivax & Falciparum	2(100.0%)	0	2(100.0%)

Table No.5: Severity of thrombocytopenia with plasmodium malaria (n = 154)

P. Malaria	Mild n = 71	Moderate n = 26	Severe N = 3	Total
Vivax	48(67.6%)	18(69.2%)	1(33.3%)	67(67.0%)
Falciparum	22(31.0%)	7(26.9%)	2(66.7%)	31(31.0%)
Vivax & Falciparum	1(1.4%)	1(3.8%)	0	2(2.0%)

DISCUSSION

Malaria affects an estimated 300 million people and causes more than a million deaths per year worldwide.

Acute malaria is often associated with mild or moderate thrombocytopenia in non-immune adults.¹⁰

Thrombocytopenia occurs in 60-80% cases of malaria and is considered to be an important predictor of severity in childhood malaria. Finding of thrombocytopenia is an important clue to the diagnosis of malaria in patients with acute febrile illness in endemic areas as suggested by previous investigator.^{11, 12, 13}

In this study, 61.7% were male and 38.3% were female similar results were seen in the study conducted by Jalal-Ud-Din et al in Ayub Medical College, Abbottabad who revealed that male children had higher incidence of malaria than female (male = 71.25% vs. female = 28.75%); probable reasons is because males are having more exposed to mosquito bite than female.¹⁴

In this series, the mean age of children was 5.76 years (n = 154) which is comparable to study conducted by Katira B et al. who reported 5.1 years.

Out of 154 cases, 118(76.6%) were plasmodium vivax positive 78(66.1%) were male and 40(33.9%) were female. Thirty four(22.1%) were suffering from plasmodium falciparum malaria, 16(47.1%) were male and 18(52.9%) were female whereas 02(1.3%) children were mixed (p. vivax and p. falciparum) positive, 1(50.0%) was male and 1(50.0%) female. Yasinzai MI et al reported that P. vivax was present in 88.69% cases, 73.20% were male and 26.80% were female, whereas infection of P. falciparum was observed in 11.30%, 74.5% in male and 25.5% in female. In the present study, the results of p. vivax malaria correlate well to the study of Yasinzai MI et al but the difference of p. falciparum malaria may be because of large sample size of population and study duration.^{15,16}

In the present study, the incidence of P. vivax was observed to be higher (76.6%, n = 154) as compared with that of P. falciparum (22.1%, n = 154). Similarly, Yasinzai, M.I et al. found higher incidence of p. vivax 88.69% and p. falciparum 11.3%. Jan and Kiani (2001) while studying malarial parasites in Kashmiri refugees settled in Muzaffarabad reported high incidence of P. vivax than of P. falciparum also reported same. Jalal-Ud-Din et al. showed the same observation i.e. Plasmodium vivax was 92.21% and Plasmodium falciparum was 7.79%^{14,16,17}

In this study 100(65.0%) children suffering from malaria showed some degree of thrombocytopenia these observations are comparable with studies done by Ansari S. et al. who revealed 69.18%, similarly, Memon AR et al. in their study conducted in Dow University of Health Sciences & Civil hospital Karachi

showed 70% thrombocytopenia. In another cross sectional study of Shaikh QH et al. conducted in JPMC Karachi, thrombocytopenia was 80.6%.^{10, 12, 18}

Khan SJ et al. reported 58.0% cases of thrombocytopenia.⁷⁴ Mehmood and Yasir observed 58.0%.^{19, 20} In this study, higher prevalence of thrombocytopenia was seen in male than female i.e. (59% vs. 41%) out of 100 cases. Similarly, Phulpoto JA et al. showed 74% male in majority than 26% female, whereas Memon AR revealed that 76% male and 24% female patients had thrombocytopenia. These results indicated that the thrombocytopenia is more common in male than female cases of malaria.^{4, 10}

Another observation in the present study was that out of 118 cases of *P. vivax*, 67 (56.8%) had thrombocytopenia while Morales et al. reported percentage of patients (44%) affected by *P. vivax* malaria while in study of Shaikh QH et al.⁷⁸ showed 93.33% thrombocytopenic in *P. vivax* cases. Abro AH et al. documented the figure of 81.0% thrombocytopenia in *P. vivax* cases. Difference in observations may be due to difference in study populations, environmental, sample size, duration of study and other social factors.^{21, 22, 23}

Out of 34 cases of *P. falciparum* malaria, 31 (91.2%) children had thrombocytopenia. Memon AR et al. accounted 93% of thrombocytopenia in patients having malaria due to *P. falciparum*. Another observation made by Abro AH showed 87% thrombocytopenia in cases of *P. falciparum* malaria whereas Mahmood A et al. reported the 75.18% percentage of thrombocytopenia in *P. falciparum* malaria. These results nearly correlate to the present findings.^{10, 20, 23}

The results of the present study revealed that mild thrombocytopenia was in 71.0% out of 100 cases of thrombocytopenia, moderate thrombocytopenia 26.0% and severe thrombocytopenia was in 3.0% children. However, the similar results were seen in the study of Memon AR i.e. 70% mild, 22% moderate and 8% severe thrombocytopenia, these results nearly correlate to the present study.¹⁰

CONCLUSION

This study concluded that mild to moderate and some degree of severe thrombocytopenia is common with malaria which may lead to prolong bleeding time, which is a medical emergency and can be life threatening e.g. intracranial bleeding, so timely recognition by assessing bleeding time in each thrombocytopenic malaria patient and management by intervention such as immediate transfusion of platelets can prevent fatal outcome.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Association of Low Vitamin D Levels with Acute Ischemic Stroke

Azhar Saeed¹, Mazhar Ali Naqvi², Muhammad Azhar Shah⁴ and Saadia Shahzad³

ABSTRACT

Objective: To determine association between low vitamin-D levels and acute ischemic stroke in patients presenting in tertiary care hospital.

Study Design: Case control study.

Place and Duration of Study: This case conducted at the Services Hospital, Lahore, Multan Medical and Dental College Multan and Akhtar Saeed Medical and Dental College, Lahore from 28-05-13 to 28-12-13.

Materials and Methods: This study included 200 subjects and divided into 2 groups (cases and controls). Blood sample for Vitamin-D levels were collected and sent to institutional laboratory and results were followed to determine association of low vitamin-D levels with acute ischemic stroke.

Results: Low vitamin-D levels were found in 85% patients of stroke, and in 70% of normal subjects ($p=0.009$; odds ratio 2.42). Mean vitamin D levels for cases were 35.33 (minimum 12 and maximum 110) and 43.55 (minimum 11, maximum 132) for control group.

Conclusion: Frequency of low vitamin-D levels is higher in stroke patients compared to normal subjects in our population. So, it is recommended to treat vitamin-D deficiency adequately in order to reduce the risk of stroke.

Key Words: Stroke, Vitamin-D deficiency, Acute ischemic stroke

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INTRODUCTION

Stroke is one of the most common causes of death worldwide and results in a large proportion of physical disability.¹ Data shows that 20% of stroke survivors require institutional care after 3 months and 15%-30% are permanently disabled.² Prevalence of stroke is high in Asians.³

Several independent risk factors of ischemic stroke have been recognized. The most common of these include hypertension, diabetes mellitus, smoking, atrial fibrillation, coronary artery disease and dyslipidemias.⁴ With growing evidence, vitamin-D deficiency has been studied extensively and now considered an independent risk factor for cardiovascular disease and stroke.

Vitamin-D deficiency is common, especially in Asian countries. Several studies have demonstrated the high prevalence of low vitamin-D levels in Asians. This high prevalence has been associated with lack of proper diet, poor calcium intake, social customs and traditional clothing.

Thus, South Asian population is especially more prone to vitamin-D deficiency and its consequences.

Vitamin-D deficiency causes rickets, birth defects, osteoporosis, osteoarthritis, osteomalacia, chronic pain and muscle pain. Recent trials have considered vitamin D deficiency as a risk factor in diseases, such as cardiovascular diseases, stroke, hypertension, neurological disorders, autoimmune diseases, depression and cancer.⁵

Vitamin-D deficiency is one of the independent risk factors for acute ischemic stroke. Stroke is a leading cause of disability in adults and every year millions of stroke survivors have to adapt to a more restricted and dependent life style. This poses high socio-economic burden, especially in developing countries. Identification and thus early management of risk factors of stroke can help ameliorate this burden of disease.

Different trials have studied association of low vitamin-D levels with acute ischemic stroke. The association is population dependent, since prevalence of vitamin-D deficiency is different in different populations. Regarding the association of low vitamin-D levels with acute ischemic stroke, no data is available from our population. This study is intended to make an estimate of this association in Pakistani population which will help establish and modify guidelines for prevention of ischemic strokes.

MATERIALS AND METHODS

This case control multi-centre study was conducted at Services Hospital Lahore, Multan Medical and Dental College Multan and Akhtar Saeed Medical and Dental

¹. Department of Medicine, Medical and Dental College Multan.

². Department of Pulmonology / Medicine³, Services Institute of Medical Sciences, Lahore.

³. Department of Medicine, Akhtar Saeed Medical and Dental College, Lahore

Correspondence: Mazhar Ali Naqvi, Senior Registrar of Pulmonology, Services Institute of Medical Sciences, Lahore.
Contact No: 0332-4766873
Email: naqvisyedmazharali@yahoo.co.uk

College Lahore, in six month duration from 28-05-13 to 28-12-13. This study included 200 subjects and divided into 2 groups (cases and controls). Blood sample for Vitamin D levels were collected and sent to institutional laboratory and results were followed to determine association of low vitamin-D levels with acute ischemic stroke. All ethical issues were addressed and informed consent was taken. All this information was recorded in a pre-designed proforma.

Data was collected and compiled in the computer and analyzed using SPSS-20. A quantitative variable like age was expressed as mean $\pm$ standard deviation. Qualitative variables like gender and low vitamin-D levels were expressed as proportions and percentages. Odds ratio was calculated to determine the significant difference in both groups. Odds ratio of more than 1 was considered significant.

RESULTS

There were 64 males and 36 females in patients with stroke. In the control group, there were 59 males and 41 females. P value was calculated to be 0.281. There mean age of the subjects were 54.86 ± 13.361 years (Table 1). Table-2 compares percentages of low vitamin-D levels in both groups and statistically significant results were obtained. Low vitamin-D levels were found in 85% patients with stroke, while 70% control subjects had low vitamin-D levels. P value was .009 and odds ratio calculated to be 2.42.

Table No.1: Descriptive statistics of subjects

Variable	Case		Control	
	No.	%	No.	%
Gender				
Male	64	64.0	59	59.0
Female	36	36.0	41	41.0
Age (years)				
20-40	10	10.0	14	14.0
41-60	70	70.0	58	58.0
61-80	20	20.0	28	28.0

Table No.2: Low Vitamin-D in both Groups

Group	Male	Female	total
Case	85	15	100
Control	70	30	100
Total	155	45	200

P value: 0.009

Odds Ratio: 2.42

DISCUSSION

Studies on causes of death from the 1990s have demonstrated that stroke remains a leading cause of death. In 2001, it was predicted that stroke accounted for 5.5 million deaths worldwide, corresponding to 9.6% of all deaths.⁶ In these mortalities, two-third deaths occurred in people living in developing countries and 40% were aged less than 70 years.

An epidemiological review on stroke prevalence in nine Asian countries reported that the percentage of ischemic and hemorrhagic strokes varied from 17% to 33%.⁷ The causes of stroke are multifactorial. One of the significant proposed risk factor is vitamin-D deficiency. Vitamin-D deficiency is extremely common in our population and the prevalence is on the rise. A causal relationship between stroke and vitamin-D deficiency has been known and investigated for some time now.

Multiple gene-regulatory functions in the body are served by Vitamin-D. Almost 3,000 genes are recognized that are upregulated by vitamin-D. Different mechanisms are postulated that play role in ischemic stroke. Vitamin-D reduces the risk of arterial stiffness which is a major risk factor for stroke. Other functions of vitamin-D include increase in natural anti-inflammatory cytokines, suppression of vascular calcification and inhibition of vascular smooth muscle growth. This study included 200 patients. 100 patients with acute ischemic stroke and 100 normal subjects were recruited. The study population had comparable age distribution in both groups, with mean age of 54.86 ± 13.361 years (Table 1). The incidence of stroke increases with increasing age, and these results were in accordance with these evidences.^{8,9}

Out of 200 subjects, there were 123 males and 77 females. 64% males and 36% females were present in Case Group (patients with ischemic stroke). In the Control Group (normal individuals) 59% males and 41% females were present (Table 1). There was no significant difference in gender distribution among these two groups (p value 0.281). These results supported the epidemiological evidence that stroke incidence is approximately 25% higher in men than in women.¹⁰

Serum vitamin-D levels of less than 50 nmol/l were considered significant in our study, as considered generally by investigators.¹¹⁻¹⁴ 85% stroke patients and 70% normal subjects had vitamin-D deficiency in this study. Low vitamin-D levels are prevalent particularly in Asians as demonstrated by different studies. Around 69%-82% of the South Asian populations in India have low levels of vitamin-D.¹⁵⁻¹⁷

Data from North India revealed that vitamin-D deficiency was found in 96% of neonates¹⁸, 91% of healthy school girls¹⁹, 78% of healthy hospital staff¹⁶ and 84% of pregnant women (168) with similar results from Pakistan.^{20,21} In Bangladeshi women prevalence was 38% in high income and 50% in low income group.²²

This deficiency is present not only in South Asians living in India and Pakistan^{15,16,17,20}, but also in immigrants of South Asian origin in UK, Denmark and Norway.²³⁻²⁸ Thus apart from poverty, other causes are also taken into account, e.g. use of unbalanced diet, excessive cooking and limited exposure to the sunshine.

Some of the secondary causes pointed out by Powell and Greenberg included decreased skin synthesis due to dark pigmentation or excessive clothing, gastrointestinal problems leading to malabsorption²⁹, impaired hepatic 25 hydroxylation of vitamin D-3 (due to anticonvulsant drugs, theophylline, isoniazid or severe liver disease), impaired renal hydroxylation of 25-hydroxy vitamin D-3 due to chronic renal failure or hypoparathyroidism.²⁹ Major causes of vitamin-D deficiency³⁰, that might be specific to South Asian populations, must be studied further.

Comparison between two groups in this study (Table 2) revealed that a high proportion of stroke patients had insufficient vitamin-D compared to healthy controls (85% vs 70%, $p=0.009$). These results were statistically significant and proved that vitamin-D deficiency is independently associated with acute ischemic stroke (odds ratio 2.42; 95% CI; $P=0.009$). This association was compared with the results of pre-existing studies.

In a study conducted in Singapore, researchers compared serum vitamin-D levels between Asian ischemic stroke patients. Results showed that 95% stroke patients and 84% healthy controls had insufficient vitamin-D levels ($p=0.007$). According to a study conducted in Addenbrooke's Hospital, vitamin-D levels of 44 patients with acute ischemic stroke were compared with those of 96 healthy subjects. 77% of stroke patients were found deficient in vitamin D.³¹

A recent large population-based prospective study tested the hypothesis that low vitamin-D is associated with an increased risk of ischemic stroke in the general population. It was observed that there is a stepwise increasing risk of ischemic stroke with decreasing vitamin-D levels.³² Data from another prospective study in women provided evidence that low vitamin-D levels are modestly associated with risk of stroke.³³ Balden et al indicated that vitamin-D deficiency exacerbates stroke severity, that involves both dysregulation of the inflammatory response as well as suppression of IGF-I.³⁴

Literature from Pilz et al favors that vitamin-D supplementation is a promising approach for the prevention and treatment of strokes³⁵. Evidence from another study validated that higher vitamin-D intake was associated with lower stroke incidence. Low serum levels of vitamin-D and decreased intake were significantly predictive of stroke when adjusted for age, gender, smoking and functional capacity.³⁶

Literature provides enough data on prevalence of vitamin-D deficiency and its association with ischemic stroke. However, no such data on this association was available in our population. This study is an effort to provide primary data for further research work. Local guidelines should be made regarding routine screening and early treatment of vitamin-D deficiency.

CONCLUSION

Frequency of low vitamin-D levels is higher in stroke patients compared to normal subjects in our population. So, it is recommended to treat vitamin-D deficiency adequately in order to reduce the risk of stroke.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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A Prospective, Randomized, Interventional Study Comparing Treatment Modalities for Diffuse Diabetic Macular Oedema: Bevacizumab and Bevacizumab Combined with Macular Grid - A Prospective Single Centre Study

Ali Afzal Bodla¹ and Maria Afzal Bodla²

ABSTRACT

Purpose: To study the effect of Bevacizumab and Bevacizumab combined with Macular Grid on diabetic macular oedema.

Study Design: Prospective study

Place and Duration of Study: This study was conducted at the Multan Medical and Dental College, Multan and Bodla Eye Care, Multan, from January 2014 to June 2014.

Materials and Methods: A prospective study from South Punjab that included 18 patients (36 eyes) with diffuse diabetic macular oedema. In every patient one eye was treated with a series of three bevacizumab injections 5 weeks apart and other eye with a series of three injections of Bevacizumab, 5 weeks apart combined with macular grid on fourth week after first injection. Patient had a detailed ophthalmic assessment prior to recruitment and during the course of study on every visit. Patient had an optical coherence tomography measuring retinal thickness prior to start of the treatment and on subsequent visits. Endpoint was considered as five months from the start of treatment during which patients had a regular follow up.

Results: Comparison was made between two groups taking into account visual acuity and central macular thickness as the primary measures. The difference between the mean central macular thickness at the time of enrollment and post study was statistically significant ($P < 0.05$) in both groups. There was no statistically significant improvement in visual acuity ($P > 0.05$) between the two groups or difference in mean reduction of retinal thickness ($P > 0.05$). Visual acuity was assessed in terms of mean gain, maintained or lost vision.

Conclusion: Bevacizumab does reduce the retinal thickness i.e. reduction in macular oedema in diabetics. However combining it with macular grid failed to show any statistically significant difference in terms of improvement in visual acuity or reduction in mean central retinal thickness.

Key Words: Diffuse Diabetic Macular Oedema, Bevacizumab, Macular Grid Photocoagulation

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INTRODUCTION

Diabetic macular oedema (DMO or DME), is one of the leading cause of blindness in the world.^{1,2} There are several studies published so far from the west looking at the incidence of DME and prognosis.^{1,3} Unfortunately not much work is available from our country in general and South Punjab in particular in terms of statistics of the disease.

². Department Eye, Multan Medical and Dental College, Multan.

³. Department of Radiology, Lahore General Hospital, Lahore.

Correspondence: Dr. Ali Afzal Bodla,
Assistant Professor of Ophthalmology, Eye Department,
Multan Medical and Dental College, Multan.
Contact No: 0303-9363917
Email: alibodla@aol.com

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Diabetic macular oedema points to diffuse retinal thickening with in two disc diameters of the centre of the macula.^{1,4} The primary pathology is the structural changes within the blood vessels due to diabetes. This leads to leakage of plasma and extracellular fluid from the blood vessels. Persistent leakage over a period of time leads to retinal thickening and consequently structural changes within the layers of the retina.⁵ Formation of micro aneurysms as abnormal out pouching of retinal blood vessels can lead to focal leakage resulting in localized macular oedema with or without circinate exudates.⁶

Diffuse diabetic macular oedema (DDMO or DDME) is associated with disruption of inner and outer blood retina barriers.^{5,7} This subsequently leads to a diffuse leakage of the posterior pole encompassing most of macula, hence making treatment much more challenging. Photocoagulation has been a well proven

treatment modality for this pathology over a period of last few decades. It works well in cases of focal leakage as individual micro aneurysms can be precisely targeted; however for diffuse diabetic macular oedema its efficacy has always been questioned.^{5,8} There is no proven mechanism for its role in DDME, though it is hypothesized that beneficial effects are a result from proliferation of endothelial cells in retinal capillaries and retinal pigment epithelium. This presumable improves the efficacy of inner and outer blood-retinal barrier making it less permeable hence reducing the amount of exudation.^{8,9}

Diffuse diabetic macular oedema is always considered as a challenging entity. Prior to Anti-VEGF era, when laser was the main stay of treatment it carried a relatively poor visual prognosis. Lee and Olk published long term follow up data following laser grid for the treatment of diffuse macular oedema.¹⁰ In a large case series, three years post treatment, visual acuity improved in 14.5%, stabilized in 60.9% and was worse in 24.6% of the eyes. This data however was non-comparative in terms of control subjects or other treatment modalities. More over treated eyes demonstrated a high rate of recurrence despite of appropriate systemic diabetic control. Another treatment modality used was triamcinolone acetonide. Agarwal and Gupta showed promising results in patients refractory to laser treatment. Though there were significant limitations of the study in terms of sample size and long term follow up.

Anti-vascular endothelial growth factor has increasingly found its role in the treatment of diffuse diabetic macular oedema. Diabetic retinopathy and maculopathy leads to an increased level of vascular endothelial growth factor (VEGF).^{8,10} It is the vascular permeability factor leading to a significant increase in vascular fenestrations and exudation of the retinal vasculature. Raised VEGF levels subsequently leads to increase in DDME. A simple and effective strategy is to neutralize its effect by using Anti-VEGF antibody i.e. Bevacizumab (Avastin, Genentech Inc, San Francisco).^{10,11} Avastin is a full length monoclonal antibody blocking all VEGF in the human eye. Its role in increasing best corrected visual acuity BCVA and reducing DDME is very well documented in the literature. Bevacizumab however carries a limited half life, requiring a need for multiple injections after certain intervals.

Intravitreal bevacizumab IVB and macular grid photocoagulation MGP are proven and effective treatments for diffuse diabetic macular oedema DDME.^{5,6,11} Author decided to conduct this prospective trial in order to determine the efficacy of mentioned treatment modalities as well as to determine the best combination most suited for patient's visual outcome.

MATERIALS AND METHODS

This prospective clinical study was carried out on 18 patients (36 eyes) presenting with diffuse diabetic macular oedema (DDME) to outpatient facilities at Multan Medical and Dental College, Multan and Bodla Eye Care, Multan. Both are private, tertiary eye care facilities. Patients were recruited from both sites over a period of six months, starting from January 2014 till June 2014. Informed consent was obtained from all study participants and procedure was explained in detail. Patients were informed of the nature of treatment as all patients required three injections of Bevacizumab in one eye five weeks apart, while similar course of injection in addition to macular grid photocoagulation four weeks post first injection in the other eye. All patient had an optical coherence tomography OCT at the time of induction to the study. Central macular thickness was documented for each eye. To achieve the best possible randomization, eyes with thicker macula of the two was identified as the first eye. First and second eye of the patients got an alternative distribution between the two groups. That is macular grid laser was performed in the first eye of patients assigned to even group i.e. 1,3,5,7 and so on, while in second eye of the patients belonging to odd group i.e. 2,4,6,8 and so on. This method has already been described in the literature by Solaiman et al.⁵

Diffuse diabetic macular oedema was defined as an area of retinal thickening of two disc diameters or more involving foveal avascular zone as already described in the literature.^{1,4,5} Inclusion criteria comprised of patients with central retinal thickness of more than 290 microns at the time of presentation. Patients who had prior treatment for DDME were excluded from the study. Other exclusion criteria were prior history for retinal surgery, evidence of vitreomacular traction on OCT as well as retinal ischemia of one disc diameter or more based on OCT-angiography or fundus fluorescein angiography findings and previous photocoagulation. Pseudophakics were included in the study who had surgery done six months prior to their enrollment in the study.

Patients had a comprehensive ophthalmic assessment with visual acuity measured using ETDRS charts, intraocular pressure check using applanation tonometry and slit lamp bio microscopy for fundus assessment. Patients had OCT for the measurement of central macular thickness CMT by Stratus OCT from Carl Zeiss. The map was created from six consecutive diagonal 6-mm scans that intersecting at the fovea. OCT measurements were repeated at every fifth week prior to administration of intravitreal Bevacizumab injections.

All patients had the standard dose of bevacizumab (1.25 mg/0.05 mL) provided by a single local supplier. Source of injections were certified compounding pharmacies based in Lahore. All injections were administered under the sterile conditions in operating theatre. Surgeon used mask, sterile gloves, theatre gowns and had surgical scrub prior to the procedure. Patients had topical anaesthetic drops (Alcaine manufactured by Alcon) preoperatively for local anaesthesia. Injections were administered using standard prefilled insulin syringes with 30 gauge needles on them. Prefilled syringes however, as provided by the local supplier were non sterile as is the common practice in our country. All patients had a thorough cleaning of periocular tissue and lids using 5-10% povidone iodine. Same drops were instilled in the eyes to be operated for two to three minutes in order to achieve the maximum possible sterility. Patients had a self-adhesive surgical drape covering periocular tissue, nose and part of face prior to the procedure. Patients had a sterile speculum inserted followed by the intravitreal injection. Injections were performed in the inferotemporal quadrant. Needle was inserted 3.5mm from the limbus for phakic and 3.5mm for pseudophakic and aphakic patients. Following the procedure, speculum was removed and patients had a single drop of ofloxacin eye drops combined with a single drop of povidone iodine solution. Clear written instructions in native language were provided to them for the use of topical antibiotic drops to be used four times a day for five days in the operated eye, starting on the same day following eye pad removal. Patients were seen on day 1 following the procedure to rule out the risk of intraocular inflammation and vitreous haemorrhage.

Macular Grid Photocoagulation was performed using Carl Zeiss 532S photo coagulator. Procedure was performed by a single surgeon administering 100um spots, equally apart in foveal area and 200um spots equally apart for the macula. Endpoint was considered as blanching of retinal pigment epithelium.

Patients were followed up on week 5 for their subsequent OCT's and intravitreal bevacizumab injections. Prior to the procedure standard ophthalmic assessment was repeated as already documented. Criteria for improvement or loss of BCVA was a subsequent gain or loss of > 5 ETDRS letters on the chart. Statistical analysis was performed using SPSS version 16. Paired t-test was used for the comparison between the groups and a student's t-test was used to measure a statistically significant outcome. A p value of 0.05 was considered to be of significance as described in the literature.

RESULTS

There were 36 eyes of 18 patients included in the study, randomized to intravitreal bevacizumab IVB, and

intravitreal bevacizumab IVB and macular grid photocoagulation MGP "combined" group. All patient met the inclusion criteria and were followed up for a total of 5 months from the time of induction. Patients were recruited from two centers but studied was carried out at Bodla Eye Care, Multan due to availability of required resources. All eyes included in the study received three Bevacizumab injections five weeks apart. The mean age of the patients was 59.8+/-8.4 years. Out of 18 patients 11 (61.1%) were male, while 7 (38.9%) were females. Mean number of injections were 3 throughout the groups. Mean duration of difference between the injections was standardized to 5 weeks. Mean duration of diabetes for the sample size was 8.4 years. In IVB group 4 patients (0.44%) had proliferative diabetic retinopathy, while 3 out of 9 patients (0.33%) had proliferative diabetic retinopathy in the combined group. Mean HbA1c at the time of induction for both groups was 7.6%.

BCVA was monitored with ETDRS charts. Mean BCVA for the IVB group at the time of presentation was 54.7+/-8.8. BCVA for the combined group was 53.1+/-7.4. At the end of study BCVA for the IVB group improved to 65.1+/-7.9 ($p>0.05$) and for the combined group to 62.8+/-6.6 ($p>0.05$). There was no statistically significant difference between the two groups in terms of patients who gained, maintained or lost vision. In IVB group 9 eyes gained >5EDTRS letters, 6 maintained and 3 eyes lost >5EDTRS letters. In combined group 10 eyes gained >5EDTRS, 5 maintained and 4 lost >5EDTRS letters. Result was not found to be statistically significant ($P>0.05$) between two groups.

Changes in central macular thickness were non-significant ($p>0.05$) between time of inductions, prior to injections and at completion of the study. However, reduction in central macular thickness was found to be significant ($p<0.05$) with in the two groups. Mean CMT in IVB group reduced from 438+/-67 microns to 261+/-61 microns ($p<0.05$). In combined group there was a reduction from 449+/-59 microns to 271+/-54 microns ($p<0.05$).

None of the patient encountered any serious complications as endophthalmitis, vitreous haemorrhage or retinal detachment during the study. Sub conjunctival haemorrhages were noted in few patients post injections. In the combined group none of the patients had laser burns to foveal avascular zone resulting in blind spots. The mean numbers of laser burns applied were 212+/- 34 in the combined group.

DISCUSSION

Author believes that this is the very first trial carried on in South Punjab with respect to treatment options available for diffuse diabetic macular oedema DDME. This provides valuable local demographic data on the severity of disease, mean age and HbA1C levels as well

as degree of retinal oedema in the local population. In recent past two studies ETDRS and WESDR have improved our understanding towards management of DDME.^{1,6,9} Nevertheless it is equally important to publish our local data so we can have a better understanding of natural history, risk factors and treatment response of South Punjab rural and urban population toward this pathology. Author has made this effort keeping in view the above mentioned statement.

Michael J Elman et al published the very first randomized clinical trial The Diabetic Retinopathy Clinical Research Network's Protocol I study on the use of Bevacizumab in diabetic macular oedema in 2010, paving way to what has become the most common practice in the field of ophthalmology.¹² It showed a significant improvement in terms of vision and retinal thickness with bevacizumab as compared to the laser alone group. Nevertheless diffuse diabetic macular oedema DDME to date presents as the most challenging pathology to treat. This is to do with disruption of blood retina barrier leading to exudation. The effect of Bevacizumab is transient, leading to multiple injection administration over a period of time. It reduces the vascular permeability but cannot treat hypoxia, the underlying problem. Hence it is easy to conclude that there is no definite treatment for DDME.^{1,13}

There have been several studies published to date on pharmacokinetics of Bevacizumab. Moisseve E et al have shown a mean vitreal half life of 4.9 days in non vitrectomized and 0.66 days in vitrectomized eyes. In animal models a concentration of >10ug/ml has been found over a period of 30 days.^{5,14} This point towards the most common dilemma physician comes across to date i.e. recurrence of macular oedema which warrants ongoing intravitreal injections.

Solaiman et al has published there data showing that macular grid laser when combined with intravitreal bevacizumab can lead to a decrease in the required frequency of bevacizumab injections. This study failed to show any significant difference in visual outcome between two groups. Randomized technique used in this study was applied by author for his sample size and our results do second there findings in term of final visual outcome. Roh et al in their study have shown a transient improvement in BCVA and reduction in mean CMT post Bevacizumab injections, though recurrence inadvertently takes place as discussed earlier by author. Macular grid photocoagulation MGP has a proven role in retinal photoreceptor remodeling. While destroying some of the high oxygen consuming photoreceptors it can lead to rerouting of the remaining blood flow to remaining viable photoreceptors.¹⁵ Moreover MGP can lead to functional restoration of retinal pigment epithelium resulting in improved BCVA.

The surprising finding from the recently published analysis of national cohort by Vander Beak and LiyuanMa showed the increase in use of laser in

conjunction with Bevacizumab.¹⁶ Hence both treatments are not only valid to date but in current clinical practice are amalgamated to achieve the best possible visual outcome. Both treatments improves retinal integrity by different mechanism and if combined can hypothetically have better effect than following single modality.¹⁷ Based on this hypothesis author had carried out this study. In our study we decided to apply laser four weeks after the first bevacizumab injection. It was believed that while Bevacizumab had decreased the retinal permeability, macular grid photocoagulation will potentiate the effect by restructuring the retinal pigment epithelium.¹⁸ Our results however failed to show any statistically significant difference. Author is very much aware of two main limitations of the study, sample size and follow up duration. Moreover, a total of three Bevacizumab intravitreal injections were administered over a period of five months. Reducing the frequency to four weeks i.e. increasing the number of injections with a longer follow up time might have different outcome. Moreover as macular grid photocoagulation MGP is believed to have a long term effect, final visual outcome measured at one year or further down the line post initial treatment as carried out by Suleyman Et Al might have a statistically significant difference.⁵

Mean CMT showed statistically significant reduction with in each group. However this difference was not translated in visual improvement. This behavior is well documented in literature as can be explained with the structural changes within the retina due to chronicity of the disease.^{12,14} Other compounding factors can be poor systemic control and early onset of the disease. We need to take into account the regional demographics specific to South Punjab documented for the first time. There appears to be an overwhelming male majority of the patients recruited in the study. Author believes this is the effect of sociocultural practices followed in the region. Patient had raised HbA1C levels in comparison to similar studies from the west, pointing towards poor systemic control.^{19,20} Mean duration of diabetes was comparatively less again pointing towards lack of local health facilities resulting in increased comorbidity from poor glycemic control.

CONCLUSION

In summary, this randomized clinical trial showed a clear benefit from Bevacizumab alone or Bevacizumab combined with laser photocoagulation in reducing central macular thickness. BCVA was improved or have stabilized in majority of patients from each group. This study how ever failed to show a statistically beneficial role of macular grid photocoagulation combined with bevacizumab. Author strongly believes that sample size and follow up duration were the main limiting factor. A similar study with larger sample size and longer duration of follow up is strongly warranted

to further evaluate the findings. It is equally important to have further trials to be specifically carried out in this region as it appears that patient tend to have poor systemic control and early onset of disease which requires a modification in current treatment protocols.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Determine the Frequency of Common Bile Duct Injuries Encounter during Laparoscopic Cholecystectomy at Tertiary Care Hospitals

Muhammad Hanif Abbasi

ABSTRACT

Objective:- Determine the frequency of common bile duct injuries encounter during laparoscopic cholecystectomy..

Study Design: Observational / descriptive Study.

Place and Duration of Study: This Study was conducted at the Surgical Ward 18A and Army Liver Transplant Unit, Military Hospital Rawalpindi from January 2016 to Jan 2017.

Materials and Methods: All 588 cases of gallstones had been diagnosed by abdominal ultrasound. All preoperative workup done before going laparoscopic cholecystectomy procedure. Patients age > 20 years and both gender were included in this study, while carcinoma of gall bladder, stone in CBD and obstructive jaundice were excluded from this study.

Results: 588 cases diagnosed of Cholelithiasis for laparoscopic cholecystectomy. Female patients were mostly presented with gallstone in 533(90.64%) female, female to male ratio were 1:0.69. The mean age was 36±6.17years. Mostly patients reported in 3rd and 4th decade age groups 366(62.24%) cases in between 36-50 years. Multiple stone was 477(81.12%) are more reported as compare to single stone. Common findings on ultrasound was thick wall gallbladder 359(61.05%) cases followed by contracted gallbladder in 69(11.73%) cases. Common bile duct injury during laparoscopic cholecystectomy observed in 19(3.23%) cases.

Conclusion: The key point in preventing CBD injury is correctly identifying the Calot's triangle. Use of IOC can help in identification and further prevention of CBD injury and complications associated with it.

Key Words: Common Bile duct injury, Cholecystectomy, Laparoscopic cholecystectomy.

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INTRODUCTION

Gallstones are present in 15% of adult population and in majority of cases are asymptomatic. The treatment of choice for symptomatic as well as asymptomatic gall stones is laparoscopic cholecystectomy. Laparoscopic cholecystectomy have now taken place of open cholecystectomy due to lesser hospitalization time i.e around 1.2 to 1.3 days whereas open techniques require around 3-4 days of hospitalization, longer recovery time and a higher incidence of peri-operative complications^{1,2}.

laparoscopic techniques have significantly improved patient outcomes but have been associated with a higher incidence of bile duct injuries as compared to open techniques. Studies have reported risk of BDIs to be

0.21% with laparoscopic techniques whereas 0.06% with open technique^{3,4}

Second surgical procedure required to correct bile duct anatomy within one year following laparoscopic cholecystectomy is defined as bile duct injury. Davidoff et al have described misinterpretation of CBD for cystic duct as the most common cause of injury. Second most common cause was identified to be hilar bleeding. While bleeding is controlled, adjacent structures can be injured by laser, electro-cautery or hemostat⁵. One important explanation for bile duct injuries is learning curve of the surgeon. The rate of BDIs was 2.2% during first 13 laparoscopic surgeries which reduced to 0.1% in further surgeries⁶. It has been seen that the steepest part of learning curve relies within the first 12 operated cases.

There are certain risk factors associated with higher incidence of BDI during laparoscopic procedure. These include age, sex, anatomical variations of Calot's triangle, adhesions due to previous laprotomy, impacted stone in the Hartmann's pouch. Old age patients are more likely to have strictures and adhesions involving the Calot's triangle hence are prone to have BDIs. It has been shown that males have relatively more chances than females to have aberrant anatomical abnormalities

Department of Surgery, Army Liver Transplant Unit, Military Hospital, Rawalpindi.

Correspondence: Dr. Muhammad Hanif Abbasi, General and HPB / Liver Transplant Surgeon, Army Liver Transplant Unit, Military Hospital, Rawalpindi.

Contact No: 0331-9301869

Email: abasimha@yahoo.com

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involving Calot's triangle thus increases their chances for BDIs⁷⁻¹⁰.

Prognosis following bile duct injury depends on early identification and repair. If BDIs are identified at the time of operation then it should be repaired at the time of operation however If the surgeon is inexperienced, the safest option is to apply simple drainage and refer to specialized department for further care as there are higher chances of failure to correct associated with the surgeon especially If he is in his learning curve¹¹⁻¹⁴. Injuries identified after cholecystectomy follow different course. Ultrasound and ERCP can be used for diagnosis. If diagnosis is uncertain despite using these modalities then retrograde cholangiography offers promising results. Patient presents with non-specific symptoms such as pain, abdominal distension, nausea followed by vomiting. Few days later the patient may develop complications such as jaundice, sepsis, biloma, biliary fistula and peritonitis. In rare instances, the patient may present with recurrent cholangitis, secondary sclerosing cholangitis and chronic liver disease¹⁵⁻¹⁸. Before the commencement of treatment, it is made sure that the patient is stabilized. For minor injuries which includes bile duct leaks and stenosis, sphincterotomy and stents can be used. For severe injuries such as laceration and obstruction of bile duct Roux en Y hepaticojejunostomy is preferred¹⁹⁻²¹.

MATERIALS AND METHODS

This Prospective Observational Study was conducted at Surgical ward 18A and Army Liver Transplant Unit, Military Hospital Rawalpindi, January 2016 to Jan 2017. There were 588 cases of gallstones had been diagnosed by abdominal ultrasound. All preoperative workup done before going for laparoscopic cholecystectomy procedure. Patients age ≥ 20 years and both gender were included in this study, while carcinoma of gall bladder, stone in CBD and obstructive jaundice were excluded from this study.

RESULTS

There were 588 cases diagnosed of Cholelithiasis for laparoscopic cholecystectomy. Female patients were mostly presented with gallstone in 533(90.64%) female, female to male ratio were 10.69:1. The mean age was 36 ± 6.17 years. Mostly patients reported in 3rd and 4th decade age groups 366(62.24%) cases in between 36-50 years. Multiple stone was 477(81.12%) are more reported as compare to single stone. Common findings on ultrasound was thick wall gallbladder 359(61.05%) cases followed by contracted Gallbladder in 69(11.73%) cases. Common bile duct injury during laparoscopic cholecystectomy observed in 19(3.23%) cases.

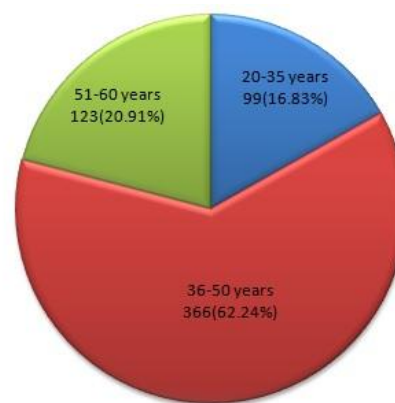


Chart No.1: Age Distribution n-588



Chart No.2: abdominal ultrasound finding n-588

DISCUSSION

There are several points proposed to avoid the incidence of bile duct injury during laparoscopic procedures. Hunter has given five points to reduce the incidence of bile duct injury. These include greater use of 30 degree angled laproscope as it is believed to provide a more perpendicular view of hilar structures. Use of firm cephalad retraction of fundus of gallbladder which helps visualize the hilar structures due to better exposure. The first assistant should retract the gall bladder infundibulum laterally instead of parallel to the common bile duct to separate common duct from cystic duct. Continuous dissection of cystic duct into gall bladder and prompt conversion to open technique whenever extensive bleeding occurs. Some more points contributed by Davidoff and his colleagues include keeping the surgical field clear by continuous use of suction and irrigation. Interpretation of cholangiogram is of significant importance and it should be done with caution. Inability of the common duct to opacify should raise suspicion for its occlusion. Avoid using laser, cautery or hemostatic clips to control bleeding because it may lead to extensive injuries involving the bile duct^{5,22}. It has been observed that the outcome following repair was better in cases when repair was performed by a different surgeon other than the one

performing cholecystectomy. However in majority of clinical trials, the surgeon performing the cholecystectomy performs the repair²³.

It was observed in the current study out of 588 cases 533 were female (90.64%) and 55 male (9.35%); with female to male ratio of 10.69:1. Mohan H reported that out of 1100 cases, 952 were females and 148 males with female to male ratio 6.4:1⁶⁹⁽²⁴⁾.

In the present study, the maximum age recorded was 60 years and a minimum of 20 years, out of 588 cases maximum distribution was observed in 3rd and 4th decade and least was seen in 6th decade. In the study conducted by Memon MR reported mean age of patients undergoing laparoscopic cholecystectomy was 45 years⁷⁰⁽²⁵⁾.

Ultrasound is a routine examination in daily practice and it is the first line imaging modality of choice in many clinical presentations (e.g. abdominal pain) as well as in asymptomatic patients as a screening tool⁷²⁽²⁶⁾. Ultrasound is widely accepted for the diagnosis of biliary system disease. It has the greatest sensitivity for the diagnosis of cholelithiasis (approximately 99%) when compared with other imaging modalities. It is also of great help in the diagnosis of the spectra of appearances in acute and chronic cholecystitis and in the diagnosis of intra- and extrabiliary duct dilation. In our study ultrasound examination revealed single stone in 111(18.87%) patients where as multiple stones in 477(81.12%) patients, thick wall gallbladder in 359(61.05%) patients, while contracted gallbladder 69(11.73%) cases. However ultrasound finding given by Ji W et al⁷³⁽²⁷⁾ in their study shows multiple stones in 69.71%, thick wall gallbladder in 41.67% and adhesions in 35% of cases.

Intraoperative Cholangiogram (IOC) can reduce the rates of BDIs because of providing an overview of the anatomy before the surgeon opens it. It could prevent errors which could occur due to mis-identification of structures. It can be a useful tool for surgeons during their learning curve. However the supportive role of IOC was not supported by all studies. Also it has been found that IOC is associated with small risk of allergic reaction to contrast agents injected during the procedure. Mirizzi syndrome is also an identified contraindication to use of IOC [25]²⁸. In our study out of 588 Laparoscopic cholecystectomy cases 19(3.23%) patients had CBD injury. An international study conducted by Maria Kapoor reported 1.3% CBD injury²⁹.

One important point to consider while undergoing laparoscopic cholecystectomy is that the conversion of laparoscopic technique to open technique should not be considered as a complication of laparoscopic cholecystectomy but should be considered as an important step taken for the safety of patient^{30,26}.

CONCLUSION

The key point in preventing CBD injury is correctly identifying the Calot's triangle. Use of IOC can help in identification and further prevention of CBD injury and complications associated with it.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Efficacy of *Saccharomyces Boulardii* in Children with Acute Diarrhea

Muhammad Fayaz Khan Burki¹ and Firdos Jabeen²

ABSTRACT

Objectives: The main objectives of the study were to reduce the stool frequency, to improve the stool consistency and to reduce the mean duration of diarrhea in days.

Study Design: Prospective (case control) study

Place and Duration of Study: This study was conducted at Govt. Sifwat Ghayur Shaheed Memorial (infectious diseases) Children Hospital, Peshawar from May to Oct. 2016

Materials and Methods: A total of 200 patients were equally divided into two groups, cases and controls, randomly and consecutively. The cases group was receiving *saccharomyces boulardii* in addition to the routine management, while the control group was just receiving the normal management. Children of age, range between 6 months to 5 years were included in the study. Children with recurrent or chronic diarrhea, acute dysentery, thalassaemia and congenital heart disease were excluded of the study.

Results: The cases group had a mean duration of diarrhea of 3.23 days and control group 5.84 days. The difference in stool frequency, consistency and duration was statistically significant on day 3 between the two groups (0.008,0.000).

Conclusion: The use of *saccharomyces boulardii* is a beneficial addition to the management of acute diarrhea, which is associated with speedy recovery by improving stools frequency and consistency as compared to the patients who do not received.

Key Words: Efficacy, *saccharomyces boulardii*, dysentery, thalassaemia, congenital..

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INTRODUCTION

In children younger than 5 years of age after pneumonia, diarrhea is the second leading cause of morbidity and mortality.¹ In summer it accounts for (50-60%) of our hospital admissions. In Pakistan it causes an estimated 2.5 million deaths in children under 5 years of age per year which is very high as compared to the developed world.² Important factors increasing susceptibility to Diarrhea are lack of Breast Feeding, ingestion of contaminated food or water, exposure to unsanitary conditions, malnutrition, measles and level of maternal education. *Saccharomyces boulardii* is a tropical strain of yeast first isolated from lychee and mangosteen fruit in 1923 by French scientist Henri Boulard in Indochina and has been used as a remedy for Diarrhea since 1950.³

It has also shown to maintain and restore the natural flora in the large and small intestine; it is classified as a probiotic. It has been found to be more effective than the bacteria (*Lactobacillus*) as a probiotic.³ He observed

natives of Southeast Asia chewing the skin of lychee and mangosteen to control the symptoms of cholera. It has been shown to be non-pathogenic, non-systemic (it remains in the gastrointestinal tract rather than spreading elsewhere in the body), and grows at the unusually high temperature of 37°C.⁴ The mechanism of action of *S. Boulardii* is that it induces receptor competition. Increases mucin secretion or enhances probiotic induced action of gut associate lymph node tissue.⁵ The use of *saccharomyces boulardii* in otherwise healthy children of aged 6m⁰ & 10 years showed significant decrease in reduced daily stool frequency on day 3 and 4 with increase in serum immunoglobulin A level and decrease in C-reactive proteins levels on day 7. Confirming the efficacy of *S. Boulardii* in paediatric acute Diarrhea and also enhancing the immune system response.⁶ Studies from Mediline, embase cinahal and the conchance library were obtained showing a significant improvement with the use of *saccharomyces boulardii* in acute Diarrhea and also decreasing the risk of Diarrhea lasting more than 7 days.⁷ *S. Boulardii* is a well tolerated drug with no side effects improving the stools consistency and the number of stools per day reduced to 2.7 and 4.2 respectively in cases verses controlled groups. The duration of Diarrhea was 3.6 days in *S. Boulardii* group whereas 4.8 in controlled group.⁸ *S. Boulardii* was used as an adjunct to ORS in ambulatory care in children less than 2 years old with mild or moderate

¹. Department of Pediatrics / Community Medicine², Jinnah Medical College Peshawar.

Correspondence: Dr. Muhammad Fayaz Khan Burki,
Assistant Professor of Paediatrics, Jinnah Medical College,
Peshawar
Contact No: 0321-9087688 / 0321-9130631
Email: drfayazburki123@gmail.com

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acute Diarrhea & reduced the risk of prolonged Diarrhea, with increased efficacy if started within the first 48 hours of commencement of Diarrhea.⁹ A randomized controlled study showed that *S. Boulardii* is moderately effective in preventing antibiotic induced acute Diarrhea, showing that it is effective in any form of acute Diarrhea.¹⁰ *S. Boulardii* is effective in the treatment of nosocomial Diarrhea and more so in sporadic and infectious Diarrhea showing the diverse nature of the drug and its use in different forms of acute Diarrhea.¹¹ Effective use of *S. Boulardii* could decrease patients exposure to antimicrobial.¹² *S. Boulardii* secures to be a promising agent for the amelioration of the course of acute Diarrhea in children when used therapeutically.¹³ Probiotics are live microbial feeding supplements that beneficially affect the host animal by improving its microbial balance.¹⁴ They are commonly used in the treatment and prevention of acute diarrhea. The rationale for using probiotics in acute infectious diarrhea is based on the assumption that they act against intestinal pathogens. However, the mechanism by which probiotics work is unclear. The possible mechanisms include the synthesis of antimicrobial substances^{14,15}, competition for nutrients required for growth of pathogens¹⁴, competitive inhibition of adhesion of pathogens¹⁶⁻¹⁷, modification of toxins or toxin receptors^{18,19}, and stimulation of nonspecific and specific immune responses to pathogens. Diarrhea is a common side effect of antibiotic treatment, especially among children. As many as 11-40% of children develop diarrhea while taking antibiotics. While no infectious microorganism is identified most of the time, a bacterium called *Clostridium difficile* is often the culprit underlying severe diarrheal episodes. To date, Ten²⁰ systematic reviews and meta-analyses have found probiotics effective at treating or preventing diarrhea. In 12 pediatric studies included in this analysis, probiotics reduced the likelihood of acute diarrhea in children by 57% ($p < 0.001$). A 26% reduction of acute diarrhea was observed for adults.²¹ Similar benefits were also obtained by others who found that probiotics reduced the risk of antibiotic-associated diarrhea from 28.5% with placebo down to 11.9%. In fact, it became apparent from an analysis that for every 7 patients that would normally develop diarrhea while taking antibiotics, one fewer person would get antibiotic-associated diarrhea if also taking a probiotic simultaneously.^{22,23} The probiotics work against a type of *E. coli* bacteria that causes diarrhea by producing a chemical that is toxic to intestinal cells. Probiotics carry a molecule that looks a lot like the toxin receptor found on intestinal cells. This mimicry causes the toxin to bind to the microbes instead of the intestinal cells. Lab tests showed that these probiotics could bind and neutralize a significant amount of enterotoxin, according to a report in the medical journal *Gastroenterology*.²⁴

MATERIALS AND METHODS

This was a prospective (case control) study of 6 months duration from May to Oct. 2016 conducted in Govt. Sifwat Ghayur shaheed Memorial (infectious diseases) children hospital Peshawar. A total of 200 patients were equally divided into two groups, cases and controls, randomly and consecutively. The cases group was receiving *saccharomyces boullardii* in addition to the routine management of acute diarrhea, while the control group was just receiving the normal management. Children of age range between 6 months to 5 years were included in the study, irrespective of their hydration status and present or past status of the use of antibiotics, and who could tolerate *saccharomyces boullardii*. Children with recurrent or chronic diarrhea, acute dysentery, thalassaemia and congenital heart disease were excluded of the study.

Arrival status of stool frequency and consistency, fever, level of consciousness, status of breast feeding and urine output was recorded on a predesigned and approved proforma and then the stool frequency and consistency were simultaneously checked on day1, 3, 5, and 7 respectively in both the groups.

Data Collection: The following variables will be studied:

1. Stool frequency: Will be a numerical variable.
2. Stool consistency: Will be a categorical variable.
3. Mean duration of diarrhea in days: Will be a numerical variable

Confounding variables: Type of feeding (whether bottle or breast), On arrival hydration status and usage of antibiotics would be our confounding variables and will be appropriately dealt with.

Data Analysis:

Descriptive Statistics: Descriptive statistics regarding the demographic and nominal data will be detailed with medians and/or means with standard deviations.

Test Statistics: Keeping in view the above variables under study, Unpaired T-test at 0.05% level of significance (p -value) will be used for comparison of the numerical variables like mean duration of diarrhea in days and the mean stool frequency in the two groups. Chi-square test will be used for comparison of proportion of patients having the stool consistency of less than Grade 3 in either of the two groups.

Statistical Software: SPSS 15, release 15.0.0, September, 2006; SPSS Inc. will be used for data entry and data analysis.

RESULTS

The study was conducted in Govt. Sifwat Ghayur Shaheed Memorial (Infectious diseases) children hospital Peshawar. A total of 234 patients were included, in which 21 patients prematurely discharged and 13 patients left against medical advice. In the remaining 200 patients, 100 were cases and 100

controls. In the cases group 38(38%) were females and 62 (62%) were males, while in control group 44 (44%) were females and 56 (56%) males. The mean admission weight was 9.86 Kgs for cases and 11.6Kgs for control whose difference was not statistically significant. The average age of the cases group was 22.87 months and that of controls was 26.76 months with a standard deviation of 13.29 which was also not statistically significant. Regarding arrival stool frequency 92 (92%) cases and 94 (94%) controls had more than 10 episodes per day, and 8 cases (8%) versus 6 (6%) controls had episodes of 2-10 per day this was also not statistically significant (Table 1). Arrival stool consistency was uniformly same between

the two groups and was more than grade 3.(Table1)The breast feeding status on arrival was that, 29 (29%) cases and 25 (25%) controls were exclusively breast fed, 36(36%) cases and 46 (46%) controls were partially breast fed, while 35 cases (35%) and 29 (29%) controls were bottle fed. The difference was also not statistically significant (Table 1). On admission 17 cases (17%) and 14 (14%) controls had mild dehydration, 57 cases (57%) and 66 (66%) controls had moderate, and 26 cases (26%) and 20 (20%) controls had severe dehydration, which was not statistically significant as well (Table 1). On arrival 56 cases (56%) and 47 (47 %) controls had fever which was also not statistically significant.(Table1).

Table No. 1: Arrival Status N=200

		Cases %	Controls %	Total	P. Values
Stool frequency	2-10	8 (08)	6(6)	14	.500
	>10	92(92)	94(94)	186	
Stool Consistency	>G3	100	100	200	.500
Breast Feeding Status	Exclusively Breast Fed	29(29)	25(25)	54	.512
	Partially Br. Fed	36(36)	46(46)	82	
	Bottle Fed	35(35)	29(29)	64	
Dehydration Status	Mild	17(17)	14(14)	31	.600
	Moderate	57(57)	66(66)	123	
	Severe	26(26)	20(20)	46	
Presence of fever	Yes	56(56)	47(47)	103	.199
	No	44(44)	53(53)	97	
Urine output	Normal	20(20)	13(13)	33	.692
	Decreased	67(67)	73(73)	140	
	No	13(13)	14(14)	27	
Conscious level	Well oriented	19(19)	23(23)	42	.878
	Irritable	67(67)	63(63)	130	
	Comatose	14(14)	14(14)	28	

Table No. 2: Stool frequency and consistency N=200

Table No. 1: Stool frequency and consistency						
			Cases %	Controls %	Total	P. value
Day 1	Stool frequency	<10	17(17)	10 (10)	27	.162
		>10	83(83)	90(90)	173	
	Stool consistency	Grade 3 or below	6(6)	2(2)	8	.183
Day 3	stool frequency	< 3,	40(40)	20(20)	60	.008
		3-10	50 (50)	52(52)	102	
		>10	10(10)	28(28)	38	
	stool consistency	Grade 3 or below	63(63)	32(32)	95	.000
		>grade 3	37(37)	68(68)	105	
Day 5	stool frequency	<grade 3,	77(77)	44(44)	121	.000
		3-10	23(23)	48(48)	71	
		>10	0	8(8)	8	
	stool consistency	Grade 3 or below	87(87)	62(62)	149	.000
		>grade 3	13(13)	38(38)	51	
Day 7	stool frequency	<grade 3	98(98)	82(82)	180	.001
		3-10	2(2)	18(18)	20	
		>10	Nil	Nil	Nil	
	Stool Consistency	Grade 3 or below	94(94)	85(85)	179	.060
		>grade 3	6(6)	15(15)	21	

Table No. 3: Independent sample t-test for equality of means in the duration of diarrhea between cases and controls

Stay	N	Mean Duration (in Days)	Std. Deviation	t-Value	df	Sig.(2-tailed)
Cases	100	3.23	1.309	-9.773	138	0.000
Controls	100	5.84	1.814		125.5	

On admission 20 (20%) cases and 13 (13%) controls had normal urine output, 67 cases (67%) and 73 (73%) controls had decreased urine output, while 13 cases (13%) and 14 (14%) controls had no urine output, with statistically no significant difference (Table 1). In the context of level of consciousness on arrival 19 cases (19%) and 23 (23%) controls were well oriented, 67 cases (67%) and 63 (63%) controls were irritable, and 14 cases (14%) and 14 (14%) controls were comatose. Again, statistically no significant difference (Table 1). On completion of day 1, 83 cases (83%) and 90 (90%) controls had stool frequency of more than 10 episodes per day, which was not statistically significant (Table 2). Regarding stool consistency also there was no significant difference between the two groups as 94 cases (94%) and 98 (98%) controls had more than grade 3 stool consistencies. (Table 2). On completion of day 3, 40 cases (40.00%) and 20 controls (20.00%) had stool frequency of less than 3 episodes per day, 50 cases (50.00%) and 52 (52.22%) controls had 3-10, and 10 cases (10.00%) versus 28 (28%) controls had more than 10 episodes of loose stools per day. Here the difference was Statistically Significant. (Table 2) Likewise stool consistency was also having statistically significant difference as 63 cases (63%) and 32 (32%) controls had grade 3 while 37 cases (37%) and 68 (68%) controls had more than grade 3 stool consistency. Same was the case on day 5 and day 7, there was uniform statistically significant difference between the two groups in terms of stools frequency and consistency. (Table 2) Use of antibiotics between the two groups did not have significant difference as well. The mean duration of diarrhea for cases was 3.23 days and controls were 5.84 days. (Table 3)

DISCUSSION

Acute Diarrhea is still one of the most common cause of mortality in our children. The disease burden is very high and in summer the admission may reach up to 25 to 30%. This study was carried out to determine the efficacy of *S. Boulardii* in children with Acute Diarrhea. Which showed an improvement of 3.23 days as compared to the other group. In Pakistan a study was done in children to assess the efficacy of *Saccharomyces boulardii* in acute watery diarrhea. This was randomized into group A (treated with ORS and nutrition appropriate for age) and Group B (treated with *Saccharomyces boulardii* 250 mg b.d. orally, ORS and nutrition appropriate for age). They were followed up for 6 days. Frequency and consistency of stool were recorded. There were 50 children in control (A) and 51 in study (B) group. The mean age was 17.45 months

(range 3 to 60 months). The frequency of stools on day 1 was the same in the two groups ($P=0.175$). On day 3 the frequency reduced significantly in group B as compared to that of group A ($P=0.02$). The consistency of stool also improved as compared to control at day 3 ($P=0.003$) and day 6 ($P=0.004$) respectively. This study was similar to ours, as it was done in the same age group and on third day results after the use of *S. Boulardii* were the same as our study. But it was different as it was carried out in multiple centres and the number of patients were less than ours. Another study in Argentina was conducted to evaluate the efficacy of *Saccharomyces boulardii* as an adjuvant to ORS in shortening the duration of acute diarrhea in children. In a period of 1 year 100 outpatients between 3 to 24 months presenting with acute mild to moderate diarrhea of less than 7 days duration were included in a double-blind, randomized, placebo-controlled trial evaluating the efficacy of *S. boulardii* administered for 6 days. 12 children were lost in follow-up; the data of 88 children could be analysed (44 in the placebo and 44 in the *S. boulardii* group). But 72 patients were followed for one month (37 in the placebo and 35 in the *S. boulardii* group) allowing the calculation of the duration of diarrhea. The mean duration of diarrhea was 6.16 days (range 2-13 days) in the placebo group and 4.70 days (range 2-10 days) in the *S. boulardii* group ($p<0.05$). On the 4th day, the patients in the *S. boulardii* group passed 2.5 ± 1.4 stools/day versus 3.5 ± 1.8 in the placebo group ($p<0.001$). A statistically significant difference was observed in the number of stools on 4th and 7th day in both groups. This study was similar to our study because of improvement in diarrhea after the use of *S. Boulardii* but the age range was different and patients were studied for a longer duration of time. A study done in Myanmar to assess the effects of *s.boulardii* in Acute Diarrhea. One hundred hospitalized children in Myanmar age range (3 months to 10 years) were included. Fifty were treated with *S. boulardii* for five days in addition to ORS and 50 were given ORS alone (control group). The mean duration of diarrhea was 3.08 days in the *S. boulardii* group and 4.68 days ($P < 0.05$) in the control group. Stools had a normal consistency on day 3 in 38 (76%) of 50 patients in the *S. boulardii* group compared with only 12 (24%) of 50 in the control group ($P = 0.019$). On day 2, 27 (54%) of 50 had less than three stools per day in the *S. boulardii* group compared with only 15 (30%) of 50 in the control group ($P = 0.019$). *Saccharomyces boulardii* shortens the duration of diarrhea and normalizes stool consistency and frequency. This study was similar to our study in terms of the improvement in diarrhea but the age group was different and patients were not observed for 7 days.

CONCLUSION

In children Acute diarrhea is a common admitting diagnosis and a major cause of morbidity and mortality. The use of *saccharomyces boulardii* is safe and has clear beneficial effect which is associated with speedy recovery. It improves stool frequency, consistency, reduce hospital stay and of great importance is, its anxiety relieving effects of parents because early recovery of their children.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Mitral Stenosis Associated Atrial Fibrillation and Use of Anticoagulation

Abdul Malik¹, Ikramullah², Nasir Islam¹, Muhammad Gibran Khan¹ and Ajab Khan¹

ABSTRACT

Objective: To determine the anticoagulation practice in local population suffering of mitral stenosis and atrial fibrillation that are actually high risk for thrombo embolism and are in fact candidates for anticoagulation

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at Cardiovascular Department Lady Reading Hospital Peshawar from 1.12.2014 to 30.10. 2015.

Materials and Methods: Study comprised 100 patients with atrial fibrillation (AF) and mitral stenosis were studied. All patients visiting OPD with EKG evidence of atrial fibrillation and echocardiography evidence of mitral stenosis were included.

Results: Mean age was 59.7 ± 13.7 years. Male were 39% (n=39). Only 25% (n=25) patients were adequately treated with anticoagulant therapy using warfarin. Most of the patients (34%) were on dual antiplatelet therapy. Factors associated with underutilization of anticoagulant therapy were, patient preference 40%, older age of 65 and above 15%, monitoring issue 23%, affordability 7% and prior complications due to anticoagulation therapy in 15%.

Conclusion: Atrial fibrillation is still an undertreated condition and most patients with AF and mitral stenosis are still deprived of benefits of anticoagulant therapy. Majority of these high risk patients are treated with antiplatelet therapy.

Key Words: Atrial fibrillation, Dual antiplatelet therapy, Warfarin

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INTRODUCTION

Atrial fibrillation is a major risk factor for repeated thromboembolism. Patients with AF are reported to have a five-fold increased risk of stroke.¹ The problem is worse in older population.² As compared to other known risk factors for stroke (hypertension, heart failure, and coronary heart disease), AF has the strongest association.¹ Warfarin is less commonly used in Asian population due to difficulty in achieving optimal anticoagulation and higher incidence of hemorrhagic stroke in Asian communities. Instead, antiplatelet therapy is commonly used in these patients which is neither effective nor safe in these individuals.³ Stroke secondary to atrial fibrillation is usually due to thrombi formed in the left atrium and left atrial appendage embolize to cause ischemic stroke.³ Patients with Mitral stenosis and atrial fibrillation is consider high risk for stroke and thrombo embolism and

according ESC and ACC/AHA guidelines for atrial fibrillation, all patients with mitral stenosis and atrial fibrillation should be properly anti coagulated in the form of warfarin.⁴ Oral anticoagulation (OAC) significantly reduces the risk of stroke among these high risk patients.^{4,5}

Most commonly used therapy for patients with valvular and non valvular AF is in the form of warfarin. Warfarin is having narrow therapeutic window and is associated with increased risk of bleeding which limits its use in clinical practice.⁶⁻⁸ Difficulties associated with warfarin therapy is the main cause of its under use^{9,10} and many patients are treated with aspirin, despite this drug being minimally effective and conferring a risk of bleeding similar to warfarin.^{11,12} In the UK, a survey of 1857 patients in (GRASP-AF) audit tool reported that 34% of patients with a CHADS2 score ≥ 2 did not receive OAC therapy.⁵ Currently before putting patients on OAC, risk stratification is done for stroke using a validated risk stratification tool^{4,5}, and new guidelines recommend using the CHA2DS2 - VASc score. Irrespective of CHADS VASc score, patients with mitral stenosis should be started on anticoagulation therapy.¹³

In spite of clear recommendation for anticoagulation still majority of patients are deprived of this therapy. Lack of knowledge of current guidelines, concern for the risk of bleeding, advance age, neurological deficits, dementia, and previous bleedings are suspected to influence the low rates in the usage of OAC in the clinical practice.¹⁴

¹. Department of Cardiovascular, Lady Reading Hospital Peshawar.

². Department of Cardiology, Nowshera Medical College Nowshera.

Correspondence: Dr. Ikramullah, Assistant Professor of Cardiology, Nowshera Medical College, Nowshera.
Contact No: 0313-4774433
Email: ikramcardio@yahoo.com

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The aim of this study is to find out the practice of anticoagulation in these high risk people and various factors responsible for under treatment of patients with atrial fibrillation in the form of anticoagulation. This will help to address those issues which are responsible for failure of practicing anticoagulation in our local population and to find out solution for improving guideline based practice.

MATERIALS AND METHODS

This is descriptive cross sectional study conducted at Cardiovascular Department Lady Reading Hospital Peshawar from 1.12 .2014 to 30. 10. 2015. Sampling technique was non probability consecutive sampling. Patients visiting OPD with EKG evidence of AF and echocardiographically proved Mitral stenosis were included in the study. All patients after informed consent were included in the study. Detail History was taken about the onset, duration, symptoms and treatment of AF and mitral stenosis. Data was collected and recorded on pre specified proforma. Data was analyzed using SPSS version 16 Numerical variables like age was presented as mean $\pm$ standard deviation. Categorical variables were expressed as frequency and percentages.

RESULTS

A total of 100 patients with atrial fibrillation and mitral stenosis were studied. Mean age was 59.7 ± 13.7 years. Male were 39% (n=39) while 61% (n=61) were female. Out of total patients only 25% patients were receiving warfarin therapy irrespective of whether target INR achieved or not. Most of patients were receiving dual anti platelet therapy (34%), while 8% of patients were not getting any therapy for stroke prevention and prevention of peripheral thromboembolism (Table 1).

Table No.1: Types of therapies used in patients with Mitral stenosis and atrial fibrillation (n=100)

Type of therapy	No.	%
DAPT	34	34.0
Anticoagulation	25	25.0
Aspirin	25	25.0
Clopidogrel	8	8.0
No therapy	8	8.0

Table No.2: Factors associated with underutilization of anticoagulation (n=100)

	No.	%
Patient Preference	40	40.0
Monitoring Issue	23	23.0
Affordability	7	7.0
Complications	15	15.0
Old age	15	15.0

There were many factors responsible for not putting these patients on warfarin therapy. Most common factor

was patient preference of not taking warfarin therapy (40%) after detailed discussion about its benefit, risk and monitoring issues. 23 % patients were from far flung areas and there was no facilities nearby available for PT/INR test (Table 2).

DISCUSSION

In our study only 25 % patients with AF and mitral stenosis were receiving anticoagulation for stroke prevention. Remaining patients were either on antiplatelet therapy or no therapy. This shows that most of patients in our local set up do not receive proper anticoagulation. Majority of our patients are usually put on antiplatelet medications in the form of clopidogrel, aspirin or dual antiplatelet medications. The problem is though worse in our local setup but exist worldwide. This fact is supported by a study conducted by Frewen et al¹⁴ in Ireland showing that only 40% of patients were prescribed anticoagulation. Tanislave et al¹⁵ studied same issue and found that only 45% patients were on anticoagulation. Though these studies were not only focused for mitral stenosis as they studied all patients who were candidate for anticoagulation either having mitral stenosis or high CHA₂DS VASc score.

Regarding various factors responsible for under treatment of patients who need anticoagulation we found that majority (40%) patients were not ready to take anticoagulation after detail discussion about its advantages, complications, monitoring issues and regular follow up. Other common causes were the patient's socioeconomic status who are not affording of regular purchasing of medicine and expenses of follow up and laboratory expenses. Due to lack of availability of facilities for PT/INR some patients were not prescribed warfarin. Some patients who experienced complications in past were never agree to take warfarin. Similar study was performed by O'Brien et al¹⁵ to find the various factors responsible for under treatment of patients who were candidate for anticoagulation. They found that major factor for under treatment of these patients is patient preference of not taking warfarin therapy. O'Brien et al¹⁶ found that in 27.5%, this was the cause of under treatment. This was also major factor in our study accounting for 40% causes of not taking warfarin. Same study also mentioned that old age and frailty is responsible for lake of anticoagulation in 17% patients which is similar to our findings. Contrary to their findings of 10% antiplatelet medications, we found higher frequency of patients taking antiplatelet medication due to the fact that most of these patients are usually treated by general physicians who either are unaware of the importance of anticoagulation or fear of complication and monitoring.

CONCLUSION

Atrial fibrillation is still an undertreated condition and most patients with AF and Mitral stenosis are still

deprived of benefits of anticoagulant therapy. Majority of these high risk patients are treated with antiplatelet therapy.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Presentation and Management of Primary Postpartum Haemorrhage

Management of
Postpartum
Haemorrhage

Summaira Hamza and Farida Kakar

ABSTRACT

Objective: To find out the various presentations and management of primary postpartum hemorrhage.

Study Design: Descriptive / Cross sectional study

Place and Duration of Study: This study was conducted at Department of Obstetrics and Gynaecology, Boland Medical College Hospital Quetta from February 2014 to March 2015.

Materials and Methods: Total 120 patients having age 20-40 years, who developed PPH within 24 hours of deliveries were selected for this study. Cases of intra-uterine fetal death (IUFD) or chronic medical illness were excluded from the study. Study was approved by ethical review committee and written informed consent was taken from all the patients. Base line investigations of all the patients were done.

Results: Minimum age of the patients of primary PPH was 20 years and maximum age was 40 years with mean age 32.43 ± 6.23 years. In age group 20-25 years there were 36 (30%) patients, in age group 26-30 years 26 (21.67%) patients, age group 31-35 years 19 (15.83%) patients and in age group 36-40 years 39 (32.5%) patients. Primiparous were 36 (30%) followed by Multiparous 81 (67.5%) and grand multiparous were 3 (2.5%). Uterine atony was the commonest cause of primary PPH that was observed in 78(65%) patients. Hysterectomy was done in 50 (41.6%) patients.

Conclusion: Maximum patients found in age group 36-40 years and most of the patients were multiparous. Uterine atony was the most common cause of primary PPH. Hysterectomy was performed in most of the cases.

Key Words: Maternal mortality, Hemorrhage, Primary postpartum, Uterine atony

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INTRODUCTION

Postpartum hemorrhage is a global issue and is an important cause of maternal mortality and morbidity worldwide. WHO defines PPH "as blood loss, exceeding 500 ml from genital tract, after delivery of baby".¹ According to American College of Obstetric & Gynecology (ACOG) "a hematocrit (Hct) fall of 10% or a hemorrhage that requires blood transfusion."^{2,3} It is leading cause of death in Pakistan and over 25,000 women die to PPH each year.³ Postpartum haemorrhage is of two types, primary PPH occurs within the 24 hrs of delivery while secondary PPH occurs after 24 hours upto 6 weeks after delivery.⁴ Uterine atony is the commonest cause (>90%) and occurs due to failure of contraction or retraction of myometrium to occlude sinuses embedded in it.⁵ Retained placental tissue or membrane may prevent good placental site retraction, so is another cause of

PPH.⁶ Beside these two, genital tract lacerations and coagulopathy are also causal factors of PPH.⁷ Certain risk factors are also known to be associated with each cause specific cause, like over distension of uterus in case of multiple gestation, polyhydramnios, macrosomia. Similarly exhausted uterus in case of augmentation or induction of labour and infection may be associated with uterine atony. Uterine anomalies, scarring of uterine wall or abnormally adherent placenta may lead to retained product of conception. Similarly for genital tract lacerations, instrumental delivery and macrosoma may be the associated factors. For coagulopathy abruptio placenta is a known association.²⁻⁴

It is important to identify the cause of PPH to manage the condition appropriate and to prevent fatal consequences of PPH. Along with mortalities prevention of morbidities is equally important.⁷ Management of PPH comprises of general measures for any cause and specific management for particular cause including medical treatment or surgical intervention.⁸ Complications of PPH include hypovolumic shock, which in turn leads to acute renal failure (ARF), adult respiratory distress syndrome (ARDS) and Sheehan's syndrome. Blood transfusion related complications like transfusion reaction or transmission of certain viral disease. Disseminated intravascular coagulopathy (DIC) is also a common complication.^{8,9} Maternal morbidity and mortality rises with delay in diagnosis

Department of Obstetrics & Gynaecology, Sandeman Provincial Hospital/Bolan Medical College Hospital Quetta.

Correspondence: Dr. Summaira Hamza, Assistant Professor, Department of Obstetrics & Gynaecology, Sandeman Provincial Hospital/Bolan Medical College Hospital, Quetta
Contact No: 03323007349
Email: summairahamza@gmail.com

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and intervention, thus the cornerstone of effective management is rapid diagnosis and intervention.¹⁰

MATERIALS AND METHODS

This was a cross sectional study conducted at Department of Obstetrics and Gynaecology, Boland Medical College Hospital Quetta from February 2014 to March 2015. Total 120 patients having age 20-40 years, who developed PPH within 24 hours of deliveries were selected for this study. Cases of intra-uterine fetal death (IUFD) or chronic medical illness were excluded from the study. Study was approved by ethical review committee and written informed consent was taken from all the patients. Base line investigations of all the patients were done. Causes of primary PPH were evaluating by examining the patient. All the causes like atonic uterus, retained placental tissue or membrane, genital tract laceration (extended episiotomy, perineal, vaginal, cervical or uterine tear) and coagulopathy were recorded on predesigned proforma. Standard medical management was given to all the patients. Surgical management was given if medical management failed. All the collected data was entered in SPSS version 18. Mean and SD was calculated for numerical variables and categorical data was presented as frequencies as percentages.

RESULTS

Minimum age of the patients of primary PPH was 20 years and maximum age was 40 years with mean age 32.43 ± 6.23 years. Patients were divided into 4 age groups i.e. age group 20-25 years, 26-30 years, 31-35 years and 36-40 years. In age group 20-25 years there were 36 (30%) patients, in age group 26-30 years 26 (21.67%) patients, age group 31-35 years 19 (15.83%) patients and in age group 36-40 years 39 (32.5%) patients (Table 1). Primiparous were 36 (30%) followed by multiparous 81 (67.5%) and grand multiparous were 3 [2.5%] (Table 2).

Table No.1: Age distribution (n = 120)

Age (years)	No.	%
20-25	36	30.0
26-30	26	21.67
31-35	19	15.83
36-40	39	32.5

Table No.2: Frequencies of parity

Parity	No.	%
Primiparous (Po)	36	30
Multiparous (P1-4)	81	67.5
Grand multiparous (P $\geq$ 5)	3	2.5

Uterine atony was the commonest cause of primary PPH that was observed in 78(65%) patients followed by retained placental tissue or membrane, 19(15.83%) patients, vaginal wall laceration 8(6.67%), cervical tear

4(3.33%), retained placenta 4 (3.33%), perineal tear 4 (3.33%) and extended episiotomy was observed 3 (2.5%) patients (Table 3). Hysterectomy was done in 50 (41.6%) patients, followed by B lynch suture was done in 1 (0.8%), internal iliac artery ligation 1 (0.8%), evacuation (12 (10%), manual removal of placenta 20 (16.67%), medical management 8 (6.7%) and perennial and cervical tear repair was done in 28 (23.4%) cases (Table 4)

Table No.3: Frequency of causes of primary PPH

Causes of primary PPH	No.	%
Uterine atony	78	65.0
Retained placental tissue or membrane	19	15.83
Vaginal wall laceration	8	6.67
Cervical tear	4	3.33
Retained placenta	4	3.33
Perineal tear	4	3.33
Extended episiotomy	3	2.5
Uterine tear	-	-
Coagulopathy	-	-

Table No.4: Frequencies for different management options

Management	No.	%
Hysterectomy	50	41.6
B-lynch suture	1	0.8
IIAL (Internal iliac artery ligation)	1	0.8
Evacuation	12	10.0
Manual removal of placenta	20	16.7
Medical management	8	6.7
Perennial & cervical tear repair	28	23.4

DISCUSSION

Primary postpartum haemorrhage is the blood loss of 500 ml or more in the 1st 24 hours of delivery of baby.¹¹ The prevalence varies from 4.5% to 19%. It is associated with significant maternal mortality and morbidity.¹²⁻¹³ In developing countries, 28% maternal deaths are caused by PPH prevalence in Pakistan is 34%.¹⁰

Minimum age of the patients of primary PPH was 20 years and maximum age was 40 years with mean age 32.43 ± 6.23 years. In age group 20-25 years there were 30% patients, in age group 26-30 years 21.67% patients, age group 31-35 years 15.83% patients and in age group 36-40 years 32.5% patients. The largest incidence was seen in patients aged between 36-40 years (60%). Age influence the occurrence of PPH. Advancing age is associated with primary PPH. In some studies the highest incidence of PPH was found in women more than 30 years of age.^{1,14} Kashanian et al¹² found decreases blood loss with increasing age and greatest blood loss found to occur in mothers aged 15-

19 years. But in the present study age limit was between 20-40 years.

In present study primiparas with PPH were 30% followed by multiparous 67.5% and grand multiparous were 2.5%.

Magann¹⁵ reported frequency of Primiparous as 41% which is higher than our study. But Hazara et al⁹ reported frequency of primiparas as 29% which is comparable with our study. In a study conducted by Khanum⁵ found 18% primiparous, 25% multiparous and 57% grand multiparous which differ from this study. The commonest cause of primary PPH was found to be uterine atony (65%). It was similar to the other local and international studies.^{1, 5, 13} In present study the most common procedure was hysterectomy which was performed in 41.6% patients.

In present study, hysterectomy was performed in 41.66% patients. In countries with high resources, haemorrhage which requiring hysterectomy is supposed life threatening condition.¹⁶⁻¹⁷ Sheikh et al reported in their study that uterine atony was one of the most common cause of PPH.¹

CONCLUSION

Maximum patients found in age group 36-40 years and most of the patients were multiparous. Uterine atony was the most common cause of primary PPH. Hysterectomy was performed in most of the cases.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Clinical Profile, Risk Factors, Complication and Hospital Outcome of Acute Myocardial Infarction among Patients in Coronary Care Unit Nishtar Hospital, Multan

Rabia Asif¹, Shahana Yasmeen² and Muhammad Imran³

ABSTRACT

Objective: To find out facts about clinical sign and symptoms, causing factors and complications of Acute MI among patients

Study Design: Descriptive / cross sectional study.

Place and Duration of Study: This study was conducted at the Coronary Care Unit, Nishtar Hospital Multan from April to December 2016.

Materials and Methods: Data were collected from 100 patients admitted to coronary care unit of Nishtar Hospital Multan, tertiary health care center. Patients 18 years of age or above admitted in the coronary care unit of Nishtar Hospital Multan, with acute myocardial infarction, ST segment elevation Myocardial infarction, Myocardial infarction less than 48 hours old were included while Patients less than 18 years of age, Myocardial infarction 48 hours old or more, on ST segment elevation myocardial infarction were excluded.

Results: Smoking (76%) and high blood pressure (23%) were the most common risk factors, followed by dyslipidemia (22%) in this study. The overall hospital mortality rate for this study was 15% -10 for males (66.7%) and 5% for females (33.3%).

Conclusion: Arrhythmias continue to be the most common complication of acute myocardial infarction, particularly during the first 48 hours. Acute myocardial infarction is a serious disease that has to be treated in intensive care unit of coronary heart disease. Death usually occurs with arrhythmia, and is a potentially reversible condition, the earliest treatment that can reduce mortality

Key Words: Myocardial infarction, hospital outcome, Clinical profile

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INTRODUCTION

It is impossible to find the first person to observe changes in cardiac rhythm. However, medical history reviews in this regard are helpful in identifying at least a few milestones in understanding this clinical problem. In ancient times it is said that the Egyptians were aware for the importance of impulse examination. The Chinese believed it as a key to diagnosing many conditions in the 6th century BC.

¹. Department of Radiology, Multan Institute of Kidney Disease, Multan.

². Department of Obstet & Gynae, Nishtar Hospital, Multan

³. Department of Medicine, Bahawal Victoria Hospital Bahawalpur.

Correspondence: Dr. Muhammad Imran, Post Graduate Resident in Medicine, Bahawal Victoria Hospital Bahawalpur.

Contact No: 0334 6475151

Email: dr.imrannasir111@gmail.com

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Only at this time, it is said that Ayurveda doctors know 600 types of pulses. In 1628, Sir William Harvey described the circulation of blood; in 1776, William Withering recognized the irregular pulse of atrial fibrillation. In 1835, Boull and recognized the pulse, two important abnormalities, which he called pulsed intermittent and ataxia (possibly atrial fibrillation).

Coronary care unit provide a wealth of knowledge about the incidence of arrhythmias and the prognosis of acute myocardial infarction in hospitalized patients. Coronary artery disease in the Pakistanis risk is 3-4 times higher than the United States white, six times higher than China. In Asian s¹ the prevalence of coronary artery disease has to be viewed with concern. Pakistanis are susceptible to coronary artery disease as a community at a very young age ².

In a study by SZ Abildstrom et al.³, the risk of sudden cardiac death compared to sudden cardiac death was relatively high in younger groups, but absolute severe cardiac death was higher in the upper age group than younger.

In the Framingham Heart Study of male majority observed ⁴.

In a prospective community-based study by Shmuel Gottlieb et al.⁵, consecutive coronary care unit in hospitalized patients with acute myocardial infarction in the mid-1990s showed that women's fares were significantly worse than men's for 30 days. In a study by Wolfe CL et al.⁶ polymorphisms found in VT in 2% of patients with Myocardial infarction were often rapid, with symptoms of hemodynamics and electrical instability. In a study by Torre et al.⁷ myocardial infarction observed that 2% of patients sustained within 48 hours of VT were transient and not associated with long-term risk of sudden cardiac death.

MATERIALS AND METHODS

Data were collected from 100 patients admitted to coronary care unit of Nishtar Hospital Multan,, tertiary health care center. Patients 18 years of age or above admitted in the coronary care unit of Nishtar Hospital Multan, with acute myocardial Infarction, ST segment elevation Myocardial infarction, Myocardial infarction less than 48 hours old were included while Patients less than 18 years of age, Myocardial infarction 48 hours old or more, on ST segment elevation myocardial infarction were excluded.

Data Analysis: Data was put in SPSP software versions 21. Results were presented in the form of frequencies, percentages and tables.

RESULTS

Out of 100 cases, 82 were males and 18 were females. The male to female ratio was 4.5:1. Smoking (76%) and hypertension (23%) were the most common risk factors in the present study, followed by dyslipidemia (22%). (Table 1)

Chest pain (96%) was the most common presenting symptom followed by sweating (81%) and vomiting (30%). (Table 2) 56 (56%) patients were admitted within 6 hours of onset of symptoms. (Table 3) Left ventricular failure was seen in 27 patients (27%). (Table 4)

Table No.1: Coronary risk factors

Risk factor	No of cases	Percentage
Smoking	76	76
Hypertension	23	23
Diabetes Mellitus	21	21
Dyslipidemia	22	22
Obesity	7	7
Family history of IHD	7	7

Maximum numbers of patients i.e. 52% develop acute MI between 4 am to 12 noon. The next highest number of patients i.e. 22(22%) developed acute MI between 4pm to 8pm. (Table 5)

Out of 83 patient's thrombolysis, 54 patients had arrhythmias. The overall in hospital mortality in this study was 15 % - 10 were males (66.7%) and 5 were

females(33.3%). of the 15 patients who expired, 10 patients (66.7%) had anterior wall MI and 5 (33.3%) had inferior wall MI. 8 of the 15 deaths (53.3%) occurred within in 24 hours of admission.

Table No.2: Symptoms present at time of admission

Symptoms	No of cases	Percentage
Chest pain	96	96
Sweating	81	81
Vomiting	30	30
Breathlessness	17	17
Giddiness	13	13
Palpitation	7	7
Pain abdomen	4	4
Weakness of Right upper and lower limb	1	1

Table No.3: Time interval between onset of symptoms to hospitalization.

Duration (hours)	No of Patients	Percentage
≤ 1	2	2
1-6	56	56
7-12	24	24
13-24	09	09
25-48	09	09

Table No.4: Complications other than arrhythmias

Complications	No of cases	Percentage
Left ventricular failure	27	27
Cardiogenic shock	6	6
Congestive cardiac failure	1	1
Pericarditis	2	2
Intracranial hemorrhage	3	3

Table No.5: Circadian periodicity of onset of chest pain/ symptoms

Time of onset of chest pain/Symptoms	No of patients	%age
12 mid night to 4 am	10	10
4am to 8am	28	28
8am to 12noon	14	14
2 noon to 4 pm	10	10
4 pm to 8 pm	22	22
8pm to 12 midnight	06	06

DISCUSSION

There were 82 men (82%) and 18 women (18%) in this study. The ratio of male to female is 4.5: 1. This finding was consistent with Maggioni et al.⁸ - 4.65: 1; Pula et al.⁹ - 4.2: 1 and Elizabeth GC¹⁰ - were 5.2:1.

Smoking is the most common risk factor that exists in up to 76 patients (76%) in this study. This figure was based on the findings of Magej et al.¹¹ which has been reported in 73.3% of patients.

21% of patients are diabetic in this study. This was compared with the study of Bata et al.¹² as a risk factor for 19.09% of patients with diabetes mellitus.

In this study 23% of patients with hypertension were present. This finding is comparable with Kundue et al.¹³ where 22.55% of patients suffering from hypertension. This study 22 (21%) patients with hypercholesterolemia. This was closely related to the study of Bata et al. [12] reported by Majid et al.¹¹ that it was present in 21.43% and 21% of patients, respectively. The most common site of infarction in this study was anterior wall Myocardial infarction 66% of patients comparable to the authors Gupta et al.¹⁴ Kundu et al.¹³

In this study, 30% of the incidence of MI in the inferior wall was comparable to that of Witt et al.¹⁵ indicating that the incidence was 44% and 33.78%, respectively.

CONCLUSION

Arrhythmias continue to be the most common complication of acute myocardial infarction, particularly during the first 48 hours. Acute myocardial infarction is a serious disease that has to be treated in intensive care unit of coronary heart disease. Death usually occurs with arrhythmia, and is a potentially reversible condition, the earliest treatment that can reduce mortality

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Age and Gender Specific Characteristics of Hospitalized Patients with Burn Injuries

Ehmer-Al-Ibran¹ and Hira Tariq²

ABSTRACT

Objective: Age and gender is an important risk factor of burn injury. The aim of this study is to determine the relationship of age and gender with other possible risk factors of burn injuries, like educational status, mechanism and intent of burn injury.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at Burns Centre of Civil Hospital Karachi from 2013 to 2014.

Materials and Methods: 154 hospitalized patients with burns were sequentially interviewed. Information about age, gender, mechanism of burn injury, intent of burn injury and educational status was collected by questionnaire.

Results: High proportion of self-inflicted accidental electrical burn injury was found in young and male patients. Univariable stage showed that prevalence of electrical burn injury was higher in young age group (93.3%) and male patients (100%) as compared to chemical, flame/fire and scald/contact. However, the prevalence of self-inflicted accidental burn injury was also higher in young age group (86.4%) and male patients (100%) as compared to patients with burn injury accidentally by other, deliberately self-harm and assault with significant p value.

Conclusion: People who are young and male are more prone to have self-inflicted accidental electrical burn injury while people who are old and female are more likely to have scald/contact related burn injury due to assault.

Key Words: Mechanism of burn injury, Intent of burn injury, Self-inflicted accidental burn, Civil Hospital Karachi, Electrical burn

Citation of article: Ibran E, Tariq H. Age and Gender Specific Characteristics of Hospitalized Patients with Burn Injuries. Med Forum 2017;28(2):126-129.

INTRODUCTION

Burn is worldwide public health problem which is interrelated with patients' economic, psychological and physical insinuations. Moreover, the risk of burn injuries is highly influenced by patients' families and society (1, 2). Worldwide, burns injuries are at the fourth rank, World Health Organization (WHO) estimated that almost 265,000 people die every year due to burn injuries and approximately 11 million patients are obligated to medical treatment nevertheless most of the injuries (Almost 90%) arise in developing countries^{1,3,4}.

According to the WHO, the burden of burn injuries is two-third in developing countries, likewise; the African, Eastern Mediterranean and South-East Asia regions are on great threat¹.

The annual incidence of burn injuries is 187 in Eastern Mediterranean and 243 in South-East Asia regions per 100,000, correspondingly burns mortality is unequally distributed between low and high income countries, every 11 person die per 100,000 in south east Asia region and only 1 die per 100,000 in high income countries and similar proportions tend to occur in different gender and age groups^{1,2}. The largest inconsistencies in injury mechanism is, the pattern of burn injury differs in gender and age groups. Likewise, the mortality rate due to fire-related burn injury is high for males compared to females^{1,5}.

To reduce the risk of burn injuries, we need to determine certain epidemiological variables like age, gender, educational status, mechanism and intent of burn injury to find out the inconsistency of burn injury mechanism. Through this we can create proper awareness among people of Pakistan in order to reduce risk factors.

MATERIALS AND METHODS

It is a cross sectional study which was conducted in Burns Centre of Civil Hospital, Karachi, Pakistan. The data were prospectively collected by Questionnaire-based survey from all hospitalized burn patients with 18 to 70 years of age. It was conducted between August 2013 and February 2014 with the Institutional Review

¹. Burns Centre, Civil Hospital, Karachi.

². School of Public Health, Dow University of Health Sciences, Karachi

Correspondence: Dr. Ehmer-Al-Ibran, Burns Centre, Civil Hospital, Karachi.

Contact No: 0333-2262820

Email: dr.ehmer@yahoo.com

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Board (IRB) of Dow University of Health Sciences (DUHS)'s approval. Mentally ill and unconscious patients were excluded. Hospitalized patients were the population of interest in study. Information about age, gender, mechanism of burn injury, intent of burn injury and educational status was collected.

Statistical analysis: Data were collected and entered by us. Statistical analyses was performed by using IBM SPSS version 21. For categorical variables, Frequency and percentages were figured like gender, and educational status, mechanism of burn injury and intent of burn injury. For age, mean and standard deviation were calculated. Further, age as continuous variable converted into two categories which were ≤ 40 years and ≥ 40 years. At univariable stage, the educational status, mechanism of burn injury and intent of burn injury has been seen among subjects with demographic characteristics (age and gender) by using chi-square test. P-Value 0.05 was considered significant.

RESULTS

A total of 154 subjects aged 18 to 70 years and above were interviewed. In younger people, prevalence of $\leq$ Matric educational status was higher (92.6%) as compared to $\geq$ Intermediate (84.6%) and Illiterate (65.8%) (P-value <0.05). In younger age group, prevalence of electrical burn injury was higher (93.3%) as compared to chemical (80%), flame/fire (75.9%) and scald/contact (53.8%) (P-value <0.05). In younger age group, prevalence of self-inflicted accidental burn injury was higher (86.4%) as compared to patients with burn injury accidentally by other (80%), deliberately self-harm (85.7%) and assault (31.6%) (P-value <0.05). (Table 2) In male patients, $\geq$ Intermediate educational status was found in 100% patients as compared to $\leq$ Matric (85.3%) and Illiterate (67.1%). In female patients, prevalence of illiterate educational status was higher (32.9%) as compared to $\leq$ Matric (14.7%) and Intermediate (0%). Prevalence of electrical burn injury was higher among male patients (100%) as compared to

Flame/fire (72.4%), chemical (60%) and scald/contact (46.2%). Prevalence of scald/contact type of burn injury was higher among female patients (53.8%) as compared to chemical (40%), flame/fire (27.6%) and electric (0%) (P-value <0.05). Prevalence of deliberate self-harm burn injury was higher in male patients (100%) as compared to self-inflicted burn injury (86.4%), accident by other (80%) and assault (15.8%). Prevalence of burn injury due to assault was higher among female patients (84.2%) as compared to burn injury due to accidentally by other (20%) and accident by self (13.6%) (P-value <0.05). (Table 2).

Table No.1: Demographics characteristics of patients (N=154)

	n	%
Age (Mean $\pm$ S.D)	30.69 $\pm$ 11.93	
≤ 40 Years	122	79.2
> 40 Years	32	20.8
Gender		
Male	120	77.9
Female	34	22.1
Educational Status		
Illiterate	73	47.4
$\leq$ Matric	68	44.2
$\geq$ Intermediate	13	8.4
Mechanism of Injury		
Flame/Fire	58	37.7
Scald/Contact	26	16.9
Electric	60	39
Chemical	10	6.5
Intent of Injury		
Accident by self	118	76.6
Accident by other	10	6.5
Deliberate Self harm	7	4.5
Assault	19	12.3

N: number, S.D: Standard Deviation

Table 2: Age and Gender specific characteristics of Burn Injury (N=154)

	Age			Gender		
	≤ 40 n (%)	> 40 n (%)	p-value [†]	Male n (%)	Female n (%)	p-value [†]
Educational Status						
Illiterate	48 (65.8)	25 (34.2)	0.001**	49 (67.1)	24 (32.9)	0.005*
$\leq$ Matric	63 (92.6)	5 (7.4)		58 (85.3)	10 (14.7)	
$\geq$ Intermediate	11 (84.6)	2 (15.4)		13 (100)	0 (0)	
Mechanism of Injury						
Flame/Fire	44 (75.9)	14 (24.1)	0.001**	42 (72.4)	16 (27.6)	0.001**
Scald/Contact	14 (53.8)	12 (46.2)		12 (46.2)	14 (53.8)	
Electric	56 (93.3)	4 (6.7)		60 (100)	0 (0)	
Chemical	8 (80)	2 (20)		6 (60)	4 (40)	
Intent of Injury						
Accident by self	102 (86.4)	16 (13.6)	0.001**	102 (86.4)	16 (13.6)	$<0.001^*$
Accident by other	8 (80)	2 (20)		8 (80)	2 (20)	
Deliberate Self harm	6 (85.7)	1 (14.3)		7 (100)	0 (0)	
Assault	6 (31.6)	13 (68.4)		3 (15.8)	16 (84.2)	

DISCUSSION

The findings of our study publicized high prevalence of accidental burn by self among hospitalized patients. It was not able that males and young adults were experience higher with burn injuries^{6,7,8,9,10,11}. Avoidable reality is that these young people are losing their lives due to carelessness and lack of alertness. Males belonging to this age group are young, whose loss divests the family of the sole bread winners¹². Our finding complements previous studies conducted in various regions of developing countries that under the age of 35 years more susceptible of burns^{12,13,14}. Recent Pakistan National Emergency Department Surveillance (Pak-NEDS) also suggested that patients belonging to age group 10 to 29 years exposed higher burns¹⁵.

Our study confirms that younger patients with burn injury, prevalence of $\leq$ Matric educational status was significantly higher as compared to $\geq$ Intermediate and illiterate. Nevertheless, the prevalence of illiterate educational status was higher (67%) in male as compared to female (32%). These outcomes also matched with the study conducted in Iraq¹⁶ and in Pakistan¹⁷ however, it is proved that illiteracy unauthorized people and make them less attentive and competent.

This study also illustrated that in young male group, prevalence of electrical burn injury was significantly higher. In contrary; Prevalence of scald/contact type of burn injury was higher among female patients (53.8%). However, different studies of developing countries have reported that males were more prone to electric burns than females, while females were more prone to flame burns than males which is slightly differ to our finding^{18,19,20}. Moreover, it is reported that young females were more susceptible to burn in home or closed place, while young males in industrial and other work related events^{17,18,19}.

We found that, prevalence of self-inflicted accidental burn injury was significantly higher as compared to patients with burn injury accidentally by other, deliberately self-harm and assault in younger age group. Plausible reason is reported that in females, contact with hot objects in kitchen are mostly associated with self-inflicted accidental burn while in males, common circumstances are contact with loose electrical wires and hot chemical in industries^{16,17}.

Our study found higher association between deliberate self-harm burn injuries with male patients. Our finding is concurrent with previous study conducted that deliberate self-harm burn was the strongest factor and many of them were those who had exposure to physical or psychological disorder and had mentally traumatic events at home²¹.

On the other side, we found that Prevalence of burn injury due to assault was higher among female patients

and a study of Pakistan suggested that the main cause of assault is marital conflict and dissatisfaction²².

CONCLUSION

People who are young and male are more prone to have self-inflicted accidental electrical burn injury while people who are old and female are more likely to have scald/contact related burn injury due to assault.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Relationship Between Frequencies of Blood Donations with Iron Deficiency Anemia

Saima Aqil¹, Ali Raza Memon², Farheen Shaikh², Farhan Jaleel³ and Saiqa Tabassum³

ABSTRACT

Objective: To see the relationship between frequencies of blood donations with iron deficiency anemia.

Study Design: Cross sectional Study

Place and Duration of Study: This study was conducted at Civil Hospital Karachi, Pakistan in the month of November to December 2015.

Materials and Methods: Total 120 male subjects between the ages of 25 – 40 years of were recruited for this study from the Blood Bank and pathological laboratory civil hospital Karachi.

Results: We found that hemoglobin concentration was significantly higher ($df=118$, $t=6.834$, $p<0.01$) in group A (10.68 ± 2.7) as compared to group B (7.81 ± 1.79) indicating that persons that donate blood frequently have lower hemoglobin levels and are in anemic state.

Conclusion: The current study concluded that iron status of body gets severely affected by frequent blood donations.

Key Words: Iron deficiency anemia, Ferritin, Hemoglobin, Blood donation

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INTRODUCTION

Blood donation is the common practice all over the world because this tissue is easily donated in different life saving conditions. Generally, blood donors are considered to have a good health, and have been reported to live a healthier life and have a lower mortality compared to the general population¹. But the only known significant disadvantage of blood donation is the potential risk of iron deficiency (ID). Iron is an important element in the human metabolism that has a central role in erythropoiesis and many other intracellular processes occurring in the body². Iron deficiency is a global health issue estimated to concern as many as 2.7 billion people effected worldwide with a high prevalence in blood donors¹. It is the most common nutritional deficiency worldwide which leads to reduced work capacity³, impaired scholastic achievements and increase fatigue¹.

The impact of blood donation on iron status has been studied since the late 1970s⁴. Normal iron stores in healthy men are about 1000 mg, whereas in healthy females only about 300 mg. A whole blood donation depletes the donor of approximately 225–250 mg of iron during which up to 425–475 ml of whole blood are withdrawn⁵.

There is 3.2mg of iron present in 1 gram of hemoglobin and in normal persons 50mgs of iron present in 100ml of blood, so when a person donates a single pint it means 225mgs of iron has been lost from body² leading to subsequent mobilization of iron from body stores⁵. Dietary absorption of iron can be up to 3.5–4 mg/day when iron stores are low, less when iron stores are higher⁵. So, The RBC's and hemoglobin count will return to normal values within 4 weeks if person not sufferer from iron deficiency anemia, and longer to recover iron stores. In order to donate frequently, many donors may require iron supplements⁵ because synthesis of hemoglobin, myoglobin, and cleavage of hemoglobin also influence by the action of iron. 30 mgs of iron per day required for synthesis of new molecules of hemoglobin. In Human body, Iron stores in liver, spleen and bone marrow in the form of ferritin and hemosiderin. When the blood loses or donated these storage forms of iron has been activated and give quick supply of iron in blood loss conditions⁶. Hence adequate iron stores are very important in maintenance of the donor's health⁷.

It is recommended internationally that a healthy individual can donate blood up to four times a year i.e. at 3- monthly intervals as iron stores can be depleted if

¹. Department of Biochemistry, Altamash Institute of Dental Medicine Karachi.

². Department of Biochemistry, Liaquat University of Medical & Health Sciences Jamshoro, Sindh

³. Department of Biochemistry, Liaquat College of Medicine & Dentistry, Karachi.

Correspondence: Prof. Dr. Farhan Jaleel, HOD, Biochemistry, Liaquat College of Medicine & Dentistry, Karachi.
Contact No: 03002275457
Email: fjaleel@yahoo.com

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blood is donated more frequently. An increase in the frequency of blood donation is liable to result in excessive iron loss and development of iron deficiency anemia⁵ which may be consequence of donating blood at a rate that is beyond the ability of their body to compensate⁷. Studies have reported that continuous repeating donations effect on the serum ferritin level and it will take part in genesis of iron deficiency anemia⁸. The frequency of ID is high in blood donors and more dependent on the frequency of donations than on the cumulated number of donations². It is evident that in donors with repeated donations iron demands increases, even though the absorption of nutritional iron among donors is much more efficient than non-donors, however, a donation frequency of more than 4 units per year cannot be compensated by iron absorption and results in an iron deficiency⁶. Number of studies up till now has addressed this issue but unfortunately very few studies concerning this issue are conducted in Pakistan. So, the object of present study is to see the relationship between frequencies of blood donations with iron deficiency anemia by assessing hemoglobin which is simplest technique to identify anemic donors and serum ferritin which reflect body iron stores.

MATERIALS AND METHODS

Subjects: Total 120 male subjects between the ages of 25 – 40 years of were recruited for this study from the Blood Bank and pathological laboratory civil hospital Karachi. These 120 subjects divided into two different groups; (Group A & B) each group contains 60 subjects. Group A subject donated 4-6 times per year while Group B 7-9 times per year.

Study area: This study was conducted at Civil Hospital Karachi, Pakistan in the month of November - December 2015. Karachi is the largest and most populous city in Pakistan and 5th largest metropolitan city in the world. Karachi is the capital of Sindh province. The estimated population is around 23.5 million.

Inclusion/Exclusion criteria: The subjects having history of alcoholism, hepatitis B & C, malaria, malnutrition etc were excluded from this study.

Sample Collection: After given proper information and taken written consent from all participants in this study, 5ml of fresh venous blood was drawn from each subjects by a clean vein puncture from the median cubital vein, 3ml delivered into an iron free dried plain tube and 2ml drawn in hemoglobin meter. The samples were allowed to clot at room temperature and centrifuged to separate the serum. All serum samples were stored at -70°C and kept under these conditions until chemical analysis was performed.

Biochemical Analysis: The hemoglobin levels in whole blood were determined immediately with portable hemoglobin meter. While the serum ferritin

levels were estimated by Enzyme-Linked Immunoassay method (ELISA).

Statistical Analysis: The statistical analysis of data for biochemical analysis was done using SPSS software version 20.0 for windows. Comparisons between two groups were made using the Student's *t*-test. Values of $p < 0.05$ were considered statistically significant.

RESULTS

In the present study we have determined the hemoglobin and ferritin concentration in two different repeated/frequent blood donor groups varying in their frequency of donating blood. Group A subject donated 4-6 times per year while Group B subjects donated 7-9 times per year. Our aim is to see the relationship between frequencies of blood donations with iron deficiency anemia by assessing hemoglobin and serum ferritin levels in Pakistani population. We have found that hemoglobin concentration was significantly higher ($df=118$, $t=6.834$, $p<0.01$) in group A (10.68 ± 2.7) as compared to group B (7.41 ± 1.79) indicating that by persons that donate blood frequently have lower hemoglobin levels and are in anemic state.

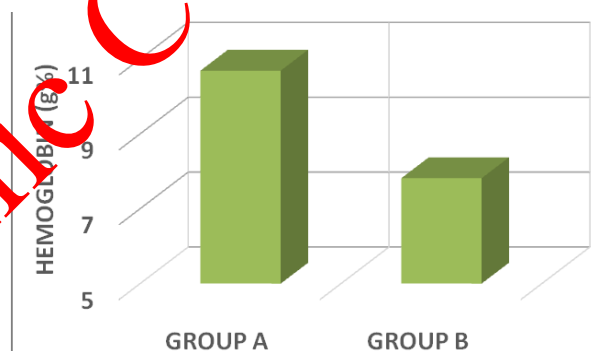


Figure No.1: Hemoglobin

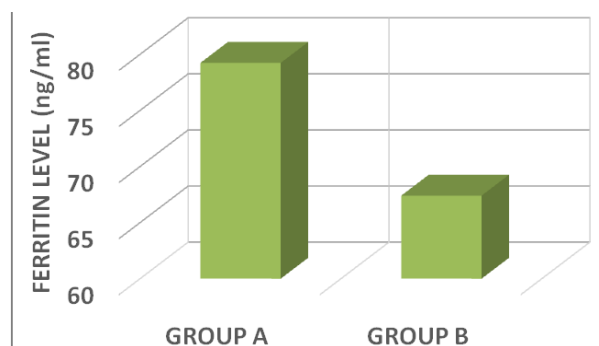


Figure No.2: Serum Ferritin

Statistical analysis of serum ferritin levels showed that concentration of serum ferritin is significantly lower ($df=118$, $t=5.594$, $p<0.01$) in Group B subjects (67.4 ± 12.25) that donated blood 7-9 times per year as compared to Group A subjects (79.2 ± 10.87) that donated 4-6 times per year indicating frequent blood

donations reducing the iron stores so the ferritin level drops.

In order to understand the relationship between serum ferritin levels and hemoglobin content in both blood donation groups a Pearson's correlation test was performed. The results of correlation showed that there is positive relation between hemoglobin content and ferritin levels in the overall data ($r=0.386$, $p<0.01$) showing that hemoglobin content is dependent upon the ferritin level as ferritin level increases the hemoglobin content also increases and as it drops the hemoglobin content also reduces leading to anemic state. While when correlation analysis was performed on blood donation groups then we found that in group A there is no significant relation between serum ferritin level and hemoglobin content however in group B there is a significant relation ($r=0.482$, $p<0.01$) between serum ferritin level and hemoglobin content.

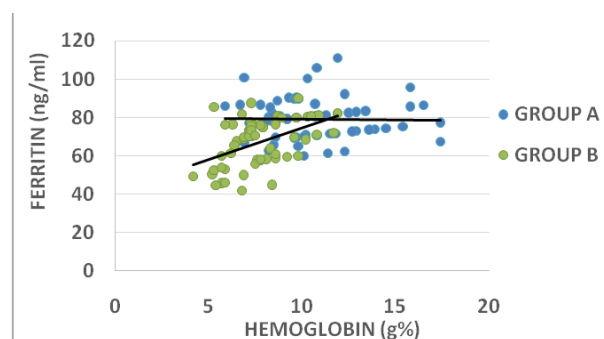


Figure No.3: Correlatoin between ferritin and HB

DISCUSSION

The aim of present study is to find out the relationship between frequencies of blood donation with iron deficiency anemia. For this purpose, hemoglobin content which is the simplest technique to identify anemic donors and serum ferritin levels which are the indicators of body iron stores have been determined in two different repeated blood donor groups varying in their frequency of donating blood in the manner that group A subject donated 4-6 times per year while Group B subjects donated 7-9 times per year. Findings of the present study showed that frequency of blood donations affecting the health of donor via affecting the iron stores of the body.

Reports have shown that iron depletion is common among blood donors⁵. It has shown that the rate of donation per person depends upon the storage of iron and hemoglobin concentration⁹. It has been recommended internationally that 3 – 4 blood donations per year are authentically safe for a person's health as RBC's and hemoglobin count take at least 4 weeks in order to return to normal values if person not sufferer from iron deficiency anemia¹⁰. It has been evident that following blood donation iron content has been lost to about 0.5 mg per ml of blood donated and if it is not compensated or blood is donated repeatedly then it may

lead to chronic iron deficiency and ultimately to iron deficiency anemia¹¹. Individuals at risk of developing iron deficiency can be detected only by assessing serum ferritin concentration which is the more sensitive indicator of body iron stores⁴. Although, hemoglobin content is measured routinely for assessing the donor's eligibility and a cutoff value of hemoglobin of 12.5 g/dL is often recommended before a blood donation is made¹² but studies have shown that it is a late indicator of iron deficiency and are inadequate to detect the donors having iron deficiency without anemia^{4,13} that's why serum ferritin is considered as a convenient marker of body's iron status⁵. So, that's why in the present study along with measuring the hemoglobin concentration, the serum ferritin content was determined to study the effect of frequent blood donation on iron status of body.

Findings of current study showed that hemoglobin and serum ferritin levels were lower in Group B subjects that donated blood 7-9 times per year as compared to Group A subjects that donated 4-6 times per year indicating that frequent blood donations reducing the iron stores of body at the serum ferritin content reduces eventually leading to loss in hemoglobin content hence developing iron deficiency anemia. These results are in accordance with previous findings that iron deficiency is more prevalent in repeated/frequent blood donors^{1,6,14}. It is reported that among frequent donors 66% woman and 49% men were iron deficient^{14,15}.

CONCLUSION

Hence, from the current study it has been concluded that iron status of body gets severely affected by frequent blood donations so it has been recommended to donate blood 3-4 times a year not more than that. It is also recommended that along with hemoglobin content, the serum ferritin levels must in every blood donor must also be measured before undergoing blood donation. In addition to this it is advised to recommend the use of iron supplements and appropriate diet to the regular donors so that their iron stores will be restored and maintained more effectively.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Frequency of Endometrial Hyperplasia in Premenopausal Women with Heavy Menstrual Bleeding / Abnormal Uterine Bleeding

Fatima Nazim, Zartaj Hayat and Nosheen Akhtar

ABSTRACT

Objective: This study was performed with an aim to determine the frequency of different types of endometrial hyperplasia in premenopausal women presenting with menstrual irregularity.

Study design: Descriptive / cross-sectional study

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynaecology, Fauji Foundation Hospital, Rawalpindi from September 2011 to March 2012.

Materials and Methods: 263 patients aged between 40 to 50 years having heavy menstrual bleeding or abnormal uterine bleeding were enrolled in the study using non probability consecutive sampling technique. Transvaginal ultrasound was performed to measure the endometrial thickness which was followed by endometrial sampling, done by pipelle endocurette. Histopathology reports were reviewed

Results: Out of 263 patients, endometrial hyperplasia was diagnosed in 68 patients. The frequency of various types of endometrial hyperplasia i.e. simple hyperplasia without and with atypia, and complex hyperplasia without and with atypia was found to be 60.3%, 17.6%, 14.7% & 7.3% respectively. Mean age of patient in the study was 45.3 ± 3.2 years. 91.9% of the patients were multiparous. 67.6% of the patients presented with heavy menstrual bleeding and 32.2% presented with abnormal uterine bleeding. 60.2% of the patients have endometrial thickness more than 10mm.

Conclusion: Premenopausal women with menstrual irregularity should be evaluated for endometrial hyperplasia as it is precursor for endometrial carcinoma so that early detection and treatment improves their quality of life.

Key Words: Endometrial hyperplasia, HMB, AUB, Transvaginal ultrasound, Endometrial thickness, Pipelle endocurette.

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INTRODUCTION

Endometrial Hyperplasia is the non-invasive proliferation of the endometrial epithelium.¹ Endometrium is capable of marked hyperplasia due to prolonged and unopposed estrogen exposure.² Based upon architectural complexity and nuclear cytology, endometrial hyperplasia is further sub grouped as simple or complex hyperplasia, with or without atypia.³ The earliest proliferation shows simple tubular architecture with crowded glands. The advance proliferation is characterized by glands with complex architecture which may contain typical cells.⁴ Although endometrial carcinoma is the commonest gynaecological cancer in United States with the incidence of 23.2 per 100,000 women, the data available about the incidence of endometrial hyperplasia is limited.⁵

Department of Obstetrics and Gynaecology, Fauji Foundation Medical College / Hospital, Rawalpindi.

Correspondence: Fatima Nazim, Senior Registrar, Department of Obstetrics and Gynaecology, Fauji Foundation Medical College / Hospital, Rawalpindi.

Contact No: 0323-5130225

Email: fatimanazim15@gmail.com

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The frequency of endometrial hyperplasia was found to be 13.2% in a study conducted by Mariam Abid.⁶ The incidence of simple, complex and atypical endometrial hyperplasia in a study performed by Wentz was found to be 5.1%, 2.6% & 1.3% respectively.⁷ In a study conducted by Kurman et al³ the risk of progression to carcinoma was 23% in patients having endometrial hyperplasia with atypia while it was about 2% in patients having hyperplasia without atypia with a follow up of 13 years. Co-existent carcinoma with atypical hyperplasia ranges from 25 – 50%.⁶

Clinical presentation of endometrial hyperplasia is heavy menstrual bleeding or abnormal menstrual bleeding. Risk factors for endometrial hyperplasia includes obesity, early menarche, late menopause, nulliparity, diabetes and unopposed estrogen therapy. Endometrium is the best accessible tissue for histopathologic evaluation of abnormal uterine bleeding, therefore, different methods are devised for endometrial sampling. Among these hysteroscopic guided endometrial biopsy is the method of choice.⁸

The aim of conducting this study was to estimate the frequency of endometrial hyperplasia in premenopausal women presenting with heavy menstrual bleeding (HMB) / abnormal uterine bleeding (AUB) which helps in estimating the burden of disease as the patient and the health care department have to sustain the expenses

for diagnostic evaluation, medical and surgical treatments. This study also emphasizes on the fact that since endometrial hyperplasia is a premalignant condition, its early detection and treatment results in prevention of morbidity and mortality caused by endometrial hyperplasia in premenopausal women.

MATERIALS AND METHODS

This study was conducted in the department of Obstetrics and Gynaecology, Fauji Foundation Hospital, Rawalpindi from September 2011 to March 2012. 263 patients having age ranging from 40-50 years presenting with HMB or AUB were enrolled in the study using non probability consecutive sampling technique. Patients with fibroid uterus, cervical polyps, genital tract tumours, hepatic disease, coagulation disorders, hyper / hypothyroidism or taking tamoxifen were excluded from the study.

A detailed history was taken from the patients. After that general physical, systemic, speculum and bimanual examinations were done. Endometrial thickness was measured by performing transvaginal ultrasound. Routine investigations like blood group & Rh type, blood complete picture, random blood glucose and hepatitis B, C screening were done. Endometrial sampling was performed by pipelle endocurette on OPD basis and the endometrial curettings obtained were sent for histopathologic examination. The results were entered in the performa. The elements of bias and confounders were controlled by strictly following the selection criteria.

RESULTS

The range for patient's age was between 40-50 years. Amongst them, the most vulnerable age group was between 44-47 years (48.5%) Table 1. Majority of the patients were multiparous (91.1%) Table 2.

Table No. 1: Age distribution of patients having endometrial hyperplasia (n=68)

Age Group	Number of Cases	Percentage
40-43 Years	14	20.5%
44-47 Years	33	48.5%
48-50 Years	19	27.5%

Table No.2: Parity of patients with Endometrial Hyperplasia (n=68)

Parity	Number of Cases	Percentage
Nulliparous	6	8.8%
Multiparous	62	91.1%

Table No.3: Pattern of Menstrual Irregularity in patients of Endometrial Hyperplasia (n=68)

Pattern of Bleeding	No. of Cases	Percentage
HMB	46	67.6%
AUB	22	32.3%

HMB was found to be the commonest menstrual irregularity in patients having endometrial hyperplasia (67.6%) Table 3. Endometrial thickness measured on transvaginal ultrasound was more than 10mm in 41 cases (60.2%) of endometrial hyperplasia, Table 4.

Out of 263 patients 68 (25%) were diagnosed with endometrial hyperplasia. The commonest type of endometrial hyperplasia was found to be simple hyperplasia without atypia (60.3%) Table 5.

Table No. 4: Endometrial Thickness measured by Transvaginal Ultrasound (n=68)

Endometrial Thickness	Number of Cases	Percentage
5-7 mm	9	13.2%
8-10 mm	18	26.4%
> 10mm	41	60.2%

Table No.5: Types of Endometrial Hyperplasia (n=68)

Type	Number of Cases	Percentage
Simple Hyperplasia without atypia	14	60.3%
Simple Hyperplasia with atypia	6	8.8%
Complex Hyperplasia without atypia	16	23.5%
Complex Hyperplasia with atypia	5	7.3%

DISCUSSION

Endometrial hyperplasia is the representative of a group of morphological changes which range from reversible glandular proliferation to precursors for endometrial carcinoma. The commonest clinical presentation of endometrial hyperplasia is heavy menstrual bleeding. Menstrual irregularity is the most common presenting complaint of the patients, reporting to the gynaecologists in their out patient clinic. Although it is difficult to estimate the prevalence of abnormal uterine bleeding among women in their reproductive group but between 9 to 30% of these women report in menstrual irregularity clinics for medical evaluation and management.⁹ Among the etiology of abnormal uterine bleeding, a study conducted by Ozdemir et al¹⁰ showed that the frequency of endometrial hyperplasia, endometrial polyp and endometrial carcinoma was 11.8%, 4.2%, 5.5% respectively in premenopausal women. Muhammad Muzaffar et al¹¹ evaluated 260 patients with abnormal uterine bleeding by performing dilatation and curettage and observed that endometrial hyperplasia was the most frequent cause accounting for 24.7% of cases which is close to our study (25%).

Ameera Takreem² et al studied the frequency of endometrial hyperplasia in 100 patients who presented with abnormal uterine bleeding in premenopausal age

group and observed the incidence of simple, complex and atypical hyperplasia as 66%, 20%, 13.3% respectively. In our study simple cystic hyperplasia without atypia was commonest of all (60%).

The bleeding pattern in most of the patients with simple cystic hyperplasia is heavy menstrual bleeding whereas complex and atypical hyperplasias present with irregular, acyclic bleeding. In our study, HMB was the most common bleeding pattern (67.6%). Among 41 patients with simple cystic hyperplasia, 73% presented with HMB.

A trend of increased frequency of endometrial hyperplasia with increase in endometrial thickness was observed in our study. 60.2% of patients of patients with endometrial hyperplasia had endometrial thickness >10mm. Studies on transvaginal ultrasound have demonstrated that endometrial thickness measurement correlated well with results obtained on histopathology.¹¹ As it is safe and valid, it can be used as a first line investigation in evaluating patients with AUB or HMB in perimenopausal age group. A study by Aslam M et al¹² reported diagnostic accuracy of TVS to be 75.6% in detecting endometrial hyperplasia. Behrooz Shokuhi studied the role of transvaginal ultrasound in diagnosing endometrial hyperplasia in pre and postmenopausal women and reported the diagnostic accuracy as 88.25% and 100% respectively.¹³

Although hysteroscopy and curettage is regarded as gold standard for detecting endometrial pathology but Pipelle endocurette is a safe, less expensive, well tolerated and more convenient method for endometrial sampling as cervical dilatation is not necessary.¹⁴ Pipelle endocurette has sensitivity, specificity, positive predictive value and negative predictive value of 100% for endometrial hyperplasia in a study conducted by Shazia Fakhar and colleagues.¹⁵ Abrahim Anwar Abdelazim and colleagues compared Pipelle endometrial sampling with conventional dilatation and curettage in patients with abnormal uterine bleeding and reported diagnostic accuracy of 100% for endometrial hyperplasia with Pipelle endometrial sampling.¹⁶

Limited data is available to describe the incidence of progression of endometrial hyperplasia to carcinoma. A study conducted by Lancey J V¹⁷ et al had shown the progression of atypical hyperplasia to endometrial carcinoma. Therefore total abdominal hysterectomy is considered as the best treatment option for patients diagnosed with atypical hyperplasia.^{18,19} Cornelia L and colleagues concluded in a study regarding management of endometrial precancers that total hysterectomy is curative for atypical endometrial hyperplasia and also allows the assessment of the sample for concomitant endometrial carcinoma.²⁰

CONCLUSION

Endometrial hyperplasia is a common cause of HMB / AUB and its presenting clinical symptoms often require emergency or outdoor evaluation. In addition patients and health care system endure the cost of diagnostic evaluation, medical and surgical treatments. Since it's a premalignant condition, early diagnosis and prompt treatment helps in improving life expectancy in these patients.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Predict the Possibility of Esophageal Varices in HCV Patients on the Basis of Fibro Scan Scoring System

Haris Ali, Abu Talib, Gohar Baloch and Muhammad Rehan

ABSTRACT

Objective: To predict the possibility of Esophageal varices in HCV patients on the basis of fibro scan scoring system.

Study Design: Cross sectional study.

Place and Duration of Study: This study was conducted at Mamji Hospital from September 2013 to August 2014.

Materials and Methods: Total 87 patients with chronic liver disease with HCV were enrolled. They were evaluated for the treatment of chronic viral hepatitis C. The study was conducted in a private Hospital of F.B. area Karachi. The consent were taken and record was gathered on a preset proforma. All patient had done with abdominal ultrasound, fibro scan and upper endoscopy and laboratory investigation. All the fibro scan was done by single department and all the upper endoscopies were performed by same gastroenterologist. The data was analysed on SPSS version 15.

Results: All the patients were undergone fibro scan and divided into two groups according to their score offibro scan of 8Kpa into group I with low score and group II with high score. All patients under went upper endoscopy and the result were also divided into two groups those who had varices and those who had not. Total 87 patients. Males were 55 and females were 32. The fibro scan scoring was divides into two group. Group I was less than 8Kpa and group II was more than 8 Kpa. Among this 57 were in group I and 30 were in group II. The upper endoscopy result was also divided into two groups and in group I there were only one cases of early varices while 28 patients were show esophageal varices in group II.

Conclusion: It is concluded that fibro scan is a good non-invasive measure to predict probable esophagealvarices.

Key Words: Fibroscan, varices, chronic hepatitis, non invasive

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INTRODUCTION

The chronicity¹ of hepatitis follow after an acute infection is 70-75% cases. Chronic infection may follow in those who has normal levels of aminotransferase levels after an acute infection. The patients with chronic hepatitis only 20-25% will progress to cirrhosis. Mostly hepatitis C is identified initially in asymptomatic patients who have no history of acute hepatitis C infection they either donate blood, having a life insurance laboratory test, or under gone workup for an elective surgery or an antenatal visit. Approximately 33% patients of hepatitis C have normal aminotransferase levels. The progression of hepatitis C is almost more than 75% and it depends upon the duration of illness, obesity, older age, co-morbidity, increased iron load, HIV infection, other hepatitis virus like B and Dand alcohol consumption.

The chronic liver disease due to hepatitis C is endemic disease in Pakistan. It is almost 5-7% of the total population. The low literacy rate, poverty, unhygienic living style, mal practise and less resources may be the factors of its vast spread. The consequence of the virus was two its impact on liver so lead to cirrhosis. The destruction of synthetic liver function on one side and the viability of the virus to continue the disease process. To investigate the patient and to monitor the treatment success is also very expensive which is far away from the range of a common person. As the disease become chronic so that the complication are also on the rise. The close follow up is mandatory in every case. The problem arises from the element of fibrosis that replaced the normal parenchyma of liver and there is now fibrosis that will lead to increase the portal hypertension on one side and decreased the synthetic function of liver on the other side. There are chances of cirrhosis and its complications like esophagealvarices. Previously liver biopsy was done in every as it is risky, expensive, time consuming and little bit of variable results. With the advancement it was restricted to some special and difficult cases.

¹. Department of Medicine, CHK, DMC, DUHS, Karachi.

Correspondence: Dr. Haris Ali, Associate Professor of Medicine, Medical Unit-II, CHK, DMC, DUHS, Karachi.
Contact No: 0333-2234706
Email: doctorhalvi@gmail.com

Fibroscan^{2,3,4} it is a very new test and confidently comment on the fibrosis of liver and now liver biopsy was almost replaced with advance technique fibroscan. Fibro scan⁵ or elastography is a non-invasive test to measure liver inflammation and fibrosis. The score then converts on metavir scale to find a stage. In metavir grading system there are two numbers one is grade to indicate the degree of inflammation and the other is stage that showed the degree of fibrosis^{6,7}. A four-point grading system starting from A0 noinflammation, A1 mild inflammation, A2 moderate inflammation and A3 severe inflammation. While a five-point scale is for grading the fibrosis starting from F0 no fibrosis, F1 minimal fibrosis, F2 fibrosis involve the blood vessel of liver, F3 fibrosis involve the other areas of liver and F4 advanced fibrosis or cirrhosis. The fibro scan scan results in KPacan be converted into metavir scale of F1-F4. The higher scale like F3-F4 showed higher fibrosis and cirrhosis^{8,9,10}. It is the test that measure liver inflammation and fibrosis comparable to liver biopsy. It is FDA approved. The result of fibroscan in a patient if it is more than 14 KPa it is 90% probability of having cirrhosis and if more than 7 KPa then it showed more than 85% of having significant fibrosis.

In this particular study we decide to do fibroscan and upper G.I. endoscopies in every case to see the result and with the help of metavir scale we decide to predict the probable esophageal varices^{11,12} and with the endoscopy we confirm it

MATERIALS AND METHODS

This is a cross sectional study and conducted in Mamji Hospital. The study was done for a year from Sep 2013 to Aug 2014. It is now a very big hospital on district central and cover almost a larger area of Karachi. All the patients were adult and had informed consent. Total 87 patients of chronic liver disease with HCV were enrolled. They were evaluated for the treatment of chronic viral hepatitis C. History and detailed examination was taken in every case and the record was gathered on a preset proforma. All patient had done with abdominal ultrasound, fibroscan and upper endoscopy and laboratory investigations like Blood CP, UCE, LFT, PT, INR, serum Albumin and their BMI. All the fibro scan were done by single department of Civil Hospital Karachi and all the upper endoscopies were performed by same gastroenterologist in a private set-up. The data was analysed on SPSS version 15.

Inclusion Criteria:

- 1) Age more than 18 years
- 2) Treatment Naïve patients
- 3) BMI < 28
- 4) No history of upper GI bleed, Hepatoma and ascites.

Exclusion Criteria:

- 1) Age less than 12 years
- 2) Had taken treatment

3) History of Esophageal Varices

4) Patients with cirrhosis

RESULTS

Total 87 cases. Males were 55 and females were 32. The mean age was 29± 11. Males were little more than females. The patient's statistics was shown in Table No. 1. All the patients were undergone fibroscan and divided into two groups according to their score of fibroscan group I with low score and group II with high score. The cut value is 8Kpa. Shown in Table No. 2. All the results were in Kilopascal (Kpa). It ranges from 3 to 75 Kpa. The result of less than 8 Kpa was consistent with F1-2 and it is 57 cases (65.5%) and the Fibroscan score of 8-11 Kpa in F3 were in 24 cases (27.5%), while F4 greater than 11 Kpa and it is 6 cases (6.89%). All patients under went upper endoscopy and the result were also divided into two groups those who had varices and those who had not was shown in Table No 3. In group I there were only one cases of early varices while 23 patients were show small esophageal varices and 05 had large esophageal varices in group II.

Table No. 1: Patient characteristics

	Group I	Group II
Male	37	18
Female	20	12
Age	24 ± 7	33 ± 3
BMI	23 ± 3	26 ± 2
Hemoglobin	10.6 ± 3	9.4 ± 2.5
Total leucocyte count	10X ³ ± 3x ³	5X ³ ± 2X ³
Platelets count	100000 ± 5000	65000 ± 3000
SGPT	57 ± 13	88 ± 17
SGOT	27 ± 7	45 ± 9
Serum albumin	3.3 ± 0.9	2.7 ± 0.5
INR	1.2 ± 0.1	1.4 ± 0.4

Table No 2: Fibroscan Finding

Total patients	Group I (F 1-2)	Group II (F 3-4)
F1	33	0
F2	24	0
F3	0	24
F4	0	6

Table No 3: Endoscopic Finding

Total No of Patient	Group I	Group II
No varices	56	02
Small Varices	01	23
Large Varices	00	5

32% in total and 93% in group II having high fibroscan score were with esophageal varices. Laboratory tests like blood complete picture, prothrombin time, serum albumin and ultra sound abdomen were done in all patients. The platelet count were low, the albumin was low and prothrombin time was prolong among group II patients while near normal in Group I patients. The ultrasound finding of the abdomen was also significant

in group II patient. There was splenomegaly, coarse echo texture in every case of group II while three cases had ascites.

DISCUSSION

Chronic liver disease is endemic disease in our part of the world. Hepatitis C virus is the leading cause of chronic liver disease in Pakistan. It almost affect from 5-7 % of the population in Pakistan. The overall treatment and management of these patients is a burden on society. As we are a poor country, less health care resources and low literacy rate so we don't follow the case as it required, we pick the cases either on screening for job or they presented with complications. Patients with chronic liver disease can present with upper gastrointestinal bleeding because of a complication of cirrhosis. For the reason it is mandatory to investigate every case of chronic hepatitis C in detail. To pick upper G.I. bleeding complication early we need an upper G.I. endoscopy in every case. The endoscopes and the skill are not available in every centre. It creates an extraordinary burden on the team in particular and on health system in general. So it is better to do some test that will predict the possibility of esophagealvarices in particular cases and it should be less invasive, easy to perform and better availability and has comparable results. For the purpose we need a test that calculate the liver stiffness and predict about the complications like esophagealvarices and it is done by fibroscan the transient elastography. YasminSaad et al¹³ emphasized on fibroscan to pick early the complications like esophagealvarices. It records the value in Kpa and it is divided into staging from F1 to F4 depending upon the score. The fibroscan^{14,15} had negative and positive predictive values for the diagnosis of esophagealvarices were 95% and 94% respectively. Al Hamoudi¹⁶ et al were showed same result and highly recommended fibroscan to predict early esophagealvarices the cut value according to the Metavir scale was 8Kpa in our study. It is a good and reliable test to predict esophagealvarices but it cannot described the extent or grade of varices. In this study the patient with high fibroscan score had more chances of having esophagealvarices simultaneously the platelets count, serum albumin and INR were also dearranged. And the endoscopies were positive in 93 % of cases in group II. Previously the liver biopsy was carried out in cases where we want to have a histological assessment and grade of fibrosis. The liver biopsy¹⁷ is still a gold standard but the fibroscan had almost replaced it. Similar results were also found by many of the authors^{18,19} 83.5 % sensitivity in diagnosing small esophagealvarices. The procedure was easy to perform and had better

results. It was all the Kilopascal value that would decide what were be the future prospects. It could not clearly described the extent of the varices but with the disease progression²⁰ the complications were on a rise.

CONCLUSION

It is strongly concluded that fibroscan can predict the possibility of esophagealvarices in patients with chronic hepatitis C infection.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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Mob. 0331-6361436, 0300-4879016, 0345-4221303, 0345-4221323

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