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Editorial**Adultery: How Safe is Our Milk and Water?****Mohsin Masud Jan**

Editor

Pure milk is rapidly becoming a rare commodity, and has become virtually impossible to procure, even though more and more companies have started selling the product. A Supreme Court bench, headed by Justice Saqib Nisar, has noted that a large number of milk brands are adulterated with chemicals, urea or cane juice – intended to thicken the liquid or improve its flavor. The bench, hearing a petition placed before it by Barrister Zafarullah, was told this was also true of boxed juices, sold everywhere in the country. The result is that consumers are simply not getting what they are paying for, with children, the main consumers of milk, being the main affectees. In the past, the issue of adulterated loose milk has been placed before courts. The denial of safe milk to children was noted by the court to be a major issue, with a commission set up to examine it. The Punjab Food Authority, which has been active in the past two years in tackling unhygienic food preparation, is to play a part in the inquiry.

A study conducted by the Pakistan Council of Scientific and Industrial Research (PCSIR), noted that many brands of commercial water as well as other items were contaminated. This issue has come up time and again at various forums. Inquiries have been in the past as well, all to no avail. Perhaps we need to take things further. It is no secret that many food items we buy are contaminated while laws to ensure companies follow codes and declare accurately the ingredients in their products are both inadequate and poorly enforced. In the case of items such as milk and bottled water, this affects millions on a daily basis. Certainly, urgent measures are required to control standards and prevent further damage to the health of people, who really have no control over what food products they consume. We have failed to put these in place in the past. This time, with the issue coming up again before the superior judiciary, we need to devise a set of solid measures and take steps to insure they can be implemented

consistently and over a long-term basis in order to protect people across the country. We await a strategy to resolve the problem and place checks in place on the food that is aggressively marketed and sold to us by businesses, big and small.

Milk and water, are two basic necessities of life, water for all human beings and milk is the base sustenance for children of all size and ages. And these two base commodities are widely being adulterated in Pakistan, which causes at the very least, nutritional deficiencies in children, if they do not end up causing more damage. Some contaminants found in milk, such as sugar cane juice, are added to increase the flavor of the product, and such products do not produce any adverse effects on the body whatsoever. But some of the adulterants such as detergents added into milk, normally give way to toxic and potentially harmful substances when ingested by humans.

Water, which forms 70% of the normal human body, a basic necessity also contains contaminants found to be harmful to health. Majority of the places supplying drinking water in Pakistan, do not do a satisfactory job, and that leaves a huge majority of our population without access to safe potable water. More often than not, the mere bacterial content found in our drinking water supply would make our stomachs turn. Initiatives taken by the government have been far and few, and those too mostly have been inadequately run and managed.

Even though these issues are being addressed by the Supreme Court itself, we here need to have strict enforcement of any such laws and regulations, as needed to ensure that our population gets the best form of safe and drinkable milk and water. And the powers that be need to devise plans that will ensure the compliance of all companies selling and marketing these goods, not only in the short term but also in the long run as well.

Comparison of Two Techniques of Mandible Fracture Fixation Regarding Their Postoperative Complications

Parveen Memon¹, Ghulam Habib², Muhammad Shahzad², Muhammad Rizwan³

ABSTRACT

Objective: The objective of our study was to compare complications of fracture mandible treated by miniplate only and miniplate plus maxilla mandibular fixation (MMF).

Study Design: Comparative Study

Place and Duration of Study: This study was conducted at Liaquat University Hospital Hyderabad from May 2007 to April 2008.

Patients and Methods: This study was conducted on (100) one hundred patients of single mandible fracture. Patients were distributed into two groups (Group A and Group B). Patients in group A fracture, fixation was done by miniplate fixation and patients in group B were managed by miniplate plus MMF for upto 15 days. All patients were followed after surgery for at least two months. Incidence of development of infection, nonunion, malocclusion, nerve damage, TMJ dysfunction and delayed union was evaluated.

Results: Bone union was occurred in all patients. Ten complications were developed in ten patients. In group A number of complications were 8 (16%) and in Group B number of complications were 2 (4%).

Conclusion: Rigid internal fixation in the form of miniplate plus MMF for shorter duration is advantageous as it has good function result and lesser number of complications.

Key Words: fracture mandible, category of treatment, complication

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INTRODUCTION

Maxillofacial injuries are the most common types of injuries presenting at emergency departments.¹⁻³ Maxillofacial trauma is main cause of mortality and morbidity worldwide.⁴⁻⁶ Mandible is the single bone of facial skeleton which take part a major action in mastication, speech and deglutition. The most prominent bones of face are mandible and zygomatic bones and both are more vulnerable to trauma and fracture.⁷⁻¹¹ Fracture of these bones may occur alone or in combination with other facial bone fractures.¹²⁻¹⁵ Its fracture may affect its function and cause disfigurement. Pattern of mandibular fractures may be affected by geographic location, social, cultural and environmental factors and social activity.¹⁶⁻¹⁸

Most common cause of mandibular fracture in developing countries is road traffic accidents due to lack of implementation of the traffic laws, while

contrastingly in developed countries alcohol related to interpersonal violence and physical assault is the chief cause of mandibular fracture.¹⁸⁻²²

Treatment of fracture mandible remains a challenge demanding skill and high level of expertise. Fracture mandible can be treated by close or open reduction and fixation.²³⁻²⁷ It has been reported that different complications can occur after close and open reduction and fixation.²⁸⁻³³ Previously close reduction methods were most popular used for mandibular fracture.³⁴⁻³⁶ MMF has many difficulties for patients of preventing normal jaw function, restricting the diet to liquid or semisolid and difficult maintains of oral hygiene. Recently rigid internal fixation has gain popularity in treating fracture mandible by use of miniplates and screws.

Infections, malocclusion, delayed union and even some time nonunion, nerve damage and reduction in ventilatory volume followed by occurrence of pulmonary atelectasis may occur after close and open reduction of fracture are^{26,33}.

MATERIALS AND METHODS

This study was carried out on one hundred patients visited Liaquat University Hospital Hyderabad from May 2007 - April 2008. There were 89 (89%) males and 11 (11%) females. Most common site was para symphysis (50%).

Fractures were treated after the incidence of injury within 72 hours. Patient having single mandibular

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fracture, medically fit for surgery and having sufficient dentition to assess occlusion were included in our study. Patients having bone pathology, immune-compromised patient's and patients with comminuted and infected fractures were excluded.

Patients selected by above inclusion and exclusion criteria were distributed into two groups. Patients in group A were treated by Mini plates and patients in group B were treated by mini plates + MMF for up to 15 days. Under general anesthesia intraoral mucosal incision was made in aseptic conditions, fracture was reduced and pretraumatic occlusion was established, miniplates placed & secured with four 2.0 mm wide 7.0 mm long mono cortical screws following Champys principle. Surgical site was irrigated with normal saline, incision closed and antibiotics were given to all patients. Post-operative radiographs were taken. All patients included in the study were followed for at least two months. During follow up patients were examined for post-operative complications. Collected data was analyzed by using SPSS version 17. Chi-square and T-test significance test were used with P-value ($P > 0.05$).

RESULTS

Table No.1: Distribution of Mandible Fracture Site

Site	No. of Patients	%ages
Symphysis	16	16%
Para Symphysis	50	50%
Body	24	24%
Angle	10	10%

Table No.2: Frequency of Complications

Complication	Miniplate	Miniplate + MMF	Total
Infection	8%	4%	12%
Malocclusion	6%	0%	6%
Delayed union	0%	0%	0%
Non Union	0%	0%	0%
Nerve Damage	2%	0%	2%
TMJ dysfunction	0%	0%	0%
Total	16%	4%	20%

■ Male 90% ■ Female 10%

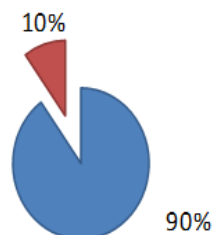


Figure No.1: Distribution of Male and Female

In our study 89% were males patients and 11% were females (figure-1)). Most common age group of the patient was 21-30 years. Most common cause of

mandibular fracture found in our study was Road traffic accidents. Union and bone healing of fractures were achieved in all cases. Ten complications encountered in 10 patients among two groups (100 patients). Distribution of mandibular fracture site is shown in table 1 and details about post-operative complications are given in Table 2.

DISCUSSION

In our study road traffic accident was found common cause of fractures. Young adult males (21-30) years of age were prominent victims. Parasymphysis was found most common site of fracture. The results of epidemiologic surveys on the causes, incidence and distribution of mandibular fracture vary with geographic regions, socio economic conditions and culture characteristics.⁵⁻¹³ The relatively high male to female ratio in our study is due to the fact that males are engaged more in outdoor activities while females are confined to indoor activities in this part of world.

Previous Studies conducted to compare the close reduction by MMF with open reduction and fixation. Cowood³⁷ and Renon³⁸ have also found the rigid Internal Fixation as the treatment of choice.

Several Other studies show the maxillomandibular fixation is superior regarding post-operative complications³⁴⁻³⁶. Recent studies conducted by Belouran³⁹ and Chiritab⁴⁰ used miniplates + MMF for fewer days (1-2 weeks) and found lesser Complications. Result in this study regarding postoperative infection in group A was 8% and in group B was 4% are comparable with that of previous studies done internationally. Infection in miniplate use was found by Demotos²⁶ and Barry⁴¹, 8%, Pazaoa²⁴ 9% and Sauerbier⁴² found 7.5% respectively.

Mobility of fractured segments, placement of screw in the line of fracture, poor plate adaptation and contouring, inadequate cooling during preparation of holes for insertion of screws and tooth in fracture line increases the risk of post-operative infection. Lack of antibiotics used considered to be predisposing factor for infection.

In group A infection was double then group B. It favors that in group B single miniplate was used along with MMF for up to fifteen day has reduced infection rate, possible because of reduction in implanted material minimized procedure errors.

In this study malocclusion Occurred 6% in group A and non of patient in group B faced this complication. Regarding Malocclusion in Group A our results are matching with that of Previous Studies^{19, 22}. Presence of malocclusion depends upon patients' dental condition, number of fractures and their displacement, achieved reduction, kind of Immobilization and the time of immobilization and inappropriate bending and adaptation of plates. This study favors that Miniplate Fixation + MMF for up to two weeks achieves

reduction of fracture that is sufficient to obtain good post-surgical occlusion. Rigidity of osteosynthesis material is an advantage because it allows immediate jaw mobility but it can also be a draw back if it prevents correction of a post-operative malocclusion with MMF. Malocclusion was corrected by occlusal grinding. Group A showed sensory disturbances in 2% of patients that is matching with the study of Schon²³ and is probably due to manipulation of fractured segment in the placement of two miniplates at parasymphysis region. While in group B we used one miniplate and none of patient faced this complication.

CONCLUSION

Rigid internal fixation in the form of miniplate plus maxillomandibular fixation for shorter duration is advantageous as it has good functional results and lesser number of complications.

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

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Evaluation of Daily Life Activities (Functional Outcomes) in Ischemic Stroke Patients With and Without Diabetes

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ABSTRACT

Objective: To evaluate and compare the functional outcomes and daily life activities in ischemic stroke patients with and without diabetes.

Study Design: Cross sectional study.

Place and Duration of Study: This study was conducted in the Department of Neurology, Shaikh Zayed Postgraduate Medical Complex, Lahore from May 2013 to May 2014.

Materials and Methods: This study was comprised 100 patients, and used Barthel Index Scoring System for measuring daily life activities in our stroke patients on admission, one month and 3 months after stroke event.

Results: The lower Barthel index on admission and slower recovery during first 4 weeks in diabetic patients than non-diabetics while no significant differences were noted after 3 months of stroke onset between both groups.

Conclusion: Functional outcomes of activities of daily life in diabetic stroke patients are slower than non-diabetics in first month after onset of stroke.

Key Words: Functional outcome, Ischemic stroke, Diabetes

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INTRODUCTION

Ischemic stroke occurs with loss of brain functions due to a disturbance or impairment in its blood supply.¹ Ischemic stroke occurs from occlusion of a major artery in the human brain and accounts for more than 80% of all strokes.²

Since normal brain cell functions depend upon a level of perfusion that provides optimal delivery of nutrients.³ Therefore when blood supply to the brain is interrupted, the cells are receiving insufficient amount of glucose and oxygen which are essential for their vital functions.⁴ Maintaining control of blood glucose level is essential for decreasing its associated long and short term complications and achieving a best quality of life.⁵ Barthel index is used to measure and evaluate functions of a patient's activities of daily life (ADL) with a higher scoring denoted independence in ADL and the lowest score is for dependency on others.⁶ Barthel index has 10 items as feeding, bathing, grooming, dressing, bowel and bladder control, toileting, chair transfer, ambulation and stair climbing.⁷

Shah et al⁸ had reported that 0-20 points shows "total" dependency, 21-60 points are for "severe" dependency, 61-90 points "moderate" dependency, and 91-99 points are labelled as "slight" dependency.

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MATERIALS AND METHODS

This cross-sectional study was conducted in the Department of Neurology Shaikh Zayed Postgraduate Medical Complex, Lahore from May 2013 to May 2014, and used Barthel Index Scoring System for measuring daily life activities in our stroke patients on admission, during hospital stay, one month and 3 months after stroke event. One hundred ischemic stroke patients were included and they were divided in two groups; group "A" (diabetic) and group "B" (non-diabetic) with 50 patients in each group. Patients of both groups were sub divided into 5 subgroups with the range of 20 points of Barthel index as follow: (Total 100 points score) 0-20, 21-40, 41-60, 61-80 and 81-100. The dependency status was categorized as total, severe, moderate, minimal and independent. Data was entered in computer software SPSS version 20

RESULTS

The lower Barthel index on admission and slower recovery during first month in diabetic patients than non-diabetics while no significant differences were noted after 3 months of stroke onset between both groups. Most of the patients in both groups had difficulties in bathing, toileting, bowel control, climbing stairs and grooming during first month of stroke event while bathing, climbing stairs were still difficult tasks for patients in first three months after stroke (Table 1, 2).

Table No.1: Barthel Index of patients on admission, 1 month and 3 months after stroke onset

Barthel index	No. of patients in diabetic group			No. of patients in non-diabetic group		
	Admission	Follow-up		Admission	Follow-up	
		1 month	3 months		1 month	3 months
0 – 20	44	12	-	37	4	-
21 – 40	4	20	6	9	17	3
41 – 60	2	16	35	4	21	36
61 – 80	-	2	8	-	8	9
81 – 100	-	-	1	-	-	2

Table No.2: Dependency status of patients according to their Barthel index scores on admission, 1 month and 3 months after stroke onset

Barthel index	No. of patients in diabetic group			No. of patients in non-diabetic group		
	Admission	Follow-up		Admission	Follow-up	
		1 month	3 months		1 month	3 months
0 – 20 Total dependency	44	12	-	37	4	-
21 – 60 Severe dependency	6	36	41	13	38	39
61 – 90 Moderate dependency	-	2	9	-	8	11
91 – 99 Minimal/Mild dependency	-	-	-	-	-	-
100 Independent	-	-	-	-	-	-

DISCUSSION

In our study 44% vs 37% patients were admitted with total dependency in diabetic and non-diabetic groups respectively. There were 6% patients in diabetic and 13% in non-diabetic group admitted with severe dependency status according to Barthel index score of patients. In moderate, mild dependency and total independence status no one was admitted in both groups. One month post stroke event there were 12% vs 4% patients with total dependency, 36% vs 38% with severe dependency, 2% vs 8% with moderate dependency and 0% vs 0% were with mild dependency in group "A" and "B" respectively. After three months follow up there was 0% vs 0% with total dependency status while 41% vs 39% patients with severe dependency status were noted in diabetic and non-diabetic groups respectively. Total 9% diabetic patients and 11% non-diabetic patients were noted with moderate and 0% vs 0% with minimal dependency status. There was no patient who performed independently in both groups after three months of stroke onset. In this study the minimum stay of stroke patients in hospital was one week and maximum was about two weeks. First follow up after discharge from hospital was done after two weeks of all patients. Our study shows that most of the patients from diabetic group had lower Barthel index scoring compared with non-diabetic group on admission till first 3-4 weeks after stroke event. Patients from both groups had difficulties in bathing, grooming, feeding, dressing, bowel and bladder control, shifting from bed/wheelchair, use of stairs up and down as well as toilet use in first two weeks after stroke event. Diabetic patients had lower Barthel index during admission and also showed slow improvement in ADL during hospital stay compared with non diabetic group.

A study shows that diabetic patients had higher death rates, dependencies and recurrent stroke events compared with non-diabetics at 3 and 6 months after stroke onset with poor and bad outcomes after ischemic stroke.⁹

It was noted in our study that there was no significant difference in Barthel index scoring in both groups after first three months of stroke event. After three months follow up most of the patients in both groups had difficulties in bathing, use of stairs up or down. There was improvement of barthel scoring in feeding, dressing, indoor mobility, and wheel chair to bed transfer as well as bladder control in stroke patients of both groups. In our study it was observed that patients of both groups had impaired bowel habits with increasing frequency of constipation but bowel controlling was satisfactory.

Stroke patients are dependent on others for daily life activities and stroke related disability is present worldwide in many diverse populations including US, Europe, Africa and Asian population.¹⁰⁻¹² Overall, 15 to 30% of these cases become permanently disabled and death results in 23% of the cases.¹³

Reduced Disability Adjusted Life Years (RDALY) criteria put stroke events as the 3rd highest disability cause in 2010. Older people are more prone to stroke and the risk increases by the age over 65 years.¹⁴

From half to two third of patients who survive a stroke are regaining independence and up to 80% of these patients regain or retain the ability to walk.¹⁵

A study shows 18% case fatality in non-diabetic and 16% in diabetic stroke patients. This study describes Barthel index of 50 to 90 of non-diabetics and 45 to 75 of diabetics who were discharged alive from the hospital. A 4 fold increased fatality were documented in admission hyperglycemia patients than admission normoglycemics.¹⁶

Amr kamel et.al¹⁷ has documented that diabetics had worsen Canadian scale and non significant changes in Barthel index ADL compared with non-diabetics. According to this study bathing steps of ADL were found to be very difficult to score above 12 after one month of stroke follow up.

Sujatha et al¹⁸ has documented increase of Barthel index scoring at the time of discharge compared with scoring of ischemic stroke patients on admission. This increase of Barthel index was 52.27 vs 56 indicate a significant increase in scoring points at the time of discharge from hospital compared with scoring on admission.

Poletto et.al¹⁹ compared early mobilisation and routine physiotherapy of stroke patients shows no significant difference in Barthel Index scoring at about 3 months post stroke in both groups. According to this study the scoring points of both groups were ≥ 85 on Barthel Index.

A study by Nakao et al²⁰ describes good outcomes in 6 months of stroke patients having early 3 weeks with BI score of more than 40 compared with those of less than 40 score in early 3 weeks of stroke onset.

According to Lee et al²¹ there was a comparatively rapid recovery of patients during first month of post stroke compared with recovery after 3 to 6 months of the stroke.

CONCLUSION

Our limited study data shows that functional outcomes of activities of daily life in diabetic stroke patients are slower than non-diabetics in first 3-4 weeks after onset of stroke while no significant differences were noted in 3 months of follow-up after stroke. It also shows that diabetic patients have lower Barthel index compared with non-diabetics on admission.

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

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Indigenous Practices of Mothers in Acute Diarrhoea in Children Under Five Years of Age in Peri-Urban Areas of Southern Punjab

Seemal Vehra¹, Muhammad Ibrar Iqbal² and Ejaz Mahmood Ahmad Qureshi²

ABSTRACT

Objective: To find out mothers' indigenous practices for controlling diarrhoea in children.

Study Design: Observational / descriptive / cross-sectional study

Place and duration of study: This study was conducted at the Department of Public Health, IPH, Lahore and Department of Botany, GPGCW, Lahore for three months.

Materials and Methods: 200 children suffering from diarrhoea attending a private clinic in Southern Punjab were included in this study. Data was collected through questionnaire and analyzed using SPSS 19.0. Chi-square test and correlation were applied to find out the level of significance and correlation between different variables.

Results: Majority (59%) of the children suffering from diarrhoea were < 1 year old. 97% of mothers of children with diarrhoea were housewives. Information collected about mother's educational status revealed that 50% were illiterate. 3% had attended school only up to grade 1 or 2 or educated up to primary level. Total family monthly income of majority (61.5%) was > Rs 10,000. A vast majority of respondents i.e. 78.5% lived in an extended family system and 47.5% children belonged to families having 6-10 members. About three fourths of children (74.5%) were bottle fed whereas 32.5% consumed cow milk as breast milk substitute. Regarding the diet given to children during diarrhoeal condition, 48% of mothers fed their children with bananas, 41.4% khichri, 54.0% ORS, 30% yogurt, 23.5% rice water and 12.5% saunf (fennel).

Conclusion: Breast feeding had a significant negative correlation ($p = 0.001$) with the number of stools passed per day while bottle feeding and other breast milk substitutes had insignificant negative correlation. Likewise, insignificant negative correlation was found between the use of banana, rice water, kichri, pomegranate (anar) juice, honey, lemon water, qahwa and yogurt with the number of stools children passed per day. Information about benefits of breast feeding and frequent hand washing as well as rota virus vaccination to prevent diarrhoea should be provided to families for controlling diarrhoea at community level.

Key Words: Acute diarrhoea, indigenous practices, mothers, children

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INTRODUCTION

Acute diarrhoea, the second leading cause of child morbidity and mortality, accounts for 21% of all the deaths in children under-five years of age, especially in the developing countries^{1,2} even more than Acquired Immunodeficiency Syndrome (AIDS), malaria and measles combined. Moreover, it also exposes children to secondary infection.

In Acute diarrhoea, a child usually passes three or more loose stools per day. Mothers improper knowledge and

their misdirected approach towards management of the disease leads to high degree of diarrhoea and results in severe dehydration⁶. A variety of bacteria, viruses and parasites cause diarrhoea. There is no single microbial cause for persistent diarrhoea; *Escherichia coli*, *Shigella* and *Cryptosporidium* play a greater role than other agents. Infection spreads through contaminated food or drinking water or from person to person as a result of poor hygiene.

Traditional beliefs, barriers and practices by mothers regarding childhood diarrhoea vary in different communities⁷. Indigenous practices for control of diarrhoea in children include breast milk, animal milk, khichri, yogurt, qahwa, rice water, ORS, curd, banana, glucose water, pomegranate juice, sherbet (Rooh Afza, Jam-e-Shereen), limo pani (lemonade) and 7-up (carbonated drink) etc. Safe drinking-water, use of improved sanitation and hand washing with soap can reduce the disease risk. Some studies have revealed that in children, certain habits like not washing hands before meals or after defecation, eating with hands rather than spoons; in mothers, feeding children or preparing foods with unwashed hands; dirty feeding bottles and utensils,

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unhygienic domestic places (kitchen, living room, yard), unsafe food storage, presence of animals and flies inside the house, were associated with risk of diarrhoea morbidity in children^{8,9}.

The present study was designed after looking at the high incidence rate of diarrhoeal infection in children and the fact that very few serious studies have been carried out in semi urban areas to investigate indigenous practices carried out by mothers to control diarrhoea. The objectives of this study were to find out indigenous practices exercised by mothers for prevention and control of diarrhoea in children and to give recommendations to improve knowledge, practices and awareness amongst mothers regarding control of diarrhoea.

MATERIALS AND METHODS

The study was conducted on children less than 5 years of age, suffering from diarrhoea and attending a private clinic in Jahanian, District Khanewal, Punjab.

All children suffering from diarrhoea attending a private clinic in Jahanian, District Khanewal.

Sampling Technique: Systematic random sampling technique was used to select the study population.

Inclusion Criteria: Mothers of children suffering from diarrhoea

Exclusion Criteria: 1. All mothers whose children were suffering from diarrhea as well as other diseases.

2. Those who refused to participate

Sample Size: The sample size was 200. It was calculated by the following formula^{10,11}:

$$n = \frac{z^2 \times p(1-p)}{d^2}$$

Where,

P (anticipated prevalence) = 51%¹²

d (error term) = 7%

95% Z value = 1.96

By putting the value in the above formula

$$n = \frac{3.84 \times 51 \times 49}{49} = 196$$

For convenience, a sample size of 200 was taken.

Data Collection Tools: The data collection tools comprised of semi-structured questionnaire which was pre-tested and modified accordingly.

Data Collection Procedure: A private clinic in Jahanian, District Khanewal was visited to collect information regarding indigenous practices to control diarrhoea, Data was collected and recorded in a pre-tested questionnaire. From a group of 8-10 patients, every fifth patient was selected for interview.

Data Analysis: SPSS (Statistical Package for the Social Sciences) version 19.0 was used for data analysis. Chi-square test and correlation was carried out.

Ethical Considerations: Informed verbal consent was taken prior to interview. The respondents were informed about the purpose of study. The confidentiality of all the information was ensured and maintained.

RESULTS

The detail of results is given below in the form of tables from Table 1 to 4.

Table No.1: Descriptive analysis of demographic characteristics of families of children <5 years suffering from diahorrea

Sr.No.	Variables	Description	Frequency (%)	Mean	SD
1	Education of mother	Illiterate	50 (25.0)	3.92	2.098
		Grade 1&2	3 (1.5)		
		Primary	28 (14.0)		
		Middle	33 (16.5)		
		Matric	34 (17.0)		
		Intermediate	23 (11.5)		
		Graduate	29 (14.5)		
2	Total family income (Rs.)	≤10,000	77 (38.5)	1.62	.488
		>10,000	123 (61.5)		
3	Type of family	Nuclear	49 (24.5)	1.76	.431
		Extended	151 (75.5)		
4	Total family members	≤5	51 (25.5)	1.62	.488
		6-10	95 (47.5)		
		11-15	36 (18.0)		
		16-20	10 (5.0)		
		>20	8 (4.0)		

Table No.2: Descriptive analysis of Diarrhoea in Children < 5 Years

Sr. No.	Variables	Description	Frequency (%)	Mean	SD
1.	Duration of diarrhoea (days)	1-2	84 (42.0)	3.12	1.709
		3-5	94 (47.0)		
		>5	22 (11.0)		
2.	Duration between diarrhoea seeking doctor's advice (days)	1-2	113(56.5)	2.69	1.519
		3-5	74 (37.0)		
		>5	13 (6.5)		
3.	No. of stools per day	1-5	6 (3.0)	8.30	2.255
		6-10	175 (87.5)		
		>10	19 (9.5)		
4.	Frequency of acute diarrhoea in last 30 days	1	55 (27.5)	2.00	.811
		2	102 (51.0)		
		3	32 (16.0)		
		>3	11 (5.5)		

Table No.3: Correlation of weaning practices by mothers of children suffering from acute diarrhoea with number of stools/day

Sr. No.	Variables	Description	Pearson correlation	Level of significance P value	Remarks
1.	Feeding practices	Exclusive breast feeding	.231*	.001	Significant
		Bottle feeding	-.104	.445	Insignificant negative correlation
		Breast plus bottle feeding	.017	.813	Insignificant
		Weaning started	-.110	.066	Insignificant negative correlation
2.	Breast milk substitute	Cow	-.178*	.012	Insignificant negative correlation
		Buffalo			
		Goat			
		Formula milk			
3.	Source of drinking water	Tap water	-.133	.060	Insignificant negative correlation
		Boiled water			
		Filtered water			

Table No.4: Correlation of Indigenous Practices by mothers for control of diarrhoea in Children with number of stools/day

Sr.No.	Variables	Pearson correlation	Level of significance P value	Remarks
1.	Saunf paani	.030	.671	Insignificant
2.	Ghutti/gripe water	.069	.330	Insignificant
3.	Banana	-.148*	.037	Insignificant negative correlation
4.	Rice water	-.141*	.046	Insignificant negative correlation
5.	Taweez water	.058	.413	Insignificant
6.	Glucose	.038	.589	Insignificant
7.	7-up	.049	.494	Insignificant
8.	Khichri	-.145*	.041	Insignificant negative correlation
9.	Annar juice	-.030	.678	Insignificant negative correlation
10.	Araq	.008	.911	Insignificant
11.	Honey	-.214*	.002	Insignificant negative correlation
12.	Isphagol husk	.020	.774	Insignificant
13.	Lemon water (lemonade)	-.204	.004	Insignificant negative correlation
14.	Qahwa	-.052	.465	Insignificant negative correlation
15.	Yogurt/curd	-.053	.453	Insignificant negative correlation
16.	Nimkol (ORS)	.109	.125	Insignificant

DISCUSSION

Present study which was undertaken to find out the indigenous practices of mothers in acute diarrhoea in children under five years in one of remote district of South Punjab revealed that more than 50% of children who were reported for treatment were less than one year old in contrast to study by Kolahi et al. (2008) who reported greater incidence of diarrhoea in children whose ages were between 1 to 3 years¹³. During in-depth interviews it was observed that both parents of the ill children who were very keen to learn how they could help their children recover speedily were literate. The finding of this study that most mothers of the ill children were housewives are similar to those reported by Zahid et al. (2014) and interestingly, Mengistie et al. (2013) reported that majority of fathers of affected children were illiterate.¹⁴

Saurabh et al. (2014)¹⁵ reported that substantial family income is indispensable for good health as it helps in maintaining hygienic conditions. Moreover, availability of good quality food and early access to health care providers is important for sound health. Likewise, this study showed that the income of majority of the families was $\leq 10,000$. Size of the family is another important factor for decrease parental care. Incidence of diarrhoea was more in families who had >5 family members living in extended family system as shown in Table 1. Mohammed and Tamiru (2014) also reported similar findings¹⁶.

Role of breastfeeding, amount and frequency of milk feed was interrogated in detail. In contrast to findings of Mohammed and Tamiru (2014)¹⁶, this study found that majority of the children was bottle fed. Mothers were rather ignorant about importance of breast milk. They were confused how breast milk was superior and how it protects their children from repeated episodes of diarrhoea. In addition to that they had very little knowledge about preparation of formula or cow milk. Similarly these children were not given milk feed in between breast milk. Zahid et al. (2014) also reported such findings¹⁷. This study revealed insignificant negative correlation between bottle feeding, time of weaning and use of breast milk substitute with number of stools/day as shown in Table 3.

Contaminated water is considered a leading cause of diarrhoea. Families who boiled and filtered water, their children had less episodes of diarrhoea but this study revealed a insignificant negative correlation between source of drinking water and number of stools/day as shown in Table 3. This finding did not corresponds to the findings of the study conducted by Kelly et al. (1999) who confirmed that majority of children who suffered diarrhoea were given tap water¹⁸.

With the passage of time, trend of indigenous practice during diarrhoea is declining and majority of the mothers prefer to visit doctor for the treatment of their

children. Study identified that more than half of the mothers gave nimkol (ORS) to their children during diarrhoea, followed by rice water, taweez water, qahwa, ghutti/gripe water, araq, saunf paani, glucose, 7-up, pomegranate (annar) juice, honey and isphagol husk. This study showed insignificant negative correlation between intake of banana, rice water, kichri, annar juice, honey, isphagol husk, qawa and yogurt with number of stool/day as shown in Table 4. This is in contrast to study of Zahid et al. (2014) who asserted in their study that banana, khichri and yogurt were preferred food.

CONCLUSION

Indigenous practices for control and prevention of diarrhoea had played a major contributing factor for control of this menace. These practices were easy to use and acceptable to majority of study population. Among these saunf paani, ghutti/gripe water and nimkol (ORS) were the most important and widely used.

Recommendation and suggestions: The treatment/preventive package for diarrhoea in children less than five years should be provided at all health care centres especially in remote and far flung areas where specialized health care facilities are not available. Oral rehydration therapy and zinc treatment should be provided in these centres as it decreases both diarrhoea severity and duration. Rotavirus and measles vaccinations, promotion of hand washing with soap and improved water supply are the additional step which can help in the reduction of diarrhoea in children especially less than 5 years of age.

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

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Seroprevalence of HCV, HBV and HIV in the Male Prisoners at Central Jail, Karachi

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ABSTRACT

Objective: This study was aimed to determine the prevalence of HCV, HBV and HIV in male prisoners at central jail, Karachi.

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at Clinical Laboratory of Lyari General Hospital and Dow University of Health Sciences laboratory from October 2014 to Feb 2015.

Materials and Methods: A selected team of doctors and para medical staff collected the blood samples from the prisoners of jail. Lab tests was performed for anti HCV and HBsAg and HIV antibodies. By rapid testing immunochromatographic (ICT) devices were used for screening. Reactive samples were retested and final diagnosis of seropositivity for HCV and HBV was made using ELISA system (enzyme linked immunosorbent assay) whereas HIV positive serum was rechecked with chromatographic immunoassay. The repeated and confirmed positive sera for HCV, HIV and HBV were included in the analysis. Statistical analysis was performed using SPSS (IBM SPSS Statistics 20.0).

Results: A total of 323 male prisoners were evaluated 226(69.96%) of prisoners were between 20-30 years, majority fell in age range of 31-40 years. 45(13.9%) among 323 male prisoners were found to be HEP C positive, 4(1.2%) was HEP B positive and 9(2.78%) were HIV positive. Male prisoners were highest among 20-30 years all 3 infections were more in the same age range. Overall seroprevalence of HCV coinfection with HIV or HBV or both was 6/323 (1.85%). Among total HCV positive prisoner's evidence of co infection HCV-HIV co infection prevalence rate was (6/45) 13.3%.

Conclusion: Prevalence of HCV was 14%, HBV was 1.2% and HIV was 2.78% in male prisoners of central jail.

Key Words: Hepatitis C, Hepatitis B, HIV, jail, Prevalence

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INTRODUCTION

Human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV) are three important prevalent infections all over the world¹. People in correctional facilities like jail have high risk behaviors. They often have history of intravenous drug use, needle sharing and high risk sexual behavior^{2,3}. The reason of this risky behavior is usually confinement in the prisoner leading^{2,4} to high transmission of blood born viruses like hepatitis C, hepatitis B and HIV^{2,5}.

Other highly prevalent identifiable risk factors in prisoners include previous imprisonment, tattooing and inconsistency of health services^{2,6}. As these facilities serve as a reservoir of these blood born infections, the prisoner once released can become source of infection, for the community. A better knowledge of prevalence rates of these infections in these kinds of facilities could help in disease prevention and management.

Hepatitis C virus is a life threatening disease globally because of its high prevalence and potentially serious complications of persistent HCV infection and its co-infection with HIV or HBV associating it with an accelerated course of disease resulting in rapid progression⁷. The purpose of this study was to observe the prevalence of HCV, HBV and HIV infection in the prisoner of central jail in Karachi and to identify the risk factors.

MATERIALS AND METHODS

This descriptive cross sectional study conducted from October 2014 to February 2015. A favorable ethical opinion was obtained from the institutional ethical review committee. After taking informed consent,

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participant blood sample was collected using aseptic technique by an expert phlebotomist. Sera was separated and analyzed on the same date. Screening for Hepatitis B virus surface antigen (HBsAg), anti HCV and HIV antibodies was performed in the clinical laboratory of Lyari General Hospital and Dow University of Health Sciences laboratory. Rapid testing immunochromatographic (ICT) devices were used for screening. Reactive samples were retested and final diagnosis of seropositivity for HCV and HBV was made using ELISA system (enzyme linked immunosorbent assay) whereas HIV positive serum was rechecked with chromatographic immunoassay. The repeated and confirmed positive sera for HCV, HIV and HBV were included in the analysis.

Statistical Analysis: Statistical analysis was performed using SPSS (IBM SPSS Statistics 20.0). Descriptive statistics were used and frequencies and percentages were calculated.

RESULTS

A total of 323 male prisoners were evaluated 226(69.96%) of prisoners were between 20-30 years, 65(20.1%) fall in age range of 31-40 years and 32(9.9%) prisoners were between 41-50 years (Table-1). 45(13.9%) among 323 male prisoners were found to be Hep C positive, 4(1.2%) was HEP B positive and 9(2.78%) were HIV positive (table-2). Male prisoners were highest among 20-30 years all 3 infections were more in the same age range. Overall seroprevalence of HCV co-infection with HIV or HBV or both was 6/323 (1.85%). Among total HCV positive prisoner's evidence of co infection HCV-HIV co infection prevalence rate was (6/45)13.3%. No prisoner had co infection of HCV-HBV -HIV i.e. triple co infection among the 6 HCV-HIV co infection prisoners. Four were in the age range between 20-30 years and two patients were in between 31-40 years.

Table No.1: Age Distribution

Age Range (Years)	Total number (n = 323) (%)
20 – 30	226 (69.96)
31 – 40	65 (20.1)
41 – 50	32 (9.9)

Table No.2: Prevalence of Infectious Diseases (HCV/HBV/HIV)

Infections	Yes (%)	No (%)
HCV	45 (13.9)	278 (86)
HBV	04 (1.2)	319 (98.7)
HIV	09 (2.7)	314 (97.2)

DISCUSSION

The results of this study concluded that majority prisoners were between the age range of 20-30 years.

The overall prevalence of hepatitis C was approximately 14%, hepatitis B was 1.2% and HIV was approximately 3%. This is comparable with overall prevalence reported in Lahore central jail, of HCV-15.3%, HBV-3.4% and HIV- 1.79%.⁸

The prevalence have seen to be high is developed and developing countries. In United States of America (USA), 1.8-6.6% for HIV, 20.2%-25.2% for HBV and 23.9-29.7% for HCV.^{9,10} In Canada the overall prevalence of HIV was 2.3% and 8.8% among male and female and HCV was 16.6% and 29.2% respectively.¹¹ In Italy, HIV-7.5%, HCV- 38%, anti-HBc-52.7% and HBsAg-6.7%.¹² In Africa the reported prevalence of HIV – 19.2% HBsAg- 17.4% and HCV-19.2%.⁵ In Ireland, HCV-37%, anti HBc-9% and HIV-2%.¹³ The highest prevalence rate of HCV was reported in USA, Canada and Italy.^{5,10,12} The highest prevalence rate of HBV was reported in USA and Italy.^{10,12} HIV prevalence was highest in USA and Africa.^{9,12} The reported prevalence of HCV in Lebanon was 3.4%, HBV-2.4% and HIV-0.17% which is consistent with our findings.

There are some limitations of our study. This study has been conducted in one prison so the results cannot be generalized to the entire jail population, especially to prisoners with shorter sentences. It is difficult to estimate the rates of drug abuse and sex. Security issues and religious beliefs are barriers for prisoner to respond accurately to the questions of drug abuse and sex behavior. Due to financial constraints we did not confirm the blood samples with western blot and PCR.

We reported a high prevalence of HCV in jail, which is a major health concern. Health care facilities should be enhanced by including screening programs in jail.

CONCLUSION

Prevalence of HCV was 14%, HBV was 1.2% and HIV was 2.78% in male prisoners of central jail.

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

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Pattern of Oral Squamous Cell Carcinoma of Patients Presenting at Liaquat University Hospital Hyderabad (LUH)

Ghulam Habib¹, Adeela Mangrio¹, Parveen Memon², Imran Samejo³

ABSTRACT

Objective: To assess the pattern of oral squamous cell carcinoma in patients presenting at LUH Hyderabad Sindh.

Study Design: Descriptive Study

Place and Duration of Study: This study was conducted at Oral Surgery Department, LUH Hyderabad, Sindh from January 2011 to December 2011.

Materials and Methods: Present study was done on 144 cases. Patients with biopsy proven oral squamous cell carcinoma of all age group and gender were included in the study. radiated, benign, metastatic tumors were expelled from study.

Results: Out of 144 patients, 80 (55.5%) were females and 64(44.4%) were males. Mean age group was 31-40 years of age 50 (34.7%). the majority frequent site was Buccal mucosa 44 (30.5%). 120 (83.3%) patients were having well differentiated oral squamous cell carcinoma and slightest frequent type was poorly differentiated oral squamous cell carcinoma 4 (2.77%) cases.

Conclusion: This study gives detailed account of oral squamous cell carcinoma as regards widespread age, Gender, Location and histological type of lesion.

Key Words: Oral squamous cell carcinoma, age, sex, site, histological type

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INTRODUCTION

High incidence of oral squamous cell carcinoma in many parts of the globe signifies a foremost health problem¹. Oral squamous cell carcinoma is the frequent form of oral malignancy. About more than 90% of oral malignancy are oral squamous cell carcinoma.^{2,3} oral Squamous carcinoma is a neoplasm of epithelial cells showing differentiation as characterize by the arrangement and presence of keratin and intercellular bridges respectively.⁴ The oral keratinocytes are cells of source of oral squamous cell carcinoma.⁵ Squamous cell carcinoma develops because of numerous molecular actions that build up from the mutual effect of those inherited predisposition and contact to ecological carcinogens such as alcohol, smoking, ultraviolet or radiations, chemical carcinogens, and microbes.⁶

Gene and hereditary material such as chromosomes might be damaged by chronic exposure to carcinogens. Mutation of oncogenes because of genetic damage that enhance cell survival and proliferation.

Oral sq. cell carcinoma accounts for more or less 4% of all malignancy in the western world.¹ In some south east Asian countries oral cancer are the frequent form found about a third of all cancers.⁷⁻⁹ In western earth the utilize of tobacco and alcohol are the greatest risk factors. Smokers are six fold risk of emerging oral cancer compared to non smokers. Alcohol drinkers are also six fold more probably to develop oral cancer than non alcoholic. The combined use of tobacco and alcohol contain fifteen fold risk of developing oral sq. cell carcinoma as compared to non user. Betel quid chewing is popular in India Taiwan, Bangladesh and Pakistan, is associated with high risk of rising oral sq. cell carcinoma. It is report that HIV, human papilloma viruses, Epstein barr viruses, HCV and several genes are also play role of oral cancer.¹⁰⁻¹² In spite of progress management options the death rate is remain large. The occurrence of oral squamous cell carcinoma are increasing particularly in younger persons.¹³⁻¹⁵

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MATERIALS AND METHODS

Present study was done on 144 cases at Oral Surgery Department LUH, Hyderabad, Sindh from January 2011 to December 2011. Biopsy proved cases of oral squamous carcinoma were included .exclusion criteria was radiated, metastatic and benign lesions. Following

sites of oral mucosa were distributed as tongue, cheek, buccalmucosa, lips, floor of mouth, gums and alveolus, palate and angle of mouth.

RESULTS

There were 144 cases of oral squamous cell carcinoma. The youngest and oldest were 10 years male and 87 years female respectively. Mean age of patients was 39.6 years. Utmost number of patients (34.7%) were in 31-40 years of age group, followed by 41-50 years of age group (25%). Results regarding age involvement of patients are shown in table-1. Frequent location of oral squamous cell carcinoma was Buccal mucosa (30.5%) patients followed by cheek 34 (23.6%) of patients. Table: 2 shows the results of site distribution of patients. Frequent histological type of oral squamous cell carcinoma was well differentiated squamous cell carcinoma No.120 (83.3%) followed by the moderately differentiated squamous cell carcinoma No.20 (13.8%) cases detailed distribution of histological types is given in table:3.

Table No.1: Age Distribution of Patients

Age in years	No. of Cases	%age
1-10	2	1.3%
11-20	2	1.3%
21-30	22	15.2%
31-40	50	34.7%
41-50	36	25%
51-60	20	13.8%
61-70	6	4.1%
71-80-	4	2.7%
81-90	2	1.3%

Table No.2: Distribution According to Site.

Site	No of Cases	%age
Tongue	26	18%
Buccalmucosa	44	30.5%
Cheek	34	23.6%
Gums & Alveolus	8	5.5%
Floor of mouth	4	2.7%
Lips	16	11.1%
Angle of mouth	6	4.1%
Palate	6	4.1%
Total	144	100%

Table No.3: Histological Types of Oral squamous Cell Carcinoma.

Histological Type	No of Cases	%age
(a) Well differentiated	120	83.3%
(b) Moderately differentiated	20	13.8%
(c) Poorly differentiated	4	2.7%
Total	144	100%

DISCUSSION

Squamous cell carcinoma has significant geographic difference in frequency, age of patient, site of involvement and its histological type. This may also be considered that exposure to different environmental factors and ethnic specific high risk social habits play role in pathogenesis of oral squamous cell carcinoma.¹⁶⁻²⁰ In developing countries oral squamous cell carcinoma is more than in developed countries. In Israel it is more common among Sephardic Jew than Ashkenazijews because of different geographic origin.²¹ In UK it is more widespread among Indian people born in Indian Sub continent and migrated to U.K. than among Indian instinctive in U.K.²² Several studies have shown that squamous cell carcinoma is equal or more frequent in males than females.^{23,24}

In this study most of the patients were female No. 80 (55.5%) compared to male patients No: 64 (44.4%). Social habits in females are also common in rural areas of Sindh. Most of the patients presenting to Liaquat University Hospital are from rural areas of Sindh, representing possible reason for female predominance. In this study most of the cases found between the age 31-40 No. 50 (34.7%) followed by 41-50 years of age No. 36 (25%). Previously it was seen that oral squamous cell carcinoma was common after 4th decade of life.²⁵ Age of occurrence of squamous cell carcinoma is declining and involvement of younger age is becoming common as in this study. This is also supported by other studies.^{26,27} Possible reason for this is social habits are becoming more common in younger age peoples.

Site of the lesion has prime importance regarding prognosis. Regional lymph nodes are commonly involved by metastasis of squamous carcinoma of lip, hard palate, and maxillary gingival with relatively favourable prognosis. As squamous cell carcinoma of tongue, floor of mouth and mandibular gingiva a lot metastasize to regional lymph nodes and are more insistent with less favourable prognosis. Squamous cell carcinoma of posterior division of oral cavity are much more probable to metastasize to regional lymph nodes than anterior division of oral cavity. Squamous cell carcinoma of tongue is frequent site in western globe. But in this study Buccal mucosa was the frequent site. Results of this study regarding common site of oral squamous cell carcinoma are matching with the other studies conducted in Pakistan.^{28,29} Possible reason for this is social habits of chewing tobacco products in our country.

The term differentiation refers to the extent of resemblance of tumor cells to their mother cells. In this study most of the cases 120 (83.3%) were well

differentiated squamous cell carcinoma. The present study regarding frequent histological type of lesion is consistent with other studies.^{29,30} Small well differentiated, low grade oral squamous cell carcinoma generally metastasize to regional lymph nodes following invading connective tissue muscles or bone. alternatively poorly differentiated high grade oral squamous cell carcinoma are in nature more aggressive and tend to metastasize to regional lymph nodes untimely in the route of disease. The grade of histological differentiation of oral squamous cell carcinoma reflects the aggressive capacity of the tumour. apparently as an independent issue, it does not significantly manipulate the prognosis. The depth of the infiltration of the tumour as determined histopathologically correlates significantly with the prognosis. Oral squamous cell carcinoma that have infiltrated more than 5mm in to the underlying tissues, are more to be expected to metastasize to lymph nodes with reduced prognosis, size and depth of primary carcinoma is related to local recurrence.³¹

CONCLUSION

This study gives detailed account of oral squamous cell carcinoma regarding frequent age, Sex, Site and histological type of oral squamous cell carcinoma.

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

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Mortality Comparison in Men and Women after Treatment of Myocardial Infarction at Tertiary Care Hospital

Sayed Fasih Ahmed Hashmi, Javeria Samejo and Anwar Shaikh

ABSTRACT

Objective: The objective of this study was to determine the 30 days mortality comparison in men and women after treatment of MI.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at the Department of Cardiology, Liaquat University Hospital Hyderabad from September 2015 to February 2016.

Materials and Methods: All the cases diagnosed of STEMI and NSTEMI, both genders and age between 25 to 85 years incorporated in this study. 30 days mortality of patients was recorded at hospital or through contacts numbers of deceased's close relatives.

Results: The mean age of the cases was 56 ± 12.2 years. Males were in the majority as compare to females 129 (69%) and 57 (31%) respectively. 43(23.4%) patients out of total 186 died within 30 days after acute myocardial infarction. On the gender wise comparison females mortality 21 (36.8%) was significantly high in the comparison of males 22 (17.05%) after treatment of myocardial infarction. P-value 0.001.

Conclusion: This study established that mortality higher in patient with acute myocardial infarction. Mortality was significantly elevated in females as contrasted to males.

Key Words: Acute myocardial infarction (AMI), Mortality, Gender

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INTRODUCTION

Cardiovascular disease (CVD) is a predominant factor of mortality in males & females in US.¹ It is a definite matter of interest that the un-regulated hospitalized deaths due to AMI is significantly greater in females as compared to males.^{1,2} The greater rate of deaths in females may be explained as increased age of women as well as the occurrence of more critical prognostic variables.¹ During 2005, out of 58,000,000 mortality rate around the world, 7,600,000 (i.e., 13%) mortality rate was due to coronary heart disease (CHD).³ MI is a major manifestation of the coronary heart disease as well as its prevalence in a population is frequently employed as a substitution for approximating the CHD load for that nation.³ Each year, it is approximated that nearly 55 thousand individuals suffer from AMI, as well as 27 people daily averagely. Notwithstanding, a number of reviews during the past 20 years propose that death

caused by an initial AMI is progressively declining,⁶ mainly as a result of novel technologies, further effective medications to regulate cardiac-associated stipulations, re-vascularization, and elevated prognosis of earlier indefinable AMI through high sensitive blood investigations. However, hospital mortality among hospitalized females due to MI is greater than males⁴ which is frequently accredited to the rather older age of women than men on the diagnosis time. Though, variance in hospitalized death after AMI have been predominantly noticed among young age females contrasted to their corresponding aged males correlative.^{5,6} Gender-based inconsistencies have as well been accounted in the therapy of AMI, as well as it has been claimed that such variances could be correlated with sex preference in doctors' approach of the. Though, research outcomes are varying in terms of whether women having AMI are further expected to be under treated, together with the re-vascularizational implementation.^{6,7} Several studies have observed the association between mortality and sex among cases admitted to hospitals with AMI, though these surveys have yielded conflicting results.^{8,9} Moreover, the small numbers of studies that have been performed on gender based data from regional or nationwide registries, which do not essentially present the condition of attention to AMI in hospitals in which this condition is treated.⁸ Therefore, purpose behind our study was the assessment of gender comparison regarding short-term mortality after treatment of AMI.

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MATERIALS AND METHODS

This descriptive case series study was held in department of cardiology at Liaquat University hospital (LUH) Hyderabad. With six months of duration from September 2015 to February 2016. All the cases with diagnosis of STEMI and NSTEMI, both genders, age from 25 years to 85 years and willing to participate in study were incorporated. All the cases having history of bleeding disorders, pregnancy and lactation, intracranial hemorrhage, identified physical cerebral vascular lesion (such as arterio-venous deformity), ischemic stroke in 3 months, Identified malignant intracranial neoplasm, closed head injury, suspected aortic dissection, chronic liver or kidney disease were excluded from the study. Complete medical history, physical examination and routine laboratory investigation were carried out. Cardiac enzymes were acquired through the laboratory unit of Liaquat university hospital. Data on the electrocardiogram (ECG) was collected through history as well as progress notes of physician. Presenting symptoms were acquired through the history as well as progress notes of physician. Data on therapy received and therapeutics used were collected from patient's files and discharge cards. 30 days mortality of patients was recorded at hospital or through contacts numbers of deceased's close relatives.

Data Analysis Procedure: Data analysis was performed through a statistical software SPSS. 16 Standard deviation and Mean were contrasted for quantitative factors. Percentages and Frequency were considered for qualitative factors. Stratification with respect genders with mortality was done. Chi square test were applied. $P \leq 0.05$ were taken significance.

RESULTS

Total 186 cases were selected for this study, mean age was of 56.8 ± 12.5 years of females and 55.6 ± 12.12 years of males, with range of minimum youngest one being 26 years old and maximum age was 84 years. Table No.1.

Males were comparatively more from females as: 129(69%) males and 57(31%) females Graph 1.

Hypertension and family history were the most common risk factors of acute myocardial infarction in our study, results shows in Table No.2.

Table No. 3 and 4 shows treatment given following acute myocardial infarction.

Table No.1: Descriptive statistics of age of the patients n=186

Gender	Mean \pm SD
Men	55.6 ± 12.12 years
Women	56.8 ± 12.5 years

Forty three patients (23.4%) cases were died out of total 186 cases within 30 days after acute myocardial infarction, out of them gender wise comparison of subjects showed that females had significantly higher mortality (N= 21, 36.8%) as compare to males (n = 22, 17.05%). P value 0.001. Table: 5

Table No.2: Frequency of risk factors n= 186

	Men n=129	Women n=57
Hypertension	71 (55 %)	32 56.1%
Diabetes	29 (22.4%)	6 10.5%
Family History	60(46.5%)	17 29.8%
Hyperlipidemia	13(10.0%)	7 12.3%

Table No.3: Treatment given in STEMI n=146

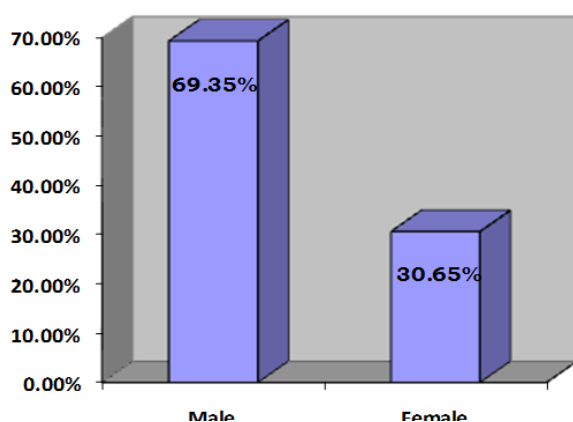
Treatment given in STEMI	Frequency			
	Men 101		Women 45	
	Count	%age	Count	%age
Oxygen	28	28.2	16	35.5
Aspirin	91	100	45	100
Clopidogrel	101	100	45	100
Morphine	24	24.2	13	28.8
Nitrates	63	63.6	33	73.3
ACE Inhibitors	85	85.8	35	77.7
Beta Blockers	41	41.4	23	51.1
Statins	72	72.7	28	62.2
Heparin	101	100	45	100
Coronary Angiography	171	7.1	10	22.2
PTCA	9	9	5	11.1
CABG	0	0	1	2.2

Table No.4: Treatment given in NSTEMI n=40

Treatment given in NSTEMI	Frequency			
	Men 28		Women 12	
	Count	%age	Count	%age
Oxygen	4	14.2%	3	25%
Aspirin	28	100%	12	100%
Clopidogrel	28	100%	12	
Morphine	4	14.2%	1	8.3%
Nitrates	27	96.4%	10	83.3%
ACE Inhibitors	17	60.7%	4	33.3%
Beta Blockers	20	71.4%	8	66.6%
Statins	28	100%	12	100%
Heparin	28	100%	12	100%
Coronary Angiography	9	32.1%	1	8.3%
PTCA	8	28.5%	0	0
CABG	1	3.5%	0	0

Table No.5: Frequency of mortality among men and women. CHI square test by gender n=186

Gender	Mortality N (%)		Level Of Significance
Men n- 129	22(17.05%)	107(82.7%)	0.001
Women n- 57	21(36.8%)	36(63.2%)	



Graph No.1: Gender wise distribution of patients n=186

DISCUSSION

This study compared the mortality in men and women. In our study total number of patients was 186 who were admitted. Men were 129 and females were 57. Total number of STEMI was 146 and NSTEMI were 40, of which 101 males and 45 females had STEMI and in NSTEMI 28 males and 12 were females. Epidemiological surveys exhibited that CHD appears at an earlier age in males as contrasted to females.^{10,11} We also found that mean age of men were 55.6+12.2 and females were 56.6+12.5. Females were older as contrasted to males about 1½ years. Females were about 8 years older as contrasted to males and this can possibly be the effect of estrogen in females which protects from atherosclerosis formation.¹² Until menopause, females have considerably less CHD than same age related men because of the effect of estrogen over plasma lipoproteins through escalating the HDL and reducing the LDL cholesterol. Men were higher in number than women in STEMI as well as NSTEMI in our study. The more frequent patients were in middle age group although no significant variance was found in age group.

Gender differences exist with regard to presentation and treatment in MI and also have been the issue of current cardiovascular research. Patients were appraised for the therapies suggested by the ACC-AHA recommendations for the therapy of MI since 1990. These included acute reperfusion therapy for subjects with STEMI with meantime of 12 hours of hospitalization, the administration of oxygen, morphine, aspirin, clopidogrel, nitrates, ACE inhibitors, statins as well as beta-blockers with meantime of 24 hours of hospitalization along with coronary angiography meantime of hospitalization. We also assessed the rate of CABG surgery in addition to PTCA during 30 days. Treatment variances with respect to gender continued without much difference from 1994 to 2002. Even though a number of studies considered time trends in administration of acute-MI, none appraised such variations according to subject's gender/race. Studies of

subjects who were recommended cardiovascular assessment found little difference in administration with respect to sex, along little variance over time. Compared with other studies.^{13,14} In our findings female cases having AMI had significant variances receiving certain treatments as contrasted to male patients. The most treatment given aspirin, clopidogrel, statins in men and women and both types of MI i.e STEMI and NSTEMI. In STEMI treatment men received thrombolytic therapy more than women. Less women were eligible for thrombolytic therapy on arrival compared to men. As well as Jneid et al.⁴ as well reported the underuse of evidence-based therapies as well as lower application of revascularization techniques for females. Thrombolytic were less used in females than in males in this study, perhaps females presented with the period from pain initiation to hospital arrival was extended more than 12 hours in duration due to severity of symptoms variations, which can possibly justify the delay in managing thrombolysis in women due to late arrival to hospital as compared to men. Beta blockers and ACE inhibitors were also given more to male this is because of women had low blood pressure and having more AMI complications as beta blocker and Ace inhibitors are contraindicated. Nitrates were also given more to males patients may be due to severity of symptoms. These results are similar with preceding research surveys on the variance in the therapy provided to males and females with MI.

Hypertension was most common risk factor in both genders although diabetes was common in females while smoking and hyperlipidemia were common in males. Similarly Shahab et al.¹⁵ reports that females were older as well as had greater incidence of diabetes (DM), dyslipidemia, and hypertension. The correlation of current smoking, high risk diet, abnormal lipids, obesity, as well as psychosocial stress factors with Myocardial Infarction was similar in females and males. Estrogen appears as protector against the coronary atherosclerosis. Hence, when comparatively young females acquire an AMI after rupture of the vulnerable plaque, they possess less ever ecoronary stenosis as contrast to older ladies or males.¹⁶ Due to the comparative paucity of advanced CS prior to their infarction, females can possibly not have earlier developed anis chemiresponse accomplished to protect them yocardiumin course of infarction by generating preconditioning and ortheprogess of collateral supply of the blood, as well as sex-associated variances in myocardial physiology as well as compliance can possibly as well be a factor of higher death among females.¹ As well as the general hospitalized death rates in our study on unselected patients were Forty three patients 43 (23.4%) out of total 186, died within 30 days after acute myocardial infarction. Gender wise comparison of female subjects showed significant higher mortality as compare to males' p-value 0.001.

Similarly in some other studies reported that females were another factor with higher death in subjects having Acute Myocardial Infarction.^{9,12,13}

CONCLUSION

This study established that mortality higher in patient with acute myocardial infarction. Mortality was significantly elevated among females as compare to males. Further big sample size studies or meta-analysis researches are needed on gender bias or gender impact on outcomes of acute myocardial infarction.

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

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Study of Depression in Diabetic Patients Presenting at Diabetic Clinic

Mujtaba Jaffary¹, Jawed Akhtar Samo² and Nasibullah Shah³

ABSTRACT

Objective: To determine the frequency of depression among patients of diabetes mellitus attending diabetes clinic.

Study Design: Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at Department of Medicines, Ch. Rehmat Ali Memorial Teaching Hospital, Lahore and Khairpur Medical College Hospital, Khairpur from 1st April 2016 to 30th September 2016.

Materials and Methods: A total of 196 patients with diabetes mellitus of age 18-65 years of either gender were included. Patients with history of mood disorders, psychotic disorders, anxiety disorders prior to onset of DM, other chronic disease and any drug addiction were excluded. The demographic information like name, age, sex, socioeconomic status and duration of disease was noted in each patient. All patients were assessed by single psychiatrist, using DSM-IV criteria for Depression (Yes/No).

Results: Mean age was 53.35 ± 6.71 years in our study with majority of the patients 97 (49.49%) were between 51 to 65 years of age. Out of the 196 patients, 89 (45.41%) were male and 107 (54.59%) were females. Majority of patients 54.41% belonged to upper socioeconomic status. Depression was found in 47 (23.98%) patients, whereas there were 149 (76.02%) patients having no depression.

Conclusion: This study concluded that prevalence of depression in type 2 diabetic patients was very high. So, proper evaluation of the co-morbid depression in diabetics should be done.

Key Words: Hyperglycemia, Depression, Complications, Socioeconomic status

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INTRODUCTION

The prevalence rate of depression in general population ranges from 6% to 17%.¹⁻³ In literature results of many studies showed depression as main reason for morbidity and mortality.⁴ Patients with diabetes mellitus (DM) have 2 fold increase risk of development of depression.⁵ Hyperglycemia and insulin resistance may contribute to depression by two mechanisms: 1) through its effect on symptoms, like difficulty to concentrate, complication fear and fatigue and 2) by reduction in neurotrophic functions, inflammatory process, physiological pathways which may leads to reduction in plasticity of neuronal networks and subsequently depression.⁶ Moreover, depression in diabetics may have negative effect on different aspects of diabetic care.

As co-existing depression in diabetic individuals is positively associated with decreased adherence to treatment, poor control of metabolism, higher rates of complication, decreased quality of life, increased healthcare use and cost, increased disability and lost productivity, and increased risk of death, therefore, recognition of depression is very important for improvement in diabetic care due to effective treatment is available and cost-effective.⁷

MATERIALS AND METHODS

This descriptive, cross sectional study was conducted at Department of Medicines, Ch. Rehmat Ali Memorial Teaching Hospital, Lahore and Khairpur Medical College Hospital, Khairpur from 1st April 2016 to 30th September 2016. Total 196 patients of diabetes mellitus either male or female having age from 18-65 years were selected. Patients with past history of mood disorders, psychotic disorders, anxiety disorders and personality disorders, pregnant lady (assessed on history and confirmed by urine pregnancy test), Patients with history of co-morbidities like myocardial infarction, congestive heart failure, hypothyroidism, stroke and hypertension, history of drug addiction and history of depression prior to the onset of diabetes mellitus were excluded from the study. Diabetes mellitus was defined as: patient of type two diabetes mellitus on oral hypoglycemic treatment for last 5 years with good control having HbA1c less than 8%. After permission

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from the ethical review committee, total number of 196 patients fulfilling inclusion criteria was enrolled. All patients were assessed by using DSM-IV criteria for Depression. Patient in whom five or more signs and symptoms at least for 2 weeks, as described by DSM-IV, were labelled as having depression.

Data was entered and analyzed with SPSS version 18. Mean and standard deviation was calculated for numerical data like age and duration of diabetes. Frequencies and Percentages were calculated for categorical data like gender and frequency of depression (yes/no). To minimize the effect of confounders, stratification was done for age, gender, family income and duration of diabetes. Chi square test was applied to see the effect of these on primary outcome. P value < 0.05 was taken as significant.

RESULTS

Total 196 patients were selected for this study. Age range in this study was from 18 to 65 years with mean age of 53.35 ± 6.71 years. Depression was found in 47 (23.98%) patients, whereas there were 149 (76.02%) patients having no depression as shown in Table 1. Patients were divided into three age groups i.e. age group 18-35 years, age group 36-50 years and age group 51-65 years. Total 33 (16.84%) patients belonged to age group 18-35 years and depression was noted in 06 (18.18%) patients. Sixty-six (33.67%) patients belonged to age group 36-50 years and 15 (22.73%) patients found with depression and 97 (49.49%) patients belonged to age group 51-65 years and depression was noted in 26 (26.80%) patients. Statistically insignificant association between age of the patients and depression was seen. It was found that there was no statistically significant (P = 0.580) difference of depression between different age groups (Table 2). Out of the 196 patients, 89 (45.41%) were male and 107 (54.59%) were females with male to female ratio of 1:1.2. Depression rate was 21 (23.60%) and 26 (24.30%) in male and female patients respectively. It was found that there was no statistically significant (P = 0.909) difference of depression between the both gender (Table 3). Patients were divided into three monthly group i.e. Rs.<10000, Rs.10000-20000 and Rs. >20000. Depression rate was 11 (25.0%), 16 (25.40%) and 20 (22.47%) in patients with monthly income Rs.<10000, Rs. 10000-20000 and Rs. >20000 respectively. But insignificant (P = 0.902) association of monthly income with depression rate was noted (Table 4). Total 75 (38.27%) patients found with ≤ 3 years duration of disease and 121 (61.73%) patients found with >3 years duration of disease and depression was noted in 13 (17.33%) and 34 (28.10%) patients respectively in both groups. Insignificant (P = 0.086) association between duration of disease and depression was noted (Table 5).

Table No.1: Frequency of depression

Depression	No.	%age
Yes	47	23.98
No	149	76.02

Table No.2: Association of age with depression

Age (years)	Depression			P value
	Yes	No	Total	
18-35	06 (18.18%)	27 (81.82%)	33 (16.84%)	0.580
36-50	15 (22.73%)	51 (77.27%)	66 (33.67%)	
51-65	26 (26.80%)	71 (73.20%)	97 (49.49%)	
Total	47 (23.98)	149 (76.02)	196 (100%)	

Table No.3: Association of gender with depression

Gender	Depression			P value
	Yes	No	Total	
Male	21 (23.60%)	68 (65.40%)	89 (45.41%)	0.909
Female	26 (24.30%)	81 (75.70%)	107 (54.59%)	
Total	47 (23.98)	149 (76.02)	196 (100%)	

Table No.4: Association of socioeconomic status with depression

Monthly income	Depression			P value
	Yes	No	Total	
<10000	11 (25.0%)	33 (75.0%)	44 (22.45%)	0.902
10000-20000	16 (25.40%)	47 (74.60%)	63 (32.14%)	
>20000	20 (22.47%)	69 (77.53%)	89 (45.41%)	
Total	47 (23.98)	149 (76.02)	196 (100%)	

Table No.5: Association of duration of disease with depression

Duration of disease	Depression			P value
	Yes	No	Total	
≤ 3 years	13 (17.33%)	62 (82.67%)	75 (38.27%)	0.086
>3 years	34 (28.10%)	87 (71.90%)	121 (61.73%)	
Total	47 (23.98)	149 (76.02)	196 (100%)	

DISCUSSION

For the development of chronic diseases, depression plays a crucial role. Individual with depression feel hopeless that they abandon the survival will. Diabetics with depression are less motivated to follow the healthy lifestyle, including maintenance of physical activities and healthy eating habits.⁸ As a result, diabetics with

depression have poor glycemic control than diabetics without depression.⁹ We have conducted this study to determine the frequency of depression among patients of diabetes mellitus. Age range in our study was from 18 to 65 years with mean age of 53.35 ± 6.71 years with majority of the patients 49.49% were between 51 to 65 years of age. Balhara et al¹⁰ and Mathew et al¹¹ in their studies had found mean age of 54 and 54 years respectively which is very much comparable to our study. On the other hand, Das et al¹² and James et al¹³ reported much lower mean age i.e. 46 and 45 years respectively in their studies compared to our study. In this study we noted a female predominance (54.59%) as also observed in many previous studies.^{10,13}

In literature, rate of depression in diabetics from 12-28%¹⁴ while Mathew et al¹¹ had found depression in 38.8% diabetic patients. In the present study, depression in 47 (23.98%) patients with type 2 diabetes mellitus. In one study by Balhara et al¹⁵ found only 16% of type 2 diabetics with depression. While in another study by Raval et al¹⁶ this prevalence was found to be much higher (41%) as compared with present study. Zahid et al¹⁷ reported the depression was 14.7% in diabetics while a higher (44%) depression rate was reported by Khawja et al.¹⁸ In another study, Das et al¹² reported depression rate as 46.15% of type 2 diabetic diabetics and Khamseh et al²⁰ reported depression rate as 71.8%. In an international study, depression rate was 24% in diabetics and 17% in non-diabetics.²¹ James et al¹³ in their study has found prevalence of depression in 30% patients with Type 2 diabetes mellitus compared to only 9.2% of non-diabetic patients. Mohamed et al²² had found this prevalence as 12.3%.

CONCLUSION

This study concluded that prevalence of depression in type 2 diabetic patients was very high. So, proper evaluation of the co-morbid depression in diabetics should be done, so that proper counselling and psychotherapy of these particular patients could be done in order to improve their quality of life and reduce the morbidity. Findings of the study also revealed that there is no association of depression with age, gender, area of residence and duration of disease.

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

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Metabolic Syndrome in Patients Having Cholelithiasis at Tertiary Care Hospital

Rasool Bux Behan¹, Adnan Ahmed² and Bilal Rasool¹

ABSTRACT

Objective: To evaluate the metabolic syndrome (MS) in patients having cholelithiasis at tertiary care hospital

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at General Surgery Department of Liaquat University Hospital Hyderabad from November 2015 to May 2016.

Materials and Methods: Both genders were included in the study, with diagnosis of cholelithiasis on ultrasound by senior sinologist. Before surgery the selected cases metabolic syndrome was assessed. MS criteria were defined according to 3rd Report of the National Cholesterol Education Program.²⁴ Metabolic syndrome was carried out in all the cases clinically and fasting blood for three fasting blood sugar and lipid profile. After results all the data was entered in the proforma.

Results: In this study majority of patients i.e. 42 (38.18%) belonged to age group of 41-50. 71(64.54%) patients were female. 60(54.55%) patients having cholelithiasis duration less than 5 years. 45(45%) had more than 5 years. 40(35.46%) patients have raised BMI. Regarding BP of patients 15 (13.6%) had raised systolic BP and 18 (16.36%) patients had raised diastolic BP. Fasting RBS elevated was in 40 cases. Total 29(26.36%) patients were associated with metabolic syndrome.

Conclusion: Metabolic syndrome is big prevalent and also can say a big risk factor for cholelithiasis. Female gender and older age peoples are highly affected by with gall stone due to metabolic syndrome.

Key Words: Gall stone, metabolic syndrome

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INTRODUCTION

Gallstones, is very commonest event amongst the most well-known and expensive of all the gastrointestinal diseases.^{1,2} Gallstones are strong calculi formed by accumulation of supersaturated bile made out of cholesterol monohydrate precipitates or through (black pigments) of the calcium bilirubinate polymerization.³ In US mostly 80% cholelithiasis contains cholesterol and its particles. In earlier 2 recent decades, much has been found out about the study of disease transmission of this situation and risk factors of it. Gallstones are connected with rich diet, DM type II, hyper-insulinism, lipid profile abnormalities, over weight and the metabolic syndrome.^{1,3} Cholelithiasis frequently found incidentally during ultrasonography or CT scan of the stomach area. Just 10% to 20% of asymptomatic cases will ultimately get to be symptomatic estimably within 5- 20 years of determination.

The normal rate at which patients create symptomatic cholelithiasis is small, around 2% for each year.^{3,4}

Development of cholelithiasis is because of changes in the direction of organic compound of release bile with a complete hyper-discharge of biliary cholesterol and related hyper-discharge of the bile acids, unbalancing the proportion and co-ordination of cholesterol/bile salts and lecithin, in a result of lithogenic bile.⁵ Expansion of the cholesterol level in cytoplasmic vesicles multilaminar particles, creating space for calculus development that bunches in the strong stone form.⁵ Cholelithiasis can change the location from GB to common bile duct regularly by means of cystic duct. Duct calculi can be asymptomatic or can create the dangerous complications like as cholangitis or pancreatitis.⁵ MS is expanding, particularly when related co-morbidities are considered. Incidence of MS differs as indicated by investigative selected criteria. Its incidence generally is 23.7%, despite the fact that the predominance changes broadly in analysis of the population,⁶ while greater in Mexican-American females 58.3% with age around 40-74 year.⁷ Newly incidence of MS Mexican populace was stated as 26.6% as indicated by NCEP-III criteria.⁸

A cluster of MS which comprises the intolerance of glucose, hyperinsulinemia, expanded LDL, TG, decreased HDL and hypertension.

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As well as obesity that continuously expanding around the world, is nearly connected with the expanded comorbidity and mortality brought on by a few of the most widely recognized illnesses in western world including DM, hypertension, CVD, growth, and cholelithiasis. Some studies have recognized the BMI and hyperinsulinemia are commonest causes of causes of cholesterol cholelithiasis.⁹ On other hand, hyperinsulinemia is thought to be a typical element connecting cholesterol cholelithiasis including DM and Obesity.^{10,11} Many studies reported different risk factors of cholelithiasis. Therefore purpose behind our study is to evaluate MS in cases having gall stone at LUMHS.

MATERIALS AND METHODS

This cross-sectional study was conducted at general surgery department of Liaquat University hospital Hyderabad. Study duration was 7 months from November 2015 to May 2016. Both genders were included in the study, with diagnosis of cholelithiasis. All the patients above 30 years of the age were incorporated. Cholelithiasis defined as strong intraluminal echoes presentations on ultrasound at radiological department. Before selection of each case, ultrasounds were repeated in fasting same radiologist. Before surgery in the entire selected cases metabolic syndrome was assessed according to criteria of 3rd Report of the National Cholesterol Education Program,²⁴ and this criteria was defined as: I obesity = waist circumference more than 102 cm among the males and more than 88 cm among females. II Hypertriglyceridemia = TG 1.7 mmol/L. III Low HDL = <1.03 mmol/L among males and <1.3 mmol/L among females. IV Hypertension = >17.3/11.3 kPa V = FBS ≥6.1 mmol/L. MS was carried out in all the cases clinically and fasting blood sample sent to the hospital laboratory for FBS and lipid profile evaluation. After results all the data was entered in the proforma.

RESULTS

In this study majority of patients i.e. 42 (38.18%) belonged to age group of 45-50 years while 31(28.18%) patients belonged to age group of 35-44 years, 22(20%) patients belonged to age group of 25-34 years. 39(35.45%) patients were male while 71(64.54%) patients were female. 60(54.55%) patients having cholelithiasis duration less than 5 years, 45.45% had more than 5 years. Table 1.

Regarding BMI in 40(35.46%) patients have elevated, while 70 (64.55%) patients have Normal BMI. Table 2. Regarding BP of patients 15 (13.63%) had raised systolic BP and 18 (16.36%) patients had raised diastolic BP. While 95(86.36%) patients had normal systolic and 92(83.63%) had normal diastolic BP. Fasting RBS was normal in 70 cases while elevated was in 40 cases Table.2

Regarding lipid profile of patients 91(82.72%) patients had normal HDL level, while 51(46.36%) patients had normal LDL, 79 (71.81%) had normal TG and 89(80.90%) had normal total cholesterol level. Abnormal level of LDL was seen in 59 (53.63%), STG in 31(28.18%) and total cholesterol in 30 (19.0%). table 3 81(73.63%) patients with gall stones were without metabolic syndrome while 29(26.36%) patients were associated with metabolic syndrome. Figure 1.

Table No.1: Demographic data of patients n=110

Demographic variables	Numbers	%
Age		
15-24 years	15	13.63%
25-34 years	22	20.0%
35-44 years	31	28.18%
45-50 years	42	38.18%
Gender		
Male	39	35.45%
Female	71	64.54%
Duration of cholelithiasis		
<5 years	60	54.55%
> 5 years	50	45.45%

Table No.2: BMI, BP and FBS of the patients n= 110

Variables	Abnormal	Normal
BMI	40(35.46%)	70(64.55%)
Systolic BP	15 (13.63%)	95 (86.36%)
Diastolic BP	18 (16.36%)	92(83.63%)
RBS	30 (27.27%)	80 (72.72%)
FBS	40 (36.36%)	70 (63.63%)

Table No.3: Lipid profile of patients n= 110

Lipid profile	HDL	LDL	TG	T-cholesterol
Normal	91 (82.72%)	51 (46.36%)	79 (71.81%)	89 (80.90%)
Abnormal	19 (17.27%)	59 (53.63%)	31 (28.18%)	30 (19.0%)

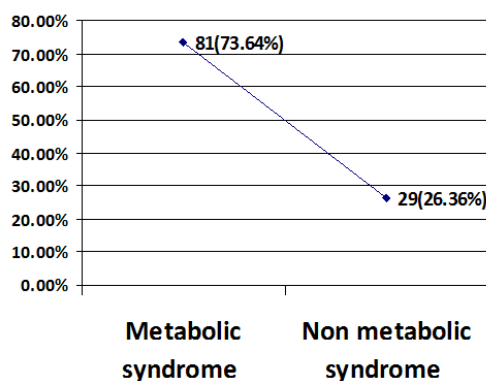


Figure No.1: Frequency of metabolic syndrome in patients n= 110

DISCUSSION

In our study, old age people were found to have metabolic syndrome more as compare to young age

group. Our results were consistent with those from previous studies conducted in the different regions of Asia and Western countries, in which older age was a significant risk factor for GSD.¹¹⁻¹⁴. A study on senior citizens in Taiwan similarly demonstrated that age>60 years was the major risk factor for the development of GSD. Long-term exposure to associated risk factors, such as Chronic environmental factors might also contribute to the effects of aging and cause cholelithiasis.¹⁵

Obesity is the commonest risk factor for cholelithiasis because it is linked to the increased hepatic secretion of cholesterol. The underlying mechanism for increased risk of GSD in patients with obesity could be increased bile saturation, resulting from elevated cholesterol in biliary secretion. Elevated cholesterol in biliary secretion as well as depend on more synthesis of cholesterol in obese people¹². In our study population, we observed that obesity was significantly associated with GSD in women but not in men. In previous studies, men with GSD and high BMI have tended to be associated with other indices of obesity like as slimming management.

In our study 26.36% patients had metabolic syndrome associated with gall stones, and 64.55% pts had raised BMI and were obese. There are several studies¹⁶⁻¹⁸ That examined linkb/wMS or its components and the prevalence of gallstones. Linked to MS. Chang et al¹⁸ reported obesity and MS is higher in subjects having gallstones as compare to those without. Shaffer¹⁹ reported obesity as a major risk factor for GD. Another study²⁰ also reported a recent marine research compare lean and the obese mice fed a low- versus high-carbohydrate GB. It was also demonstrated that a high-carbohydrate diet exacerbates this phenomenon. In this study females were more found to be affected with metabolic syndrome due to more chances of cholelithiasis as compare to males. Although sex as big cause of calculi remains controversial, earlier research have identified higher GSD incidence in women than in men in Western countries, with estrogen considered the cause of the sex differences.

In this study 16.36% patients had raised systolic BP and 13.63% patients had raised diastolic BP. L.Y. Chen et al¹¹ reported that systolic BP and diastolic BP was high in cases having cholelithiasis as compared to controls. A Taiwan study stated that cholelithiasis in Asian peoples having obesity is significantly linked with increased diastolic BP²¹. BP \geq 130/85 mmHg was significantly a big cause of cholesterol gallstone²². Mechanism elevated BP increased risk of cholelithiasis still remains unclear. Some scholars stated that this link could be determined through action of insulin in hypertension, as well as dyslipidemia is commonest MS, no final evidence links abnormalities of lipid profile and cholelithiasis. A Korean study²³ reported the HDL level had significantly low in cases having GSD; though,

they had no found any component of dyslipidemia link with MS which could be correlated with GSD formation.

CONCLUSION

In our study results we concluded that metabolic syndrome is big prevalent and also can say a big risk factor for cholelithiasis. Indicate that female sex, older age peoples are highly affected by with gall stone due to metabolic syndrome. Further big sample size studies are required for more accurate findings.

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

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Aetiology and Clinical Presentation of Paediatric Cholestatic Liver Disease - A Single Centre Experience

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ABSTRACT

Objective: To evaluate the causes, clinical presentation and outcome of paediatric cholestatic liver disease in a tertiary centre.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at Pediatric Gastroenterology, KFSH&RC, Jeddah from September, 2006 to September, 2016.

Materials and Methods: A data sheet was designed to collect data from hospital ICIS power chart system. Children with initial presentation of cholestatic liver disease below the age of six months were included in this study. Children with autoimmune hepatitis, wilson disease and hepatitis B and C were excluded from the study.

Results: Among 25 children 18 were male and 7 were female and male to female ratio was 2.5:1. Regarding the aetiology of cholestatic liver disease 8 children (32 %) were diagnosed with PFIC II. There were 6 cases (24 %) of idiopathic hepatitis, 4 (16 %) with Alagille syndrome, 3 (12%) with biliary atresia, 2 children (8 %) of sclerosing cholangitis and 2 (8%) with mitochondrial disease. In our study almost all children 25 (100%) presented with jaundice, 7 (28%) children were with failure to thrive, 5 (20%) children had significant abdominal distension, 7 (28%) children had developmental delay, only two (8%) children have pruritis. Out of 25 children 23 (92%) survived and only two children (8%) died.

Conclusion: In our study the PFIC II remains the most common cause of cholestatic liver disease. The most common clinical presentation was jaundice and with early management the outcome was good.

Key Words: Cholestasis, liver disease, Idiopathic hepatitis, PFIC, Alagille Syndrome, Biliary atresia

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INTRODUCTION

Cholestasis is defined as an impairment in the excretion of bile, which can be caused by defects in intrahepatic production or transmembrane transport of bile, or mechanical obstruction to bile flow. Elevated conjugated bilirubin is the predominant characteristic in most of the causes of cholestasis.¹ Cholestatic Liver disease has major impact on children. The clinical presentation of liver disease can vary greatly between individuals. By reviewing other studies, the causes of cholestatic liver diseases differ from country to country. For instance, biliary atresia was the most common cause of liver disease in Korea.³

whereas metabolic liver diseases account for most of cases of acute liver failure in infants and young children in Europe⁴. Clinically, pruritus, fatigue, pale, stools, or even steatorrhea may present with fat-soluble vitamins deficiency⁵. Early evaluation for patency of the extra-hepatic biliary system is important as early surgical intervention results in a better outcome⁶.

Liver transplantation is a life-saving procedure for paediatric patients who have severe or end-stage liver disease.⁷ Therefore early identification of disease is important in paediatric age group to avoid any delay to improve the outcome.

MATERIALS AND METHODS

It is an observational / descriptive study which was conducted at Paediatric gastroenterology, hepatology & nutrition, King Faisal Specialist Hospital and research centre (KFSH&RC), Jeddah, Saudi Arabia. The hospital is a tertiary specialist centre which provides modern medical care to patients in western region of the Kingdom of Saudi Arabia. Children with initial presentation of cholestatic liver disease below the age of six months were included in this study. Children with hepatitis, B, hepatitis C, wilson disease and autoimmune hepatitis were excluded from the study.

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The data was collected from September, 2006 to September, 2016.

A data sheet was designed to record the aetiology of choestatic liver disease, demographic data for age, gender, age of presentation, clinical presentation and outcome. The data was collected from hospital ICIS power chart. The data was presented in percentages and frequencies in form of a pie chart and tables.

RESULTS

Among 25 children 18 were male and 7 were female and male to female ratio was 2.5:1. Regarding the aetiology of cholestatic liver disease 8 children (32 %) were diagnosed with progressive familial intrahepatic cholestasis (PFIC), all were of type II. There were 6 cases (24%) of idiopathic hepatitis, 4(16 %) with Alagille syndrome, 3(12%) with biliary atresia, 2 children (8%) of sclerosing cholangitis and 2(8%) with mitochondrial disease as shown in figure 1.

Table No.1: Clinical Presentation of patients with cholestatic liver Disease

Clinical Presentation	Children affected	Percentage
Jaundice	25	100%
Failure to thrive	7	28%
Developmental delay	7	28%
Abdominal distension	5	20%
Pruritis	2	8%
UTI	1	4%
Sepsis	1	4%
Hepatocellular carcinoma	1	4%
Recurrent Diarrhea	0	0%
Recurrent chest infections	0	0%

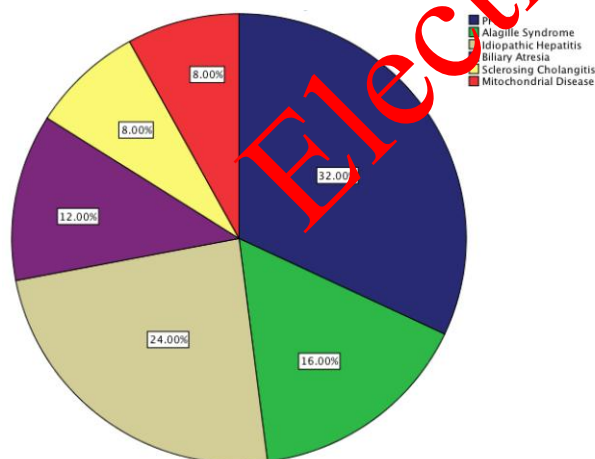


Figure No.1: Causes of cholestatic liver disease

In our study almost all children 25(100%) presented with jaundice, 7(28%) children were with failure to thrive, 5(20%) had a significant abdominal distension, 7(28%) children had developmental delay, only two (8%) children have pruritis, one (4%) had one (4%) presented with sepsis and one child (4%) had urinary

tract infection with underlying cholestatic liver disease. Recurrent diarrhoea and chest infections were not observed in any child as shown in table 1.

Out of 25 children 23 (92%) survived and only two children (8%) died. Thirteen children (52%) were referred for liver transplantation and two children have had hepatoportoenterostomy (Kasai procedure). The rest of our patients are doing well on conservative medical management.

DISCUSSION

Several studies had been done to evaluate the causes and clinical presentation of cholestasis. They have reported variable results with the neonatal hepatitis remaining the commonest causes of cholestatic syndromes ranging from 38% to 79%.^{8,9,10} Danks et al (1977) and Dick et al (1985) suggested idiopathic hepatitis remained as the main cause of Cholestasis, but their studies antedate the descriptions of recently recognized metabolic causes of cholestasis.¹¹ On the other hand advances in preventive medicine may result in the lower incidence of congenital infections compared to idiopathic hepatitis in some recent studies.¹² However the study done in Brazil showed Inherited syndromes of intrahepatic cholestasis and biliary atresia are the most common causes of chronic liver disease and the prime indication for liver transplantation in children.¹³

In our study the progressive familial intrahepatic cholestasis (PFIC) is the most common cause of cholestatic liver disease in children (32%), however interestingly all of our PFIC cases are of type 2. As more and more metabolic diseases involving the liver are being diagnosed and due to advancement in medical science and diagnostic methods, the incidence of idiopathic hepatitis is decreasing gradually.^{14,15}

Our data showed only 24% of children were diagnosed with idiopathic hepatitis. This is similar to a study done in Iran by Seyed Mohsen Dehghani et al in 2015 in which biliary atresia (24.6%) and Idiopathic hepatitis (24%) were found to be the most common causes of cholestatic liver disease.¹⁶ But our study showed only 12% of our cases were found to have biliary atresia. This difference was due to children below three months of age were recruited in Iranian study while in our study children above three months were also included. The most common clinical presentation in our study was jaundice but a significant number of children have had growth failure, abdominal distension and developmental delay. Pruritis is a recognised feature of chronic cholestasis in children.¹⁷ But in our study due to early diagnosis and management it is seen in only 8% of children. The recurrent diarrhea and chest infections were not observed in our study and again it may be due to early management. Another important complication in PFIC II is the development of hepatocellular carcinoma or cholangiocarcinoma in 15% of the

patients.^{18,19,20} Our data revealed one out of 8 patients (12.5%) developed hepatocellular carcinoma who did not undergo liver transplantation as his parents declined the offer. These findings emphasise the need to maintain a close surveillance for the development of malignancy in children with PIFC II.

CONCLUSION

In our study the progressive familial intrahepatic cholestasis was the most common cause of cholestatic liver disease followed by Idiopathic hepatitis. The most common clinical presentation was jaundice. More than half of our patients needed liver transplantation to improve the outcome of disease. Based on our small study we suggest that more research work should be done in relation to genetic and metabolic aetiology of children with cholestatic liver disease

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

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Effects of Smokeless Tobacco Alters the Histology of Kidney of Offspring's in Swiss Albino Mice

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ABSTRACT

Objective: To study the micro structural changes in the kidney of the offspring's of Swiss albino mice exposed to smokeless tobacco during pregnancy.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at the Animal House of the Department of Animal Husbandry and Veterinary Sciences (AHVS) Sindh Agriculture University, (SAU) Tandojam from July 2015 to December 2015.

Materials and Methods: Healthy adult female mice were mated. After confirmation of pregnancy, 20 pregnant mice were categorized into two categories, experimental group A and control group B. Group-A was provided Tobacco 5% mixed with standard diet along with clean water ad libitum, whereas group B, the control was provided standard diet and clean water ad-libitum throughout their pregnancy. After birth 20 offspring (10 male & 10 female) were selected randomly from each group. At 15 days after birth, the offspring were sacrificed by cervical dislocation and their kidneys were dissected out for histological analysis.

Results: The histological marked changes were seen in the kidney of offspring's of mice. In the experimental group of offspring there were very few glomeruli and also more immature glomeruli were observed. Glomerular degenerative changes, micro calcifications were noticed in both female and male offspring's of experimental group. Fatty change was observed in the renal parenchyma of the experimental group in 14 animals 9 male and 5 female offspring's showed edematous change and fatty infiltration. Glomerulus architectural distortion and displacement were also seen in kidneys of both offspring's.

Conclusion: Consumption of smokeless tobacco having significant effects on structure of kidney of offspring of mice that presented with the cellular injury to kidney parenchyma especially fatty infiltration as well as glomerular distortion and degenerative changes.

Key Words: Smokeless Tobacco, Offspring, Kidney

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INTRODUCTION

Tobacco is being used since centuries in variety of ways and forms like smoking and smokeless tobacco.¹ The smokeless tobacco (ST) usage is rising day by day because of indoor smoking bans, unproven awareness of safety, as well as reported "positive" physiological outcomes, for example relaxation, increased alertness, raised concentration, hallucination and produce anorexia.² The commonest types of smokeless tobacco existing and utilized in Pakistan includes: Betel/pan with tobacco, Naswar, snuff, Chaallia/supari with tobacco, Gutka and pan masala.³

The utilization of ST can lead to cancer among people as well as have greater risk of gum & cheek cancer. ST utilization may be addictive, causing gingival recession, (oral mucosal lesions) oral leukoplakias, and can possibly contribute significant occurrence of peripheral vascular disorder, cardiovascular disorder, peptic ulcers, hypertension, and fetal comorbidity & mortality.^{4,5} The utilization of Smokeless Tobacco imbalances the electrolytes in kidney hemodialysis patients as well as alters the renal antioxidant mechanism and renal microstructure in rodents.⁶⁻⁸ Health experts have long reflected interaction to tobacco smoke injurious to reproduction, distressing features from fertility as well as pregnancy consequence to fetus and its development. The Smoke of tobacco comprises thousands of compounds, a few of them are identified to impose toxic outcomes on reproductive health, for example nicotine, carbon monoxide (CO), and metals.⁹ Several surveys have reported the relationship amid maternal tobacco chewing and long-term health effects within the offspring, together with obesity, cardiovascular and respiratory disorders.¹⁰ Maternal use of smokeless tobacco is correlated with intrauterine growth

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retardation (IUGR); whereas intrauterine growth retardation in turn, is correlated with diminished quantity of nephron within the off spring.¹¹ Undoubtedly, human research has exhibited that either use of smoking and smokeless tobacco is strongly associated with lower fetal renal volumes in the course of 2nd & 3rd trimester, and lesser the birth weight.^{12,13} In human beings, nephrogenesis initiates at gestational week¹²⁻¹⁴ and terminates at gestational week 36.¹⁶ Majority of nephrons are created during 3rd trimester,¹⁵ as well as the definitive quantity of nephrons in every kidney is formed at birth. Though, among rodents, nephrogenesis remains following birth for a little time period till weaning.¹⁷ Modification of the growth factors at any point of renal development may result in underdevelopment of kidney as well as potential kidneys dysfunction.^{18,19} Although there are many studies about the hazards of usage of smokeless tobacco in the course of pregnancy and its effects in literature, but due to the structure and scope of these studies, the utero-placental mechanism of smokeless tobacco and its effects on fetal and infant organs is not clearly understood and histological experiments are also limited. The purpose of this study was to examine the modifications of renal micro structure in mice offspring due to consumption of ST during pregnancy.

MATERIALS AND METHODS

Female & male Swiss albino rats were acquired via the animal house of the Department of Animal Husbandry and Veterinary Sciences (AHVS) Sindh Agriculture University, (SAU) Tandojam. Healthy female Swiss albino mice were mated. The animals were reared in a hygienic as well as well-aired setting. Mice were given diet (lab chow) as well as tap water ad lib. The dark/light cycle was looked after at 12 hours intervals. 20 non-pregnant Swiss albino mice aged from 10 to 12 weeks with 28gm of average weight were selected randomly, as well as were categorized into two categories; each category with ten mice. Each female mated with male adult mice reserved for sex for four to ten days to increase their urge of sex for female mice. One male mouse was mated with two females. Pregnancy was confirmed by presence of mucus vaginal plug between 1-10 days of pairing. On pregnancy confirmation the male mice were isolated.

After confirmation of pregnancy 20 pregnant female mice were categorized into two categories, Group A was given Tobacco 5% mixed with usual food along with clean water ad-libitum, whereas group B, the control was provided regular diet and clean water ad libitum throughout their pregnancy. After birth 20 offspring (10 male & 10 female) were selected randomly from each group.

Offspring of both A and B categories were allocated sub categories as follows:

Group A-1 (Experimental group) 10 male offspring

Group A-2 (Experimental group) 10 female offspring
Group B-1 (Control group) 10 male offspring
Group B-2 (Control group) 10 female offspring

15 days after birth, the offspring were sacrificed by cervical dislocation and their kidneys were dissected out for histological analysis.

The kidneys were removed and set in 10% formaldehyde later dehydration was performed in leading qualities of alcohol. The tissues then were freed from xylene quickly to eliminate the alcohol. Impregnation/infiltration was performed for two alterations of soft molten paraffin wax; each at the temperature of 58°C upto 30 minutes. Implanting & dipping in paraffin wax with two L- formed pieces of metal was performed as well as sectioning was done with a microtome. Four micron (u) thick sections were done on rotary microtome then dipped in hot water container.

The sections were fixed on slides by a thin layer of egg albumen coated on every slide. De-waxing was performed by hot plate at 37°C afterwards clearing in two alterations of xylene.

Isolation of Xylene was done through absolute alcohol and at last prior to staining, hydration was carried out. The sections were stained with hematoxylin & Eosin and fixed in Canada balsam. The slides were assessed for histopathological variations under light microscope. All data was recorded in the proforma.

RESULTS

The Histological Profile of the Kidney Section: The marked histological changes in the kidney were seen in smokeless tobacco exposed offspring.

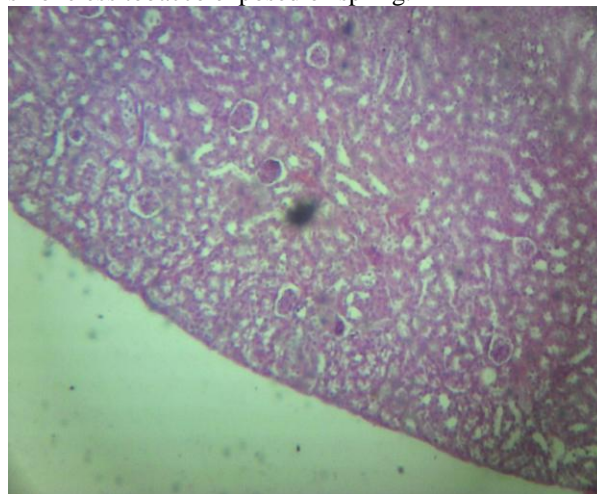


Figure No.1: A section of kidney of offspring of mice showing normal architecture of kidney

In the experimental group of offspring there were less glomeruli & further immature glomeruli were observed as contrasted to Control offspring. Glomerular size was also significantly decreased that there was

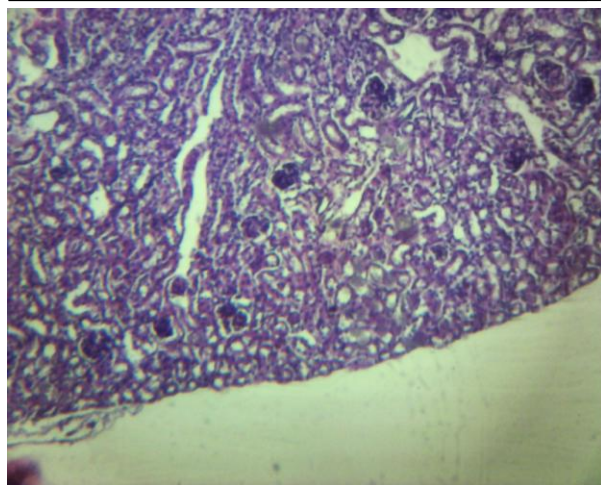


Figure No.2: A section of kidney of male offspring of mice showing shrinkage of glomeruli, necrosis and disruption of renal tubules

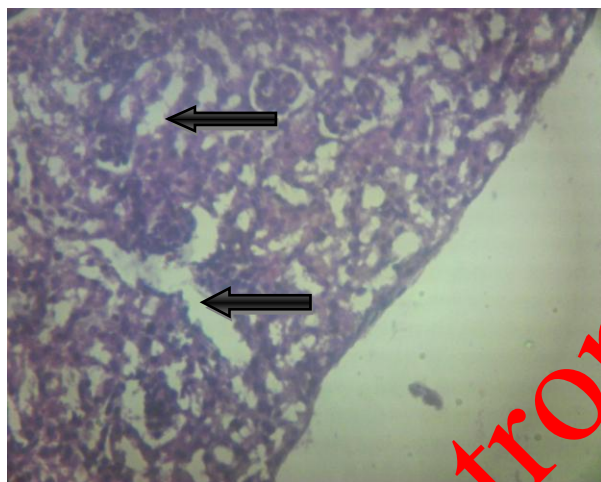


Figure No.3: A section of kidney of offspring of mice showing Distortion and Edematous change of Glomerulus and Tubular Necrosis

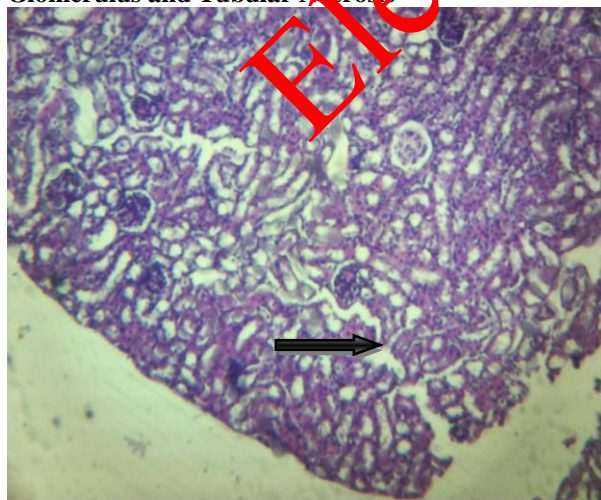


Figure No.4: A section of kidney of offspring of mice showing micro calcifications

shrinkage and distortions of glomerular architecture seen in the experimental male and female offspring. The animals of treated group subjected to smokeless tobacco exhibited significant degenerative variations, fatty infiltration and edematous changes in kidney parenchyma. The more potent destructive structural changes of glomerulus as well as tubules were seen in male offspring as compared to female offspring. In which 14 male offspring and 9 female offspring showed edematous change and fatty infiltration. Glomerulus shrinkage and distortion were seen in both offspring in which 11 male offspring and 5 female offspring showed these findings in their kidney architecture.

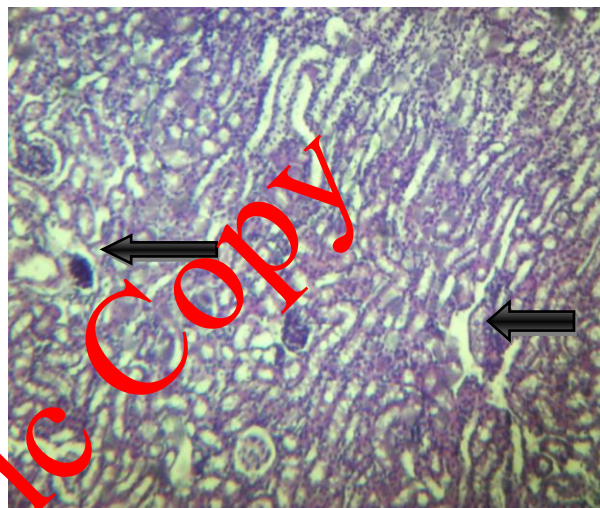


Figure No.5: A section of kidney of offspring of mice showing glomerulus degenerative changes, loss of architecture & tubular inflammation

DISCUSSION

This study showed that smokeless tobacco having significant effects on the microstructure of kidney of offspring mice. The most important finding of this study exhibits that maternal smokeless tobacco exposure in gestational period is evidently correlated with loss of kidney architecture causing kidney dysfunction as well as raised inflammatory indicators. Structurally, subtle variations were noticed in glomeruli and tubules within the kidneys of ST exposure progenies. Inflammation associates with kidney impairment and plays a vital role in the development of chronic renal disorder, which was well exhibited in current study. Consequently, the progenies of SE dams can possibly be inclined to more kidney impairment with the progression of adulthood. Varying forms of cellular degeneration were noticed in the proximal convoluted tubules that can possibly settle the functional reliability of proximal convoluted tubules. This attribute can possibly cause the retention of metabolic waste products as well as endurance of such abnormalities can possibly lead to loss of delicate homeostatic systems of the kidney.^{20,21} as well as

histological cardiac, hepatic lungs and renal surveys, as well as testes were conducted in terms of procedures defined by Disbrey & Rack²² and Drury & Wellington.²³

Usage of smokeless tobacco is relatively prevalent in the Middle East, Far East as well as European nations⁵. Chewing tobacco of different brands is available in most part of our country. The commonest types of smokeless tobacco present and utilized in Pakistan comprise: catechu (*Acacia catechu*), tobacco, Betel/pan with tobacco a chewed areca nut mixture (*Areca catechu*), slaked lime [calcium hydroxide (CaOH)₂ and calcium oxide (CaO)], wrapped in a (Piper betel)betel leaf with sweetening agents.²⁸

Some studies^{24,25} have been conducted to determine the outcome of nicotine on fetal growth as well as whether this could be correlated with the activities of this drug over the metabolism of maternal adipose tissue. It has though been speculated that nicotine existing in tobacco smoke can possibly result in reduce maternal appetite, uterine vasoconstriction, or somehow produce metabolic variations within the mother and/or fetus reported by Nakamoto T, et al²⁶.

The placenta contributes significantly in prenatal development through carrying nutrients as well as waste products amid fetal & maternal circulation and by offering hormones required for typical development. Human placental explants can be developed as well as examined experimentally in vitro reported by Jauniaux E, et al²⁴. In one such study, it was shown that nicotine unaccompanied was capable of inhibiting variation and thus inhibitory to trophoblast invasion within an in vitro test. These authors more over exhibited that nicotine retarded synthesis as well as activation of type-IV collagenase, which is essential for cytotrophoblast invasion. A few placental surveys have included an fascinating association of in-vitro and in-vivo experimentation^{24,25}. This study showed in the tubular structure of the cortex of kidney of animal's nicotine exhibited disturbance in the histological structure of kidney. Nicotine is a fundamental component of tobacco that retards the development and variation of cytotrophoblasts within human placenta. Nicotine can possibly caused decreased blood flow and vasoconstriction reported by Kazi AS et al.²⁸ Nicotine can as well escalate maternal blood pressure (BP) and cardiac rate, dropping uterine blood flow²⁶. In our study the necrotic and inflammatory changes were noticed in the ST dams, which are in relation to the study of Agarwal R, et al.²⁷ similarly in the study of Jagadapillai R, et al²⁹ reported that renal proteins expression was affected by CSE belonged to inflammatory diseases, as well as indicated that CSE altered kidney proteome.

CONCLUSION

From these interpretations, it can be concluded that exposure of the smokeless extract may be associated

with structural damage of kidney in the offspring of mice.

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

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What to be Used for Hemodynamic Stability in Day Care Surgery - Laryngeal Mask Airway or Endotracheal Tube

Muhammad Nadeem Khan¹, Sadique Hussain² and Muhammad Waseem Khan³

ABSTRACT

Objective: To compare the haemodynamic changes between Laryngeal Mask Airway (LMA) insertion & Endotracheal intubation in day care surgery.

Study Design: Quasi Experimental Study.

Place and Duration of Study: This study was conducted at the Department of Anaesthesia, Divisional Headquarter Teaching Hospital Mirpur from May 2015 to May 2016.

Materials and Methods: This study was conducted after taking permission from the Hospital Ethical Committee. One hundred patients fulfilling inclusion criteria were selected by non probability convenient sampling after taking informed written consent. They were divided into two groups (LMA-A and ETT- B) scheduled for different elective day care surgical procedures under general anaesthesia. Group A comprised of fifty patients in whom LMA was inserted. Group B comprised of fifty patients in whom ETT was inserted. Patient's systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), heart rate (HR) and pulse oximetry (SPO2) baseline and on 01,03,05,07,09 than after every three minutes were recorded. All the data compared and analyzed by SPSS-10.

Results: It was observed that 99% i.e. forty-eight patients of group A (n=50) did not show intraoperative hemodynamic changes and only 1% i.e.2 patients showed hemodynamic changes. While 95% i.e. forty patients of group B (n=50) did not show hemodynamic changes and remaining only 5% i.e. 10 patients showed intraoperative hemodynamic changes.

Conclusion: The use of LMA significantly reduces the intraoperative hemodynamic changes compared to ETT in day care surgery.

Key words: Laryngeal mask airway, Endotracheal tube, Hemodynamic changes, day care surgery

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INTRODUCTION

There is an explosion in the number of day surgery procedures conducted in both developed and developing countries. The advances in anaesthesia, surgery and monitoring technology have allowed increasingly complex surgeries being performed on patients even with multiple comorbidities^{1,2}. Haemodynamic stability is an important aspect to the anaesthesiologist for the benefit of the patients especially during laryngoscopy, intubations and laryngeal mask insertion. It can cause striking changes in Hemodynamics as a result of intense stimulation of sympathetic nervous system.

We have attempted to compare the use of LMA with ETT to establish a truth that which one is superior regarding intraoperative hemodynamic stability in patients reported to our teaching hospital for Day Care Surgery as minimal changes have marked effects on patients with cardiac and cerebral diseases.

Day case surgery: Patients are discharged from the hospital on the day of procedure taking approximately less than 60 minutes to complete with no severe hemorrhage or postoperative pain¹⁰

MATERIALS AND METHODS

After approval from hospital ethical committee, this quasi-experimental study was conducted in the Department of Anaesthesiology Divisional Headquarter Teaching Hospital Mirpur Azad Kashmir from May, 2015 to May, 2016. One hundred patients, all normotensive non diabetic and having average built belonging to ASA-I ranging from 20-60 years, both Male/Female, categorized in Mallampatti I and II candidate for Day care surgery selected by non probability convenient sampling were included in study after taking informed written consent. While Patients with Emergency surgery, Difficult airway (mallampatti III and IV), Cardiovascular diseases (Hypertension,

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IHD, etc) Respiratory diseases(COAD,ILD,etc) and Patients with full stomach were excluded from the study.

They were divided into two groups (LMA-A and ETT- B) scheduled for Day care surgery under general anaesthesia. Group A comprised of fifty patients in whom LMA was inserted. Group B comprised of fifty patients in whom ETT was placed. The conduct of anaesthesia was kept same in both the groups.

Regarding group description and sampling technique, the technique devised was non probability convenience sampling. Patients were divided into two groups on the basis of even and odd numbers i.e., from number 1--99, all the odd numbers were taken as group A(1-3-5-7---99) and all the even numbers were taken as group B (2-4-6-8---100). Patients were assessed pre-operatively for anaesthesia and surgery. On arrival in operation theatre venous access was secured and monitoring of base line parameters including, non-invasive blood pressure NIBP, mean arterial pressure MAP, heart rate HR, pulse oximetry SpO₂ and ECG were started. Conduct of anaesthesia in both groups was kept similar which included pre-oxygenation with 100% oxygen for three minutes, injection nalbuphin 5mg, propofol 2mg/kg atracurium 0.5mg/kg, followed by insertion of LMA or tracheal intubation, intermittent positive pressure ventilation and isoflurane 1%. Patient's systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), heart rate (HR) and pulse oximetry (SpO₂) were recorded on 1,3,5,7,9 minutes and after every three minutes thereafter.

Average values of SBP, DBP, MAP, HR and SpO₂ of each case was determined and more than twenty five percent increase in either pressure (SBP, DBP or MAP) value from baseline or HR more than 100 bpm was considered as a hemodynamic change. Twenty five percent increase in baseline blood pressure was Considered as intraoperative hypertension while heart rate more than 100 beats per minutes. Average value of each indicator was determined and the data compared and analysed by SPSS-10.

RESULTS

In this study a total of 100 cases were enrolled divided into 50 randomly allocated to LMA and ETT study groups. In the study one hundred cases were studied with minimum age of twenty years and maximum sixty years. The . Data was entered in SPSS version 10.0 for analysis. Mean \pm S.D was calculated for quantitative variables such as age, SBP, DBP, MAP and HR (hemodynamic changes). Frequencies and percentages was presented for qualitative variables such as gender and mallampatti classification. Chi-square test was used to compare the hemodynamic changes in both the groups. A P-value of <0.05 was considered statistically significant.

Correlation coefficient was used to check the interdependence between them.

The study constituted sixty eight male and thirty two female patients, with percentage distribution of 68% and 32% respectively. These are shown in Table-7. As per study objective we calculated the blood pressure of the study patients before and after the use of LMA and ETT insertion. The mean baseline systolic blood pressure in both LMA and ETT study groups was 126.4 ± 14.2 mmHg. After the insertion the mean systolic blood pressure in LMA study group was 135.1 ± 18.0 mmHg and in ETT study group it was 143.7 ± 24.7 mmHg. The mean change in the systolic blood pressure after the insertion of LMA was 8.5 mmHg while in the ETT group it was significantly high with average of 17.3 mmHg. (Table 1).

Similarly we calculated the mean and standard deviations for diastolic blood pressure (DBP) changes in both study groups. The baseline DBP in the LMA and ETT study groups was 74.8 ± 9.5 mmHg each. After the insertion the mean diastolic blood pressure in LMA group was 82.6 ± 11.0 mmHg while in ETT study group it was 90.0 ± 12.6 mmHg. The change was almost double in ETT group. The average change in the mean DBP in LMA group was 7.84 mmHg and in ETT group it was noted to rise to 15.0 mmHg on average. (Table 2).

The mean arterial pressure (MAP) was also observed before and after intervention in both study groups. The mean MAP before insertion of LMA or ETT was 116.6 ± 12.3 each. After insertion the mean \pm SD MAP in LMA group was 116.7 ± 16.5 and mean change of 0.24 from baseline. In the ETT group it was noted as 120.9 ± 16.9 with mean change in MAP of 4.80. Thus proving the mean MAP raised more in the ETT group compared to LMA group. (Table 3)

The pulse oximetry changes in the study groups before and after intervention were calculated. The mean SpO₂ before intervention in both study groups was 98.5 ± 1.5 . After administration of intervention it noted to be 98.3 ± 1.8 in LMA group while 98.2 ± 1.5 in the ETT study group. The mean drop in SpO₂ was slightly greater in LMA study group with -0.60 when compared with ETT -0.26. (Table 4)

The change in the heart rate was also observed. The baseline mean \pm heart rate in both study groups were noted to be 82.3 ± 11.1 . After the insertion the mean \pm SD heart rate in LMA study group was 89.5 ± 12.0 . While in the ETT study group it was noted to be 94.5 ± 18.9 . The change in the mean heart rate was noted almost double in the ETT study group with 12.10 compared to 7.60 in the LMA group. (Table 5)

The overall hemodynamic changes in both study groups were compared. In the LMA study group out of 50 patients in 2 (4.0%) cases hemodynamic change was observed and in 48 (96.0%) there was no hemodynamic change.

Table No.1. Gender distribution (n = 100) - Change in the systolic blood pressure of patients in both study groups

	SBP(baseline) (Mean \pm SD)	SBP after insertion (Mean \pm SD)	Mean change in SBP
Group A LMA(n=50)	126.4 \pm 14.2	135.1 \pm 18.0	8.54
Group B ETT (n=50)	126.4 \pm 14.2	143.7 \pm 24.7	17.30

Table No.2: Change in the diastolic blood pressure of patients in both study groups

	DBP (baseline) (Mean \pm SD)	DBP after insertion (Mean \pm SD)	Mean change in DBP
Group A LMA (n=50)	74.8 \pm 9.5	82.6 \pm 11.0	7.84
Group B ETT (n=50)	74.8 \pm 9.5	90.0 \pm 19.6	15.0

Table No.3: Change in the mean arterial pressure of patients in both study groups

	MAP (baseline) (Mean \pm SD)	MAP after insertion (Mean \pm SD)	Mean change in MAP
Group A LMA (n=50)	116.6 \pm 12.3	116.7 \pm 16.5	0.24
Group B ETT (n=50)	116.6 \pm 12.3	120.9 \pm 16.9	4.80

Table No.4: Pulse oximetry changes in patients in both study groups

	SpO ₂ (baseline) (Mean \pm SD)	SpO ₂ after insertion (Mean \pm SD)	Mean change in SpO ₂
Group A LMA (n=50)	98.5 \pm 1.5	98.3 \pm 1.8	-0.60
Group B ETT (n=50)	98.5 \pm 1.5	98.2 \pm 1.5	-0.26

Table No.5: Change in the heart rate of patients in both study groups

	HR (baseline) (Mean \pm SD)	HR after insertion (Mean \pm SD)	Mean change in HR
Group A LMA (n=50)	82.3 \pm 11.1	89.5 \pm 12.0	7.60
Group B ETT (n=50)	82.3 \pm 11.1	94.5 \pm 18.9	12.10

Similarly in the ETT study group out of 50 patients hemodynamic changes in 10 patients (20.0%) were noted while in 40 (80.0%) cases there was no change. The difference in hemodynamic change in both study

groups was found statistically significant (p-value = 0.02). (Table 6).

Table No.6: Comparison of hemodynamic changes observed in both study groups

	Group A LMA (n=50)	Group B ETT (n=50)	p- value*
Change in hemodynamics	2 (4.0%)	10 (20.0%)	0.02
No change in hemodynamics	48 (96.0%)	40 (80.0%)	

* Fisher's exact test value because of low proportions

DISCUSSION

Hemodynamic changes remain a high concern for both patients and anaesthesiologists during intubation and surgery. Numerous methods, techniques and number of drugs have so far been used for this purpose with variable results.¹¹ Perioperative use of LMA or ETT have variable results with respect to hemodynamic changes and respiratory complications. These results are quite comparable. Many studies shows that perioperative use of LMA has less hemodynamic changes than ETT while some studies shows no significant difference.¹²

In my study the group of patients in which LMA was used has significantly less hemodynamic changes as compared to that group of patients in which ETT was used. In all the patients in which hemodynamic changes were observed along with SBP, DBP, HR also changed but no marked change seen in SpO₂ (less than 90%). This shows that ETT has more effect on cardiovascular physiology than that of LMA insertion during induction, maintenance and emergence of anaesthesia while there is no significant difference regarding changes in respiratory physiology by both the devices of airway management. But transient laryngospasm or bronchospasm cannot be ruled out which by prompt treatment often do not cause oxygen desaturation.¹³ As P value is 0.02 less than 0.05 which denotes that there is a significant difference of hemodynamic changes in both the groups.

Many studies were conducted comparing LMA and ETT regarding the different aspects like hemodynamic changes, incidence of laryngospasm, in various types of surgery, co-morbid conditions, for positive pressure ventilation and resuscitation. In a study done by Idrees A, Khan FA in the Department of Anaesthesia, Aga Khan University Hospital, Karachi it is concluded that the use of LMA during positive pressure ventilation is safe in selected cases¹⁴.

There is an attenuated haemodynamic response to insertion of LMA as compared to endotracheal tube which will be beneficial in certain patients e.g., those with ischemic heart disease, vascular disease and hypertensives¹⁴. It shows that former has priority over the later which is in favour of our study. In another study conducted by Jacob DB, Hirshman CA, it was found that the incidence of cough, secretions and breath

holding was lower with LMA but the difference was not statistically significant. The incidence of laryngospasm was equal in both the groups. The difference in incidence of SpO₂ desaturation and bronchospasm was statistically significant with LMA showing a lower incidence. It was concluded that children with mild URI may be taken up for surgery with a little extra caution and extending the observation of children till the stay in the PACU and LMA definitely offers a suitable alternative to ETT in paediatric patients with URI.¹⁵

This study again goes in our favor. Banzhaf A, Junger A, Röhrig R, Benson M, Schürg R and Hempelmann G conducted a study in the Department of Anesthesiology, Intensive Care, and Pain Therapy, University Hospital, Giessen, Germany and found that anesthesia induction was significantly shorter using LMAs as compared to ETT whereas emergence from anesthesia was not different. They concluded that the clinical relevance of reduced anesthesia induction time using LMA is questionable. The lack of difference in emergence time could be a result of the use of total intravenous anesthesia.¹⁶

In a study conducted by Tanaka A, Isono S, Ishikawa T, Sato J and Nishino T in Graduate School of Medicine, Chiba University, Japan it was concluded that the postoperative laryngeal resistance increases at least in part because of laryngeal swelling in patients with ETT placement, whereas alteration of laryngeal neural control mechanisms has been also indicated. The use of the LMA trade mark has an advantage over ETT placement in order to avoid postoperative laryngeal swelling. The post operative laryngeal swelling may lead to oxygen desaturation and ultimately hemodynamic changes.¹⁷ There was another study conducted by Ferson DZ, Nesbitt JC, Nesbitt K, Wals GL, Putnam JB Jr, Schrupp DS, Johansen MJ, Jones K and Roth JA in the department of Anesthesia, University of Texas M. D. Anderson Cancer Center, Houston, USA on the laryngeal mask airway, a new standard for airway evaluation in thoracic surgery.¹⁸ They concluded that insertion of the LMA causes minimal hemodynamic response. From the time of induction of general anesthesia, insertion of the LMA is quick, simple, and safe and eliminates the need for endotracheal intubation with a single-lumen ETT before double-lumen tube insertion. The LMA, in contrast to the ETT, allows a complete survey of the larynx and trachea. Again this study gives strength to our study.^{19,20}

Patients were selected according to the inclusion criteria and in all patients LMA was inserted or trachea was successfully intubated in first attempt. The anaesthetic technique was very consistent. The whole pre-operative and intra-operative management was done by same anaesthesiologist, thus the anaesthetic technique was pre-fixed and this excluded any bias into this study. Similar conduct of anaesthesia in both study groups selected randomly, total data collected (each parameter) by single anaesthesiologist, wide range of age group and noninvasive simple parameters required, give strength to my study results. Whereas, elective day care surgical procedures of short duration limited number of patients,

gender and ASA group are limitations of my study. In spite of these limitations the results of my study are quite comparable with international studies.

CONCLUSION

Smooth and controlled anaesthesia is goal of anaesthesiologist which can only be achieved by ensuring hemodynamic stability during induction, maintenance and emergence from anaesthesia.

There is a significant difference regarding hemodynamic changes with the use of LMA as compared to ETT during intubation and maintenance of anaesthesia in day care surgical procedures. Thus insertion of LMA is proved to be superior to ETT regarding hemodynamic changes. There were less or no additional measures required to ensure hemodynamic stability i.e. volatile agents, intravenous drugs with the use of former than the later. It is recommended that LMA should be used instead of ETT for intubation and maintenance of anaesthesia in Day care surgery however the risk of respiration is still to be more worked out.

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

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Knowledge and Practices of Burn Injury Cases Amongst Specialized and Non-Specialized Paramedical Staff of Two Tertiary Care Hospitals in Karachi

Tafazzul H. Zaidi and Kiran Mehtab

ABSTRACT

Objectives: (1) To assess frequency of burns injury in general population. (2) To assess the knowledge & practices of paramedical staff on burns cases. (3) To compare the knowledge & management of burn cases among paramedical staff at Jinnah Post Graduate Medical Center And Burns Ward Civil Hospital Karachi

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at two Tertiary Government Hospital that is Jinnah Post Graduate Medical Center and Burns Ward at Civil Hospital Karachi from February 2016 to October 2016.

Materials and Methods: A cross sectional study was conducted on a sample size of 284 paramedics. The sample was taken through Non-probability purposive sampling from the above-named two tertiary government hospital. An informed verbal consent was taken from the paramedics. A pilot study was conducted to assess the validity of questionnaire. A structured questionnaire was distributed which was filled. Data was analyzed using SPSS version 21 with 95% confidence interval, margin of error was taken as 5% and P-value 0.05 was considered significant.

Results: A study was done to check the knowledge and practice about burn injury between the paramedics of JPMC and Burns ward CHK. 81% data was collected from while 19 % from Burns ward CHK. When asked about the use of water after 30 min of burn injury, 70.40% ($p = 0.001$) paramedics of Burns ward said it isn't beneficial while majority 55.20% JPMC paramedics said it is beneficial. Similarly 81.50% ($p = 0.001$) Burns ward CHK paramedics said icing helps burn injury compared to 57.80% of JPMC. Majority of Burns ward CHK paramedics 81.50% ($p = 0.000$) were familiar with the use of silver sulfadiazine cream in deep thickness burn compared to 46.10% JPMC paramedics. Regarding resuscitation in a complicated situation, 88.90% ($p = 0.005$) Burns ward CHK paramedics acquainted compared to 70.40% JPMC paramedics. 79.60% ($p = 0.005$) Burns ward CHK paramedics said that they undergo with the removal of previous cream before applying a new dressing compared to 59.10% JPMC paramedics while regarding the use of analgesic 90.70% ($p = 0.002$) Burns ward CHK paramedics give it compared to 70.40% JPMC paramedics. As far as extra nutrition for burn patient, 88.90% ($p = 0.003$) Burns ward CHK were aware compared to 68.70% JPMC paramedics. When asked about development of bedsores in a burn patient 70.40% ($p = 0.001$) Burns ward CHK paramedics perceived compared to 45.20% JPMC paramedics.

Conclusion: The study concluded, though all the paramedics are given the training of management of burns cases, Civil hospital paramedics are more competitive and have better knowledge and practices than JPMC paramedics.

Key Words: Burns, Injury, Paramedics, Knowledge, Management

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INTRODUCTION

Among all injuries Burn injuries are common. The global frequency of fire-related wounds in 2004 was assessed to be 1.1 per 100,000 populations, with the peak rate in Southeast Asia and the bottommost in the Americas.

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Effective first aid by cooling a burn with cold water offers pain relief, and confines the severity of injury.¹⁻³ In Bangladesh, Colombia, Egypt and Pakistan, 17% of children with burns have a temporary disability and 18% have a permanent disability. In Norway, costs for hospital burn management in 2007 exceeded €10.5 million. The 2009 National Burn Repository reports the most common cause of burns as direct fire/flame (43%) followed by scalds (30%). Burns sustained at home accounted for 65.5% of all burn injuries in the United States that year, and had a mortality rate of 4% overall. Fire and burn deaths are combined because deaths from burns in fires cannot always be distinguished from deaths from smoke poisoning.

Recent experimental studies have found that water at 12–18°C offers the optimal temperature to cool a burn

wound⁴⁻⁵ and that 20 minutes is the optimal duration.⁶⁻⁷ Cooling for 5 or 10 minutes failed to show significant improvement in burn depth.⁸ Cool running water has been revealed to be more effective than wet towels or water spray,⁹ and ice has been shown to be either fruitless or associated with amplified tissue destruction.⁹ Despite this evidence, there remains wide deviation in recommendations available to the public. Bandaging retains air off the burn, moderates pain and guards blistered skin. Don't disrupt blisters, broken blisters are more susceptible to infection.¹⁰ Medical and nursing staff who had participated in EMSB training performed better in the following subjects: mentioning hypothermia as a focus of attention (70% versus 53%, $p=0.085$), correct use of hand size (70% versus 36%, $p=0.001$) and use of the correct hand percentage in the estimation of total body surface area (TBSA, 82% versus 57%, $p=0.015$), suspicion of no airway obstruction in an outdoor trauma (93% versus 63%, $p=0.002$) and referral of functional area burns to a burn center (22% versus 8%, $p=0.04$).¹¹ In addition, educational level was an important factor favorably affecting 'cooling therapy'.¹² The study aimed to explore the present-day training and management of burn first aid midst the paramedic staff of two public Tertiary hospitals of Karachi among which one contains a special burns ward and the other doesn't to the extent to which evidence-based recommendations have been disseminated and then to compare them.

MATERIALS AND METHODS

A cross sectional study was conducted on a sample size of 284 paramedics. The sample was taken through Non-probability purposive sampling from two tertiary government hospital that is Jinnah Post Graduate Medical Center and Burns Ward of Civil Hospital Karachi, within a period of a month from February 2016 to October 2016. An informed verbal consent was taken from the paramedics. A pilot study was conducted to assess the validity of questionnaire. A structured questionnaire was distributed which was filled. Data was analyzed using SPSS version 21 with 95% confidence interval, margin of error was taken as 5% and P-value 0.05 was considered significant.

RESULTS

A survey was conducted to assess the knowledge and practice about burn injury between the paramedics of JPMC and Burns ward of CHK. 81% data was collected from JPMC while 19 % from Burns ward of CHK. When asked about the use of water after 30 minutes of burn injury, 70.40% ($p=0.001$) paramedics at Burn ward said it isn't beneficial while majority 55.20% JPMC paramedics said it is beneficial. Similarly 81.50% ($p=0.001$) Burns ward of CHK paramedics said icing helps burn injury compared to 57.80% of

JPMC. Majority of Burns ward at CHK paramedics 81.50% ($p=0.000$) were familiar with the use of silver sulfadiazine cream in deep thickness burn compared to 46.10% JPMC paramedics. Regarding resuscitation in a complicated situation 88.90% ($p=0.005$) Burns ward of CHK paramedics acquainted compared to 70.40% JPMC paramedics. 79.60% ($p=0.005$) Burns ward of CHK paramedics said that they undergo with the removal of previous cream before applying new dressing compared to 59.10% JPMC paramedics while regarding the use of analgesic 90.70% ($p=0.002$) Burns ward at CHK paramedics give it compared to 70.40% JPMC paramedics. As far as extra nutrition for a burn patient, 88.90% ($p=0.003$) Burns ward at CHK were aware compared to 68.70% JPMC paramedics. When asked about development of bedsores in a burn patient 70.40% ($p=0.001$) Burns ward CHK paramedics perceived compared to 45.20% JPMC paramedics.

COMPARISON OF KNOWLEDGE & PRACTICES ABOUT BURNS BETWEEN JINNAH POST GRADUATE MEDICAL CENTER AND CIVIL HOSPITAL KARACHI

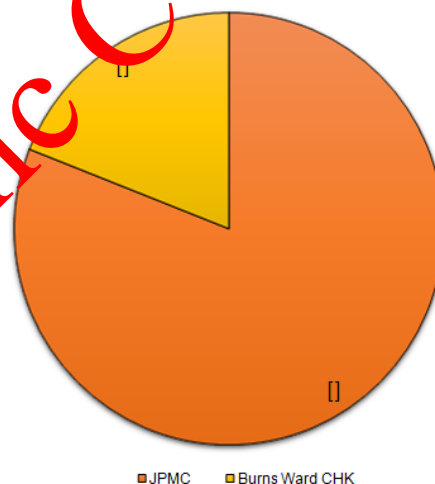


Figure No.1: Comparison of Knowledge & Practices between JPMC & BURNS WARD CHK

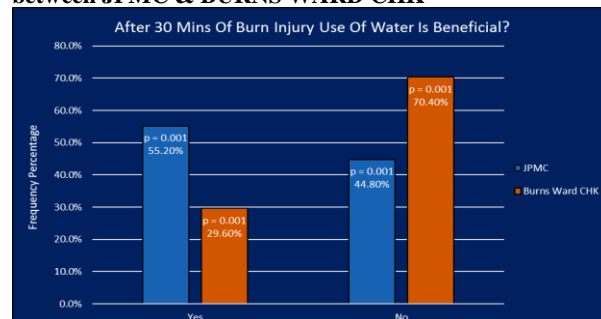


Figure No.2: Percentages of Awareness about use of water after 30 minutes of injury

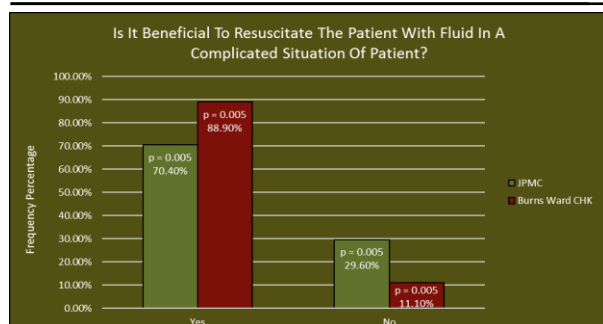


Figure No.3: Percentages of Resuscitating patient in a complicated situation

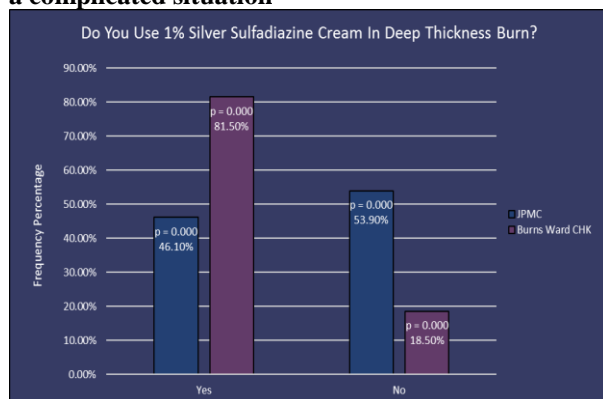


Figure No.4: Percentages of Application of silver sulfadiazine cream in deep thickness burn

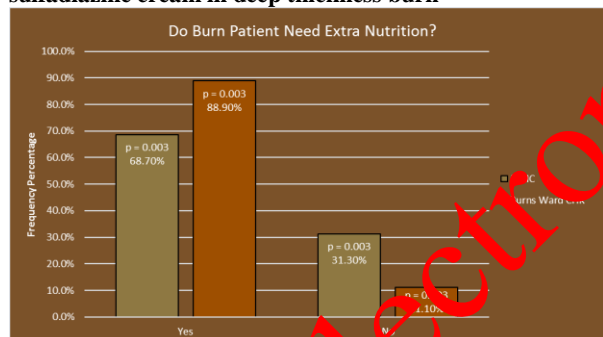


Figure No.5: Percentages of giving extra Nutrition to Burn Patient

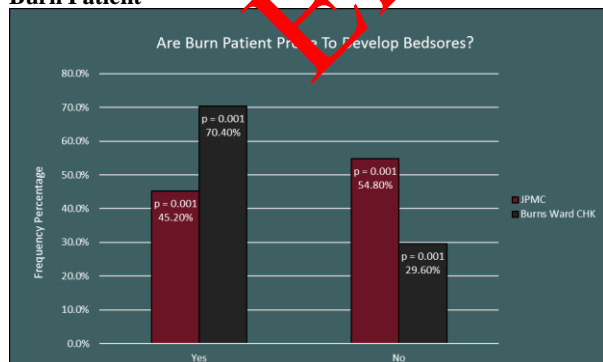


Figure No.6: Percentage of development of bedsores in a burn patient

DISCUSSION

A study has been conducted to compare and assess awareness, knowledge and practices regarding burns

first aid in paramedics of two public sector tertiary care hospitals one having a separate burns unit and other having not. Paramedics in Burns ward CHK are found to have more knowledge regarding burns than paramedic of Jinnah Post Graduate Medical Centre (JPMC) which lacked trained staff to provide special care to burns victims.

It's important that burn victims should be given immediate and correct first aid as mortality rates in burns are as high as 5% globally and when considering Pakistan it reaches up to 29.7% and in addition to that many victims die in their homes or their way to burns specialized care units¹³⁻¹⁶. When paramedics of JPMC were asked that what they do when burn victims come to their setup, they said that they refer them to Burns ward of CHK where these burn patients are provided better care. Although immediate first aid treatment is recommended (predominantly for pain relief) but delays in receiving first aid after which positive effects can still be seen are controversial and reported to be 30 min^{17,18} or in some literature the beneficial effect can still be seen after a delay of 3 hours¹⁹. The study we conducted revealed that majority (70.40%) of Burns ward of CHK paramedics didn't know that applying cool water to the burnt area after 30 min for at least 20 minutes except in chemical burn (in which water is applied till the chemical washes out) and electrical burn (in which water is not applied) would relieve pain and assist in re-epithelialization compared to untreated controls²⁰. Whereas, majority (55.20%) of JPMC paramedics knew the correct answer which was interesting. When asked whether icing is beneficial in burns, (81.50%) paramedics at Burns Ward of CHK said 'YES' which is incorrect because applying ice or even ice cold water is damaging to burns²¹ but surprisingly (42.20%) JPMC paramedics knew the right answer as compared to only (18.50%) of paramedics at Burns Ward of CHK. Nonetheless other questions gave somewhat expected answers. When it was asked whether they give analgesics specifically before changing dressing, (90.70%) of paramedics at Burns Ward of CHK gave the appropriate answer that is its necessary because burns injuries are very painful and its beneficial to give analgesia to subside pain before changing dressing²² but only (70.40%) of JPMC paramedics were aware of the importance of analgesics in burn wounds. Similarly when asked about resuscitating burn patients in critical condition almost everybody (88.9%) at Burns Ward of CHK said it is vital to resuscitate the patients as shock and hypovolemia are major complications of burn injuries rising mortality²³ but in comparison to that lesser number of JPMC paramedics i.e. (70.40%) gave positive response. Moving forward 81.50% of Paramedics at Burns Ward of CHK said that for deep thickness burns Silver Sulphadiazine cream is used by them because it not only helps to prevent wound

infections but also treats them and kills bacteria. Hence by applying this complication of various infections can be prevented.^{24,25} but sadly just 46.10% of JPMC paramedics were able to reply appropriately, which again gave us another clue that paramedics of burns care units not only have better knowledge but their practices are also superior than the hospitals where there are no particular burns unit. Similarly when it was asked if they remove previously applied cream when they change dressing, 79.60% Burns ward CHK gave opinion that it is paramount to remove previously applied cream. Infact it is recommended to assess the wound and change the dressing after every 24 hours (twice in 24 hours if possible)²⁶ while only 59.10% of JPMC paramedics replied that it is important to wash out previously applied ointments and creams. Burns patients are much liable to get dehydrated especially when burns surface area is large because the skin, which acts as a protective barrier to prevent loss of water from body surface, is extensively damaged and gets incapable to prevent water loss. Therefore these burn victims require extra nourishment²⁷ regarding this when Burn ward of CHK paramedics were asked whether burns patient require extra nourishment 88.90% gave a positive response contrary to 68.70% of JPMC paramedics.

Lastly, when coming to complications of burn injuries a question arose if bedsores could be one of the complications faced by burns victims, according to 70.40% Burns ward of CHK paramedics burn patients are more prone to develop bedsores because of their injuries and are prescribed bed rest and so it is crucial to frequently change their positions to reduce the development of bedsores. Typical protocols call for a patient to be turned every 2 hours²⁸. According to Kosiak repositioning of patient needs to occur more frequently than routinely used 2 hours²⁹ but sadly, only 45.20% of JPMC paramedics know its significance in burns patients.

Consequently, we came to know that paramedics of tertiary care hospital having burns unit have more advanced knowledge and can give better care to burns patient than the hospital with no burns unit, though the knowledge and practices of later regarding burns care was not limited as was expected. The reason behind this is that Burns Ward of CHK paramedics are frequently exposed to burn victims and are also trained accordingly and thus give better first aid care. On the other hand JPMC too has trained paramedical staff they do have knowledge about the first aid care but since are not exposed to burn victims as frequently their first aid knowledge and hence practices lacks behind the former ones. However both sectors should run training programs to train their paramedical staff to further enhance their burns first aid training and to provide good care to burn victims. Moreover programs and seminars should be conducted regarding prevention of

burn injuries and what first aid measures should be taken at home to avoid complications and further distress.

CONCLUSION

The study concluded, though all the paramedics are given the training of management of burns cases, Civil hospital paramedics are more competitive and have better knowledge and practices than JPMC paramedics.

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

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Fast Tract Extubation in Paediatric Cardiac Surgery: National Institute of Cardiovascular Diseases (NICVD) Experience Karachi

Amin Muhammad Khuwaja¹, Aftab Ahmed Khatri¹ and Iqbal Hussain²

ABSTRACT

Objective: There are limited cardiac centers dealing with paediatric cardiac surgery with enormous patient burden resulting long waiting lists due to manpower as well logistic issue. Therefore the concept of fast tracking is very attractive to overcome logistic issue. We describe our experience of postoperative fast-track extubation of children undergoing cardiac surgery.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at the National Institute of Cardiovascular Diseases, Karachi from July 2015 to December 2015.

Materials and Methods: Total 244 pediatric patients of less than 16 years of age were underwent definitive as well as palliative surgical intervention for congenital heart defects at National institute of cardiovascular diseases Karachi. Both male and female patients aged less than 15 years undergoing elective surgical procedures for Congenital heart defects or acquired heart effects on cardiopulmonary bypass (CAB) or off pump were included in the study. Patients with missing data like extubation time and those were planned for overnight ventilation due to preoperative diagnosis or delayed due to surgical causes like mediastinal bleed were excluded from study.

Results: Among these patients fast tract extubation was observed in 170 (70%) and 74 (30%) patients were extubated beyond 6 hours. While patient operated with the support of heart lung machine had higher number of delayed extubation rate that is 58 (78.%) than off pump patients 16 (22%) $p < .05$. Extubation failure was observed in 9 patients with 5 patient who were extubated on table (fast tract group) and four patients extubated beyond six hours (delayed extubation group).

Conclusion: Fast tract extubation is successful in majority of patients operated for congenital heart defects. Early extubation is safe and is associated with reduction in length of ICU stay and better PICU bed management without any effects on mortality or morbidity of patients after paediatric cardiac surgery. It requires only desire for proactive management and team work without any specific protocol or algorithm to achieve early extubation.

Key Words: Paediatric Cardiac Surgery, Fast Tract Extubation, Congenital Heart Defects, Paediatrics, Fast Tract Cardiac Surgery.

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INTRODUCTION

Fast tract cardiac surgery has a broader scope with multidisciplinary involvement to address perioperative course to minimize over all duration of stay in hospital and return to regular social life at most earliest. Thus fast tracking in cardiac surgery involve preoperative preparation of patients as outpatient, fast tract extubation, mobilization and hospital discharge in an effort to reduce costs and perioperative morbidity¹

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both physical and psychological. Despite a number of articles published in recent years advocating various weaning strategies or algorithms, appropriate rapidity of weaning from mechanical ventilation and timing of extubation is a topic of debate in pediatric cardiac critical care. Early return of child to home made the idea of fast-tracking attractive for the medical team involved in the care of children as well as for parents. Tracheal extubation is a first step towards fast tract protocol in pediatric cardiac surgery. Generally, the term 'early extubation' is used when the endotracheal tube is removed within six hours after the surgery or ultrafast tract when patient extubated in operation room^{2,3}. Concept of early extubation after pediatric cardiac surgery is not a new one. It was first published by Barash in 1980 involving 197 pediatric cardiac patients with age less than three years including neonates with 61% were successfully extubated in the operation room⁴. Early extubation has many proven

advantages like avoidance of accidental extubation, pulmonary hypertensive crisis from endotracheal suctioning associated irritation, laryngotracheal trauma, ventilator associated pneumonia, mucous blocking of endotracheal tube, and lung collapse, reduced requirements of sedatives, early mobilization, earlier ICU discharge, minimizing overall length of hospital stay, reduced costs (ventilator associated, as well as length of ICU/hospital stay) and reduced parental stress by establishing verbal communication between the child and parents⁵. Delayed extubation is most distressing experiences for the parents⁶ as most common question asked by parents regarding extubation of child as they believe it is a sign of successful intervention.

In our study we had retrospective analysis our six month record to see the trend of tracheal extubation in our pediatric population underwent palliative as well as definitive intervention for cardiac defects.

MATERIALS AND METHODS

We had performed an Observational / descriptive study of record from July 2015 to December 2015. Total 244 pediatric patients of less than 16 years of age were underwent definitive as well as palliative surgical intervention for congenital heart defects at National Institute of Cardiovascular Diseases Karachi tertiary care hospital dedicated to cardiac patients only. Both male and female patients aged less than 15 years undergoing elective surgical procedures for Congenital heart defects or acquired heart effects on cardiopulmonary bypass (CPB) or off pump were included in the study. Patients with missing data like extubation time and those who were planned for overnight ventilation due to preoperative diagnosis or delayed due to surgical causes like mediastinal bleed were excluded from study.

Perioperative course: All the patients operated for intra cardiac defect requiring cardiopulmonary bypass shifted to ICU on mechanical ventilation planned for fast tract extubation; extubation within six hours or delayed either due to failure to achieve extubation criteria or planned over night ventilation based on team decision. While rest of patients always planned for ultrafast extubation; on table extubation. Extubation criteria we are following is mentioned in table 2. All patients were premedicated with syrup chloral hydrate. In the operation room induction was done with injection dromicum .1mg/kg, injection morphine .1mg/kg, atracurium .5mg/kg and propofol 2mg/kg. Maintenance was done with Inhalational sevoflurane 2.5% and morphine infusion or nalbuphin. On cardiopulmonary bypass maintenance was done with isoflurane 1.15%. American Society of Anesthesiologists (ASA) recommended monitoring was (pulse rate, electrocardiogram, noninvasive and invasive blood pressure, $SO_2\%$, $ETCO_2$, oesophageal temperature (on

pump patients) and urine output) conducted in all patients specially those operated on cardiopulmonary bypass. Arterial blood gases with Hemoglobin, electrolytes (baseline, after CPB and preextubation), blood sugar and activated clotting time (ACT) {haptinised} were also monitored. Neostigmine (40 μ g/kg) and pyroglycopyrolate (10 μ g/kg) was administered as a reversal after full filling extubation criteria.

RESULTS

In our final analysis we had included 244 patients. There were 130 male and 114 females. Demographic characters are showing table 1. There was fast tract extubation was observed in 170 (70%) patients with on table extubation of 52 (30%) of fast tract group and delayed extubation 74 (30%).

Table No.1: Demographic Variable of patients N=244

Variable	No. Patients	Percentage
Gender		
• Male	130	53.27%
• Female	114	46.72%
Age		
• Neonate	15	6.1%
• Infant	39	15.9%
• Children	190	77.86%
Diagnosis		
• Tetralogy Of Fallot (TOF)	84	34.42%
• Ventricular Septal Defect (VSD)	22	9.01%
• Ventricular Septal Defect (VSD) + Pulmonary Hypertension (PAH)	54	22.13%
• Atrial Septal Defect (ASD)	24	9.83%
• Miscellaneous	60	24.59%
Pump		
• On Pump	148	60.65%
• Off pump	96	39.34%
Palliative intervention		
• Pulmonary Artery Banding (PA Band)	33	13.52%
• Modified Ballock Tussing Shunt (MBT)	12	4.91%
• Glenn	9	
Off pump definitive		
• Patent Ductus Arteriosus (PDA) ligation	13	3.68%
• Miscelanous	7	2.86%

Extubation failure was observed in 9(4%) patients, reintubated within 24 hours of extubation with 5 patients from fast tract group with on table extubation and 4 patients from delayed extubation group. However patients reintubated for surgical reason like tamponade or bleed were considered in groups of fast tract or delayed extubation as per their first extubation time. Association of extubation time with other variable are shown in table 3. Out of 244 patients 19 (8%) patients were expired. Apparently it looks very high mortality but unfortunately we had very high risk patient

population presented with advance stage of morbidity as well as in malnourished status. As shown in our mortality outcome with 5(13.5%) mortality in ultrafast tract extubated child four operated for PA band and one after MBT shunt while 14(19.7%) mortality of delayed extubation group among these also included those failed to extubate. These include two cases of senning for dTAGA, four cases of TOF, two cases of VSD with severe pulmonary hypertension and one case of total anomalous pulmonary venous connection (mixed type) with pulmonary hypertension.

Table No.2: Extubation criteria followed in our study

General Assessment	Neurological Status	Acceptable Respiratory Mechanics	Acceptable Arterial Blood Gases (Abgs) On 5cm Or Less Of Cpap Or Psv
Awake without stimulation	Awake without stimulation	Negative inspiratory force >25cm H ₂ O	. PaO ₂ >70 torr on FIO ₂ of 0.5 or less
Chest tube drainage<50 mL/h	Moving limbs	Tidal volume >5 mL/kg	PCO ₂ <48 torr
Adequate reversal of neuromuscular blockade	Obedient command	Vital capacity 10-15 mL/kg	pH 7.32-7.45
Core temperature>35.5 °C		Spontaneous respiratory rate as per desired based on age	
There is consensus between surgical and critical care team for extubation		Air leak	

Table No.3: Relation of different variable with extubation pattern

Variable	Fast tract extubation	Delayed extubation
Age(n=244)		
• Neonate	10(67%)	5(37%)
• Infant	32(82%)	7(18%)
• Children	120(68%)	61(32%)
Pump (n=244)		
• On Pump	90(62%)	58(38%)
• Off pump	90(84.4%)	16(15.6%)
Intonotrope Support		
• Single Intonotrope (n=135)	92(68%)	43(32%)
• Double Intonotrope (n=12)	3(25%)	9(75%)
Tetralogy Of Fallot (TOF) (n=73)	42(57.5%)	31(42.5%)
Ventricular Septal Defect (closure) (n=35)	21(60%)	14(40%)
Atrial Septal Defect (closure) (n=23)	21(91.3%)	2(8.7%)

DISCUSSION

Desire to reduce the cost of cardiac surgery without compromising the patient safety resulted in the development of fast tract protocol in adult cardiac surgery. However there are variable personnel and group policies regarding the application of fast tract protocol in patients with congenital heart defects. While many centers feel comfortable with fast-tracking concept others still routinely follow time based protocol with continue invasive ventilation and deep sedation postoperatively for a day or two in the intensive care depending on the type of intervention and risk factors. There have been many reports and articles that evaluate the practice of fast tract extubation after pediatric cardiac surgery. Most reports suggesting early extubation can safely be achieved, mostly having carefully selected patient population. Most of these publications include carefully selected patients with uncomplicated repairs and excluded young patients requiring complex repair or deep hypothermic circulatory arrest^{7,8,9}. Prospective study conducted by Mohammad Irfan Akhtar¹ on fast tract extubation and reported Bleeding, low cardiac output, respiratory complication, while another study conducted by Kloth et al.¹⁰ and reported risk factors on Younger age, low body weight.

Even though more often patients selected for early extubation based on institutional inclusion/exclusion criteria, nevertheless surgeon and anesthesiologist at the end of the procedure made the final decision to extubate in the OR or select for early extubation. Successful weaning from mechanical ventilation requires the presence of satisfactory cardiovascular function, satisfactory ventilatory reserves and optimal pulmonary mechanics. Proper timing of tracheal extubation in these children depends on clinical evaluation of the patient's ability to sustain spontaneous breathing without eliciting significant sympathetic response. Prior to tracheal extubation the patient should be assessed to rule out presence of low cardiac output syndrome using clinical markers such as trends in vital signs and physical examination, derangement of blood acid base balance, serum lactate levels, and invasive monitoring of arterial blood and central venous pressures along with AV difference. The decision of not to proceed with fast tract extubation is often based on multiple factors like pulmonary hypertension, prolong pump time, high inotrop support at the end of procedure and consequently it can be difficult to point out the exact reason(s) of delayed extubation in a retrospective manner. However, factors found to independently predict failure of early extubation, such as long CPB time, interact with many of the criteria used to evaluate the potential for safe extubation (e.g., myocardial function, hemostasis, airway edema). In our study we have patients with pulmonary artery hypertension those excluded by fast tract extubation because of anesthetic preference. Nevertheless they were also extubated early again by anesthetic team headed by different in charge. Currently there are reports favoring even on table extubation of patients with pulmonary hypertension¹¹. However in our study none of the patient operated on pump underwent ultra fast tract extubation, while this is our routine practice for off pump patient on table extubation. However patients underwent fast tract protocol or those extubated after 6 hours; differences in morbidity and mortality are difficult to predict¹² same as reintubation rate¹³. William T. Mahle et al¹⁴ reported a multicentre review of fast tract extubation in patient underwent total correction for Tetralogy Of Fallot and Fontan circulation, they found 31.5% patients of Tetralogy Of Fallot and 69.8% of Fontan achieve successful early extubation with decrease length of hospital stay. While in our study we have observed successful fast tract extubation after total correction of TOF in 42(57.5%) out of 73. Though there was no complete total cavopulmonary connection was done but nine patients underwent bidirectional Glenn shunt with all patient were extubated within six hours of shifting to PICU. Same trend was observed after VSD closure with 21(60%) out of 35 patient achieved extubation in 6 hours. Patients with atrial septal defect closure have

fast tract extubation in 22(91.3%) out of 24 patients while remaining two patients had sinus venous defect with severe PAH and other had single atrium with severe mitral regurgitation underwent atrial septation and mitral valve repair. While patient with delayed extubation has strong association of extubation failure^{15,16}. Same trend was observed in our study with 4 patients from delayed extubation group and 5 from fast tract group with four patients of PA banding with severe pulmonary artery hypertension and one underwent MBT shunt for pulmonary atresia developed pulmonary flooding requiring reintubation.

CONCLUSION

This study found that we do not use any specific protocol for fast tract extubation, it is our determination and team work that make us possible to achieve fast tract extubation and desired operative list management. Nevertheless still there is a lot of to do to achieve more to improve patient care and patient number management.

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

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The Q and QTc Study (Quinine and QTc Interval Prolongation Study)

Bacha Amin Khan, Wasil Khan, Amin Ullah and Muhammad Rehman

ABSTRACT

Objective: The objective of this study is to determine the effect of Quinine on QTc interval.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at the Medicine Department of Saidu Teaching Hospital Saidusharif Swat from 1st October 2015 to 1st October 2016.

Materials and Methods: A total of 100 patients both male and female who needed Quinine for febrile illness were included Pretreatment ECG and post treatment ECG (on the last day of Quinine treatment) was recorded. Patients were divided in three groups on the basis of pretreatment ECG

Group I: (50%) pretreatment ECG QTc interval was 361 to 400msec (mean) 380 msec.

Group II: (30%) pretreatment QTC interval 401 to 450msec with mean 425.5msec.

Group III: (20%) pretreatment QTC interval 451 to 485msec with mean 468msec.

Patients were given Quinine according to the protocol and post treatment QTc interval was recorded.

Results: Values were analyzed on student T- Test with a P value of 0.006.

Conclusion: It is concluded that Quinine increases the QTc interval to a significant level.

Key Words: QTc- corrected QT interval, t-test Student t – test

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INTRODUCTION

Malaria is an important cause of morbidity and mortality. Affecting more than 1 billion people and causing 1 to 3 million deaths each year¹. In our country malaria behaves like epidemic because of unstable transmission². Majority of the complications are due to plasmodium falciparum³. Major problem in the management of malaria is chloroquine resistance. Resistant malaria can be managed with alternative drugs.⁵

Malaria with complications need parenteral Quinine, which inhibits the polymerization of the toxic heme molecule⁶. Falciparum malaria can cause multi organ dysfunction due to cytokines production and impairment of microcirculation⁷. Complications can occur if there is high parasite load (> 5%)⁸.

Although Quinine is effective for severe malaria but has a number of side effects, like prolongation of the QTc interval, which is a risk for arrhythmias. The QTc is calculated according to the Bazett's correction i.e. $QTc = QT / \sqrt{R-R}$ msec⁹.

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MATERIALS AND METHODS

This study was carried out in the Medicine Department of Saidu Teaching Hospital Saidu sharif Swat over a period of 1 year from 1st October 2015 to 1st October 2016. 100 Patients were included in the study. 70% were males and 30% were females. The age was ranging from 13 to 65 years.

Fever was the consistent clinical presentation (100%). Other symptoms were found in different combination like, headache (90%), nausea and vomiting (80%), abdominal pain (30%), Jaundice (20%), loose motions (20%) and confusion (10%). The symptoms, signs and other data were recorded on proforma. In 50% patients malarial parasites were isolated while in 50% patients malarial parasites could not be isolated. Patients were started on Quinine according to the protocol.

Pretreatment ECG was recorded for QTc interval. Patients were divided in three groups on the basis of pretreatment ECG Group I (50%) pretreatment ECG QTc interval was 361 to 400msec (mean) 380 msec.

Group II (30%) pretreatment QTC interval 401 to 450msec with mean 425.5msec. Group III (20%) pretreatment QTC interval 451 to 485msec with mean 468msec.

Post treatment (last day of Quinine treatment) QTc was recorded again and then the results were compiled and tested on student t-test.

RESULTS

The results are shown in table 1 and table 2.

Table No.1: Detail comparison of pre-treatment and post treatment of QTc interval in patients.

Group	No. of Patients	Pre-treatment QTc interval			Post treatment of QTc Interval		
		Min	Max	Mean	Min	Max	Mean
I	50	361	400	380.5	413	450	431.5
II	30	401	450	425.5	451	485	468
III	20	451	485	468	501	560	530.5
Total	100						

Table No.2: Mean comparison of pre-treatment and post treatment of QTc interval in patients.

Group	No. of patients	Pre-Treatment QTc mean	Post-Treatment QTc mean
I	50	380.5	431.5
II	30	425.5	468
III	20	468	530.5

T-Test (P. value)=	0.00609659
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DISCUSSION

Malaria is common and sometimes presents with different manifestations¹⁰⁻¹⁴. Because of the development of resistance¹⁵⁻¹⁷ alternative drugs are needed for the management. Falciparum malaria can be fatal especially in non-endemic areas¹⁸. For uncomplicated cases artemether and lumefantrine combination can be used¹⁹ although it is expensive for developing countries²⁰. Doxycycline can be combined with antimalarial drugs²¹. Quinine in its parenteral form is used for severe malaria, although monotherapy is responsible for resistance²². Up to 5% resistance has been reported for Quinine in case of falciparum malaria, which has an annual incidence of 33%^{24,25} the resistance has developed because of helicasas as a result of adaptation to the stresses of existence²⁶ some studies have shown better results with artesunate regarding parasite clearance and safety.^{27,28}

Quinine therapy needs closed monitoring especially if loading doses are considered for the management of patients²⁹⁻³¹. The QT interval which was first described by wolff in 1950.³² Can be either prolonged congenitally (330, or because of the underlying heart diseases³⁴ or because of the drugs especially Quinine and Quinidine. Prolonged QTC interval has been considered increased risk factor for cardiovascular mortality³⁵. The, quinidine syncope, was described in 1964³⁶. Both quinine and quinidine prolong the QTc interval.

However simple prolongation does not make the patient prone to torsade de pointes³⁷. QTc is considered

prolonged if it is > 440msec in males and more than 450msec in females³⁸. Although there is no rigid consensus on the prolongation limits but QTc of more than 500msec is a risk for arrhythmia³⁹. In our study the range of pretreatment QTc was 380-388 and post treatment QTc was 431-530msec with mean QTc, variable for different groups. Although the prolongation in QTc interval is significant statistically with a P-value of 0.006 but only 20%

patients had gone to QTc interval of > 500msec in the post treatment phase. None of the patients developed arrhythmias. May be because of careful selection of patients, close monitoring and addressing the supportive care.

In view of this study we suggest that early diagnosis by optimal malarial test and microscopy^{40,41} and proper management will decrease mortality and morbidity and avoid emergence of resistance strains especially, if WHO guidelines are adopted⁴² which recommends 2 yearly monitoring for drug resistant strains.

Malaria will remain a major health problem until effective vaccines are developed^{43,44} and effective preventive measures are taken⁴⁵.

CONCLUSION

Quinine prolong the QTc interval but only 20% go to the interval of > 500msec. Even in this group arrhythmias were not documented.

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

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Placebo- Controlled Trial of Pharmaceutical Optimized Captopril 60mg (F-9) in Patients with Essential Hypertension for Efficacy & Biochemical Evaluation

Asnad¹, Mohammad Sadiq², Iftikhar Ahmad Chaudary⁴ and Asma Qayume³

ABSTRACT

Objective: The aim of study, to evaluate the efficacy of optimized Captopril 60 mg (F-9) with compare to placebo control for eight weeks and also analyze basic metabolism parameter such as Total Cholesterol, LDL-Cholesterol, HDL-Cholesterol, Triglycerides and Fasting blood glucose for test and control patients

Study Design: Double-blind, randomized placebo-controlled trial

Place and Duration of Study: This study was conducted at the Department of Biochemistry, University of Karachi from September 2011 to January 2012.

Materials and Methods: Patients were selected from different area of orange town and surrounding area, such as pirabad, mangopir, Pathan colony, impear colony, mastanchali, Metrovell and site area. Total eighty (80) patients were analyzed for Total Cholesterol (mg/dl), HDL-Cholesterol (mg/dl), LDL-Cholesterol (mg/dl), Triglycerides (mg/dl) and for fasting glucose level. The analysis was performed by Micro Lab 300 and kits were used of Merck. Other biochemical parameters (Liver function test, Urea, Complete blood counting, uric acid, electrolytes and protein profile) were used for safety purpose. All the parameter were studied at initial phase for test and control and after completion of trial such as eight weeks (8 weeks), parameters were studied again for test and control. Primary blood pressure such as Systolic BP - 24 hours (mmHg) and Diastolic BP - 24 hours (mmHg) was analyzed by manual method patients. After eight weeks (8 weeks) trial, blood pressure was determined by same manual method for test and placebo control patients.

Results: Initial result systolic blood for test patient was 149.5 ± 11.2 mmHg and for placebo control was 149.2 ± 10.5 mmHg. After eight week trial of optimized Captopril 60 mg (F-9), systolic blood was reduced (140.1 ± 11.4 mmHg) as compared to placebo control such as (148.0 ± 11.3 mmHg). Like systolic blood pressure, initial diastolic blood pressure for test patient was (97.7 ± 7.2 mmHg) and for placebo was (95.3 ± 7.7 mmHg) but after eight week trial of optimized Captopril 60 mg (F-9), diastolic blood pressure was reduced in test patients (86.6 ± 5.4 mmHg) as compared to placebo control such as (93.9 ± 7.0 mmHg).

Conclusion: The optimized Captopril 60 mg (F-9) is an excellent option for the treatment of hypertension with high antihypertensive efficacy, good tolerability and no biochemical effects. It is due to low dose drug and also no effect of excipient of formulation of F-9.

Key Words: Hypertension, Captopril, Biochemical effects

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INTRODUCTION

The treatment of hypertension is an accurate blood pressure and high blood pressure is the risk of morbidity and mortality cardiovascular so it is essential to treat it

properly. The additional benefits regarding both protection of organs and cardiovascular mortality to control blood pressure lower than 130/85 mmHg according Guidelines of World Health Organization for the treatment of hypertension while the previous limit was 140/90 mmHg.¹⁻⁶

Blood pressure is also associated with the progression of renal disease.⁷ for the limiting renal-disease progression antihypertensive agents; inhibitors of angiotensin-converting enzyme (ACE) are regarded as particularly effective. The patients with macro-albuminuria in renal diseases ACE inhibitors significantly effective⁷. The beneficial effect also found in microalbuminuria patients.^{8,9} It is reasonable to investigate whether use of ACE inhibitors in patients with normoalbuminuria may also be beneficial. ACE

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inhibitors can slow the relentless decline of renal function in patients. However, previous trials of ACE inhibitors in normoalbuminuric patients are few,¹⁰ and have either lacked power or have not been designed as randomized and controlled.^{10, 11} For congestive heart failure and treatment of hypertension Captopril, (1-[(2S)-3-mercapto-2-methyl propionyl]-l-proline), an angiotensin-converting enzyme inhibitor is used.¹²

This drug is water soluble and 1.7 h is elimination half-life after an oral dose.¹³ pH 1.2 is stable pH and degradation reaction of drug occurred with increasing pH.¹⁴ The controlled release dosage form of the drug is beneficial.^{15,16} The hydrodynamically balanced system in which to develop floating systems to control drug release. Various attempts have been made.^{17, 18} For the managing children with heart failure Captopril is established pharmacological treatment. With acquired heart disease in adult drug efficacy and safety is founded data from studies, these drugs used.^{19, 20}

Clinicians used without any doubt regarding efficacy and utility of captopril for the treatment of children with heart failure, also regarding toxicity and optimal dosing schedules.^{19,20} Formulation of the dosage form is also important factor regarding toxicity and optimal dosing schedules.²¹ Studies showed that angiotensin receptor blockers like olmesartan medoxomil have and antihypertensive efficacy and superior tolerability.²² Another study showed that for the effectiveness and tolerance in patient with hypertension, olmesartan, medoxomil and amlodipine besylate is used.²³ Amlodipine besylate alone as indicated with benazepril hydrochloride with valsartan and with perindopril showed best result in reduction of blood pressure in combination form.^{24, 25}

The aim of study, to evaluate the efficacy of optimized Captopril 60 mg (F-9) with compare to placebo control for eight weeks and also analyze basic metabolism parameter such as Total Cholesterol, LDL-Cholesterol, HDL-Cholesterol, Triglycerides and Fasting blood glucose for test and control patients.

MATERIALS AND METHODS

In this study, Patient was received randomized Captopril 60mg (F-9) for eight weeks and control received placebo for eight weeks so it was multicenter, comparative study. In September 2011 to January 2012, this study was completed in the department of biochemistry, University of Karachi. Patients were selected from different area of orange town and surrounding area, such as Pirabad, Mangopir, Pathan colony, Impear colony, Mastanchali, Metrovell and site area. Total eighty (80) patients were analyzed for Total Cholesterol (mg/dl), HDL-Cholesterol (mg/dl), LDL-Cholesterol (mg/dl), Triglycerides (mg/dl) and for fasting glucose level. The analysis was performed by Micro Labe 300 and kits were used of Merck. Other biochemical parameters (Liver function test, Urea,

Complete blood counting, uric acid, electrolytes and protein profile) were used for safety purpose. All the parameters were studied at initial phase for test and control and after completion of trial such as eight weeks (8 weeks), parameters were studied again for test and control. Initial characteristics of patients were determined such as age, body weight, BMI for both test and control patients. Like, the biochemical parameters of the patients, primary blood pressure such as Systolic BP - 24 hours (mmHg) and Diastolic BP - 24 hours (mmHg) was analyzed by manual method for both test and control patients. After eight weeks (8 weeks) trial, blood pressure was determined by same manual method for test and placebo control patients.

RESULTS

Initial result systolic blood for test patient was 149.9 ± 11.2 mmHg and for placebo control was 149.2 ± 10.5 mmHg. After eight week trial of optimized Captopril 60mg (F-9), systolic blood was reduced (140.1 ± 11.4 mmHg) as compared to placebo control such as (148.9 ± 11.3 mmHg). Like systolic blood pressure, initial diastolic blood pressure for test patient was (97.7 ± 7.2 mmHg) and for placebo was (95.3 ± 7.7 mmHg) but after eight week trial of optimized Captopril 60mg (F-9), diastolic blood pressure was reduced in test patients (86.6 ± 5.4 mmHg) as compared to placebo control such as (93.9 ± 7.9 mmHg). All the biochemical parameters were not changed for test patient after eight week trial such as (Total Cholesterol 198.2 ± 42.3 (mg/dl), HDL-Cholesterol 53.8 ± 13.2 mg/dl, LDL-Cholesterol 113.6 ± 32.9 mg/dl, Triglycerides 137.8 ± 88.6 (mg/dl) and for fasting glucose 97.4 ± 11.3 mg/dl level) as compare to placebo such as (Total Cholesterol 192.3 ± 33.5 (mg/dl), HDL-Cholesterol 46.6 ± 11.3 mg/dl, LDL-Cholesterol 118.4 ± 25.6 mg/dl, Triglycerides 145.7 ± 88.6 (mg/dl) and for fasting glucose 96.8 ± 8.8 (mg/dl) level. The optimized product Captopril 60mg (F-9) is showed no biochemical effects regarding lipid metabolism and glucose metabolism. It is due to low dose drug and also no effect of excipient of formulation of F-9.

Table No.1: Baseline characteristics

	Captopril 60mg (F-9) (n=60)	Placebo (n=20)
Age (years)	50.2 ± 9.5	51.1 ± 9.6
Male / Female (%)	45.4 / 54.6	37.0 / 63.0
Body weight (Kg)	69.9 ± 13.5	70.2 ± 12.2
BMI (kg/m ²)	27.4 ± 3.6	27.8 ± 3.4
SBP sitting (mmHg)	149.9 ± 11.2	149.2 ± 10.5
DBP sitting (mmHg)	97.7 ± 7.2	95.3 ± 7.7

Table No.2: Ambulatory blood pressure monitoring. Mean values of blood pressure

	Captopril 60mg (F-9) (n=60)	Placebo (n=20)	P-value
Systolic BP - 24 hours (mmHg)			
Baseline	149.9 ± 11.2	149.2 ± 10.5	NS
Week 8	140.1 ± 11.4	148.9 ± 11.3	0.0037
Diastolic BP - 24 hours (mmHg)			
Baseline	97.7 ± 7.2	95.3 ± 7.7	NS
Week 8	86.6 ± 5.4	93.9 ± 7.9	0.0001

NS: Non significant, p: probability

Table No.3: Baseline Biochemical characteristics

	Captopril 60mg (F-9)(n=60)	Placebo (n=20)
Fasting Blood Glucose(mg/dl)		
Baseline	96.3 ± 11.2	97.3 ± 9.3
Week 8	97.4 ± 11.3	96.8 ± 8.8
Total Cholesterol (mg/dl)		
Baseline	196.8 ± 42.4	193.8 ± 34.3
Week 8	198.2 ± 42.3	192.3 ± 33.5
LDL - Cholesterol (mg\dl)		
Baseline	113.5 ± 32.8	117.8 ± 23.7
Week 8	113.6 ± 32.9	118.4 ± 25.6
HDL - Cholesterol (mg\dl)		
Baseline	52.9 ± 12.8	46.8 ± 11.4
Week 8	53.8 ± 13.2	46.6 ± 11.3
Triglycerides (mg\dl)		
Baseline	137.2 ± 89.3	144.3 ± 88.7
Week 8	137.8 ± 88.6	145.7 ± 88.6

DISCUSSION

For stroke, hypertension is a major risk factor. Brain tissue loss as a consequence of stroke has been associated with cognitive impairment, in relation to other stroke-specific factors, these strokes may be isolated or strategically located ones (e.g. in the thalamus, angular gyrus, frontal white matter).²⁶ Also, because hypertension is not a single factor but exist with other metabolic risks factors, such as (inflammation of brain, abnormal insulin signaling in the brain) and existing other metabolic syndrome and underlie (cognitive impairment or dementia) in persons with hypertension.^{27,28} Patients were selected from different area of orange town and surrounding area, such as Pirabad, Mangopir, Pathan colony, Impair colony, Mastanchali, Metrovell and site area. Total eighty (80) patients were analyzed for Total Cholesterol (mg/dl), HDL-Cholesterol (mg/dl), LDL-Cholesterol (mg/dl), Triglycerides (mg\dl) and for fasting glucose level. The analysis was performed by Micro Labe 300 and kits were used of Merck. Other biochemical parameters (Liver function test, Urea, Complete blood counting, uric acid, electrolytes and protein profile) were used for safety purpose. All the parameters were

studied at initial phase for test and control and after completion of trial such as eight weeks (8 weeks), parameters were studied again for test and control. Initial characteristics of patients were determined such as age, body weight, BMI for both test and control patients. Like, the biochemical parameters of the patients, primary blood pressure such as Systolic BP - 24 hours (mmHg) and Diastolic BP - 24 hours (mmHg) was analyzed by manual method for both test and control patients. After eight weeks (8weeks) trial, blood pressure was determined by same manual method for test and placebo control patients.

The baseline characteristics are shown in Table no1. We can observe that the groups were not different in relation to (age, body mass index, weight, heart rate, systolic and diastolic pressure values). Initial result systolic blood for test patient was 149.9 ± 11.2 mmHg and for placebo control was 149.2 ± 10.5 mmHg. After eight week trial of optimized Captopril 60mg (F-9), systolic blood was reduced (140.1 ± 11.4 mmHg) as compared to placebo control such as (148.9 ± 11.3 mmHg). Like systolic blood pressure, initial diastolic blood pressure for test patient was (97.7 ± 7.2 mmHg) and for placebo was (95.3 ± 7.7 mmHg) but after eight week trial of optimized Captopril 60mg (F-9), diastolic blood pressure was reduced in test patients (86.6 ± 5.4 mmHg) as compared to placebo control such as (93.9 ± 7.9 mmHg). All the Biochemical parameters were not changed for test patient after eight week trial such as (Total Cholesterol 198.2 ± 42.3 (mg/dl), HDL-Cholesterol 53.8 ± 13.2 mg/dl), LDL-Cholesterol 113.6 ± 32.9 mg/dl), Triglycerides 137.8 ± 88.6 (mg\dl) and for fasting glucose 97.4 ± 11.3 mg/dl level) as compare to placebo such as (Total Cholesterol 192.3 ± 33.5 (mg/dl), HDL-Cholesterol 46.6 ± 11.3 mg/dl), LDL-Cholesterol 118.4 ± 25.6 mg/dl), Triglycerides 145.7 ± 88.6 (mg\dl) and for fasting glucose 96.8 ± 8.8 (mg\dl) level. Table No.2 result showed that the optimized product Captopril 60mg (F-9) has best antihypertensive efficacy for long time. For the achieving the goals (pressure levels equal to or lower than 90 mmHg), the treatment of hypertension with optimized product of Captopril 10mg (F-9), we got result more than 68.9% of the patients treated with optimized product. Result showed that optimized product of Captopril 10mg (F-9) didnot affect sympathetic activity and not cause any significant variations of heart rate. Our results showed that the optimized product of Captopril 10mg (F-9) at low doses has a very good biochemical profile with no adverse effects.

The good biochemical profile of the optimized Captopril 10mg (F-9) was found in the study because we use very low dose of drug and the excipients in formulation do not affect the biochemical profile. Diuretics and beta-blockers, promote significantly change lipid profile, glucose metabolism. But in our study, the optimized product Captopril 10mg (F-9) did not alter parameters

of either glucose metabolism or plasma lipids, thus having a neutral biochemical profile even when used for 8 weeks. Table.No.3

The optimized product Captopril 10mg (F-9) is safe because result showed and best for the treatment of hypertension in patients with (metabolic syndrome, diabetes mellitus and dyslipidemias).

CONCLUSION

The optimized Captopril 60mg (F-9) it is an excellent option for the treatment of hypertension with high antihypertensive efficacy, good tolerability and no biochemical effects. It is due to low dose drug and also no effect of excipient of formulation of F-9.

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

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Effect of Smokeless Tobacco Administration on Weight and Histology of Stomach in Offsprings of Swiss Albino Mice

Qadir Bux Memon¹, Muhammad Bachal Pandhiani¹ and Zaheer Ahmed Memon²

ABSTRACT

Objective: To observe and evaluate the structural changes in the stomach of the offsprings of Swiss albino mice exposed to smokeless tobacco during pregnancy.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at the Animal House of Al-Tibri Medical College Karachi from July 2015 to December 2015.

Materials and Methods: Female albino mice were mated. After confirmation of pregnancy 20 pregnant mice were divided into two groups of 10 each. Group A experimental was given 5% tobacco of local brand mixed with their normal chow diet along with clean water ad libitum and group B control was given normal diet along with clean water ad libitum. After 2 weeks of birth, 20 offsprings (10 male and 10 female) were selected randomly from both groups. The offsprings were sacrificed by cervical dislocation and their stomachs were removed for gross and histological analysis.

Results: The mean weight of stomach in experimental male offspring was found to be 0.12 ± 0.01 grams, while in control group it was 0.18 ± 0.02 grams. Whereas the mean weight of stomach in experimental female was found to be 0.10 ± 0.02 . However in control female group it was observed as 0.15 ± 0.02 grams. The difference in the mean weight of stomach between the experimental and control groups was observed to be highly significance (p Value < 0.001) in both male and female offspring. The infection induce marked changes in the stomach, like destruction of gastric folds and glands, desquamation of endothelial cells of glands. Mild to moderate inflammatory and chronic necrotic changes with gastric atrophy were observed in microscopic findings of the gastric mucosa in smokeless tobacco treated animals. Mild dysplasia and adenomatous changes were seen in few cases of experimental animals. This lesion may result from the oral administration of toxic infants.

Conclusion: The use of smokeless tobacco during pregnancy has some adverse outcomes on the offspring of mice manifested by the decrease in stomach weight as well as alter the histological features of stomach mucosa especially produces the fatty infiltration, necrotic and adenomatous changes of the gastric glands.

Key Words: smokeless tobacco, stomach, offspring

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INTRODUCTION

Tobacco is a plant that natively grows in America since centuries. It's harvesting steadily increasing demand of tobacco plants and that has been transported for cultivation to countries all over the world.¹

"Tobacco" is a name used for plants of the genus *Nicotiana* of the Solanaceae (nightshade) family. The name is also used for the product manufactured from tobacco leaves and used in cigars, cigarettes, snuff, pipe and chewing tobacco.

Different species of the tobacco plant, with different characteristics associated with smoking have become popular in different parts of the world. The primary active ingredient of tobacco is the alkaloid nicotine, which is responsible for its narcotic and soothing qualities.^{2,3} About 2,500 chemical ingredients have been detected in which many active principals are carcinogens,⁴ like tobacco specific nitrous amide, nicotine, cadmium, arsenic, lead, chromium and nickel,⁵ among these there are certain compounds like nicotine which can cross placental barrier is detected in fetal umbilical cord and in amniotic fluid much more beyond the maternal concentration.⁶

According to the World Health Organization (WHO), tobacco is the single most preventable cause of death in the world today.^{2,7} Overall prevalence of global tobacco use among men is declining slowly while use of tobacco among women is increasing rapidly and women from developing countries are at a higher risk.^{8,9} Pakistan is one of the few countries in the world where smokeless tobacco is widely and routinely

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consumed. Numerous statistics and records reported the chewing habits incidence in various communities and areas is going to increase in either gender. Various records from different sources reported that 20% of males and 17% of females use the smokeless tobacco.^{10,11}

Smokeless tobacco has been implicated in producing numerous adverse effects in human and animals. These include epithelial changes in the oral mucosa, intestinal wall, gastric mucosa, generalized vasoconstriction, tumors of the lung, hepatomegaly, mental retardation. It also induces changes in the fetus in case of pregnant females.¹²

Placenta provides a vital link between the mother and the fetus. It plays the fundamental role of transferring nutrients and oxygen from the mother to the developing fetus. It also allows wasteproducts and carbon dioxide to be removed from the fetus and returns to the mother. Simultaneously it plays a role in the synthesis of hormones desired for natural development. Explants of placenta of human may be grown and observed in vitro experimentally. In a case, it was concluded that nicotine itself was capable to inhabit trophoblast differentiation, thus, hinders invasion of cytotrophoblast in a vitro assay. These authors further showed that nicotine hindered activation and synthesis of collagenase of type IV, which is essential for the invasion of cytotrophoblast.¹³

Subsequent to absorption, in the bloodstream nicotine enters where, the greatest nicotine affinity is in the spleen, liver, lung and kidney and lowest in the tissue of adipose. In muscle of skeletal, cotinine and nicotine concentrations are near to the whole blood. Concentration of Nicotine to tissues of brain with greater affinity and noticeably accumulates in saliva and gastric juice.¹⁴ Histological changes have also been reported in the stomach. As it is an organ which has the secretory role when swallowed material entering into it is converted into chyme through its enzymatic reaction.¹⁵ One of current hypothesis suggested that the stomach parenchymal diseases such as chronic gastritis, hyperplasia, and fatty changes are the results of the increased toxicity caused by nicotine intake.¹⁶

However in adult human and animal model very few studies are available on the effects of smokeless tobacco or nicotine on the stomach. Since the utilization of any form of tobacco is highly common these days and in our setup not even a single study is explored on tobacco effects on the stomach mucosa of offspring of mice. The objective of the present research study is to observe the effects of the use of local chewing tobacco on the developing stomach of the offspring of mice.

MATERIALS AND METHODS

Healthy adult male & female mice of average mean weight were obtained from animal house of Al-Tibri Medical College Karachi. Mice were kept in

plastic cages, provided with feed containers of stainless steel and stainless nozzles plastic drinkers. Mice were not forbidden to receive standard chow diet and to receive water after and before the trail. Saw dust was utilized for beddings and was amended each day. The animals were reared in the well ventilated and hygienic environment, 12 hours day light and dark cycle, and at 26°C room temperature. The experimental protocols were performed at the Al-Tibri Medical College and Animal House ATMC Karachi approved by Ethical & Research Committee Isra University Hyderabad. The cages of female mice were labeled required showing their different parameters to be observed.

All the female mice were copulated with adult male mice restricted for seven days from mating to grow their sexual urge for sex. Only one male mouse was paired with two females (GD- 0). Pregnancy was verified by mucus vaginal plug presence between 1- 10 days of pairing. On confirmation of pregnancy, the males were removed.

Twenty Pregnant Swiss albino mice were divided in two groups:

Group. A (Experimental) 10 pregnant mice

Group. B (Control) 10 pregnant mice

Female mice from day 1 till parturition were kept in separate cage (2 per cage) and tail tagged.

Group A experimental group was given 5% tobacco mixed with normal chow ad libitum along with clean water from GD-1 to parturition.

Group B control group was kept on normal feed ad libitum and clean water.

After delivery, the total of 40 offspring were selected randomly (20 offspring 10 male and 10 female) from group A and group B respectively.

Offspring of both A and B groups were divided into sub groups as follow:

Group A-1. (Experimental) 10 male offsprings

Group A-2. (Experimental) 10 female offsprings

Group B-1 (Control) 10 male offsprings

Group B-2 (Control) 10 female offsprings

After 15 days, the male and female offspring's of both control and experimental groups were sacrificed by cervical dislocation. The stomachs were removed and set in formaldehyde 10%, after which process of dehydration was conducted in alcohol ascending grades. Then the tissues were sterilized with xylene quickly to remove the alcohol. Impregnation/Infiltration was made for two molten soft paraffin wax changes for 30 minutes at 58°C each. With two L- shaped metal pieces, casting and embedding in paraffin wax was carried out and sectioning was made using a microtome. Four micron (u) thick sections were cut on rotary microtome and immersed in hot water bath. The sections were mounted on slides using a thin film of egg albumen smeared on each slide. Dewaxing was done using hot plate at 37°C and then washing with changing xylene twice was carried out. Xylene was

eliminated with absolute alcohol and at last before staining, process of hydration was carried out. The sections were marked with heamtoxylin & eosin and mounted in Canadabalsam.

To study the stomach, offspring parenchymal tissues in control and experimental groups, heamtoxylin & eosin (H&E) stained sections were used. The slides were analyzed for histopathological variations under light microscope.

RESULTS

While comparing the gross and histological features in the stomach of offsprings of experimental and control groups, the following results were observed.

Weight of Stomach: Regarding comparison of weight of stomach of offspring, it was found that in male offspring experimental group the average (mean) weight was 0.12 ± 0.01 grams and the average (mean) weight of control group male offspring mice was 0.18 ± 0.02 grams. (P value < 0.001). (Figure # 1)

The weight of stomach in experimental female was 0.10 ± 0.02 grams and female offspring in control group was 0.15 ± 0.02 .

The difference was found highly significant among both group i.e in control and in experimental groups. (P value < 0.001). (Figure # 1).

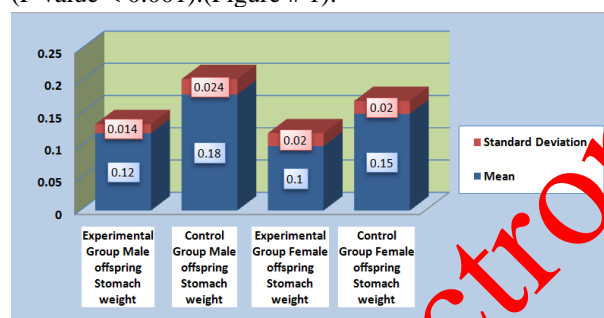


Figure No.1: Bar chart showing comparison between the mean weight of the stomach of the offsprings of both male and female in experimental and control groups. (pValue<0.001)

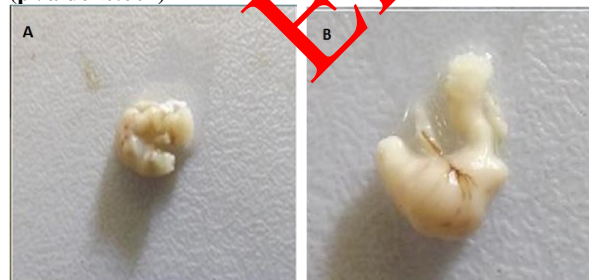


Figure No.2: (A) Stomach of experimental male offspring mouse showing gastric atrophy
(B) Stomach from control male offspring mouse showing normal structure of the stomach.

Histological Findings of Stomach of Offsprings: The histological changes recorded in the stomach of offsprings of mice exposed to smokeless tobacco. The infection induces marked changes in the stomach, like

destruction of gastric folds and glands, desquamation of endothelial cells of glands. (Figure # 6)

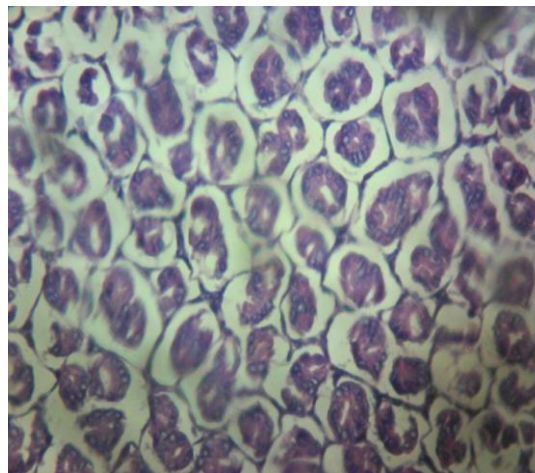


Figure No.3: Photomicrograph of H& E section of stomach from mice of control group offspring showing normal histology.

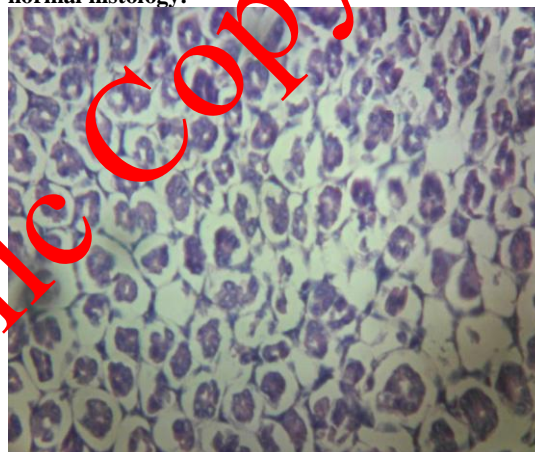


Figure No.4: Photomicrograph of H& E section of stomach from mice of experimental group offspring showing fatty infiltration.

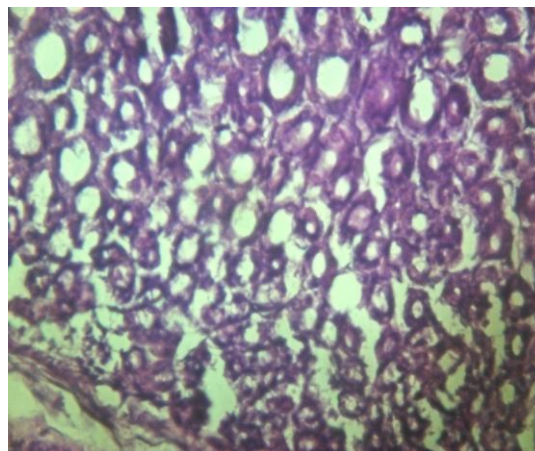


Figure-5: Photomicrograph of H& E section of stomach from male mice of experimental group offspring showing adenomatous changes.

Mild to moderate inflammatory and chronic necrotic changes (Figure # 4 & 6) with gastric atrophy (Figure # 2-A) were observed in microscopic findings of the gastric mucosa in smokeless tobacco treated animals. Mild dysplasia with adenomatous changes were seen in few cases (Figure # 5). This lesion may result from the oral administration of toxic irritants. However not significant results were observed in comparison of mucosal lesions between experimental groups of male and female offsprings.

The stomach from the control group showed normal appearance and histological structure of the offsprings of mice. (Figure # 2-B & 3)

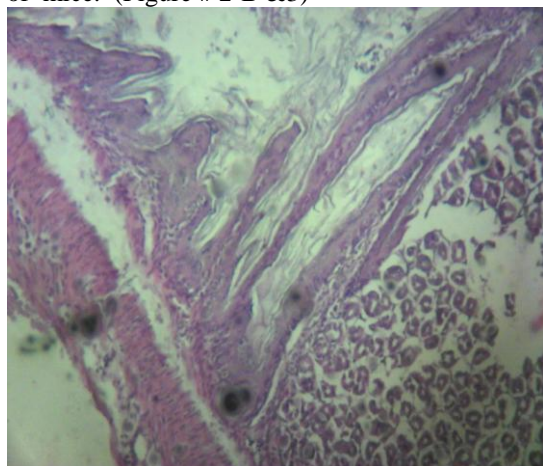


Figure No.6: Photomicrograph of H&E section of limiting ridge of stomach from mice of experimental group offspring showing edematous and necrotic changes of gastric glands.

DISCUSSION

The use of local chewing tobacco is quite common in our society especially by females whose ratio is increasing day by day. This is due to different reasons like increased social acceptance, ability to conceal it, and used in mouth freshness. Smokeless tobacco poses a major risk to women and to the children born to them. This study was planned to observe the use of local tobacco in pregnancy outcomes especially on the stomach of offsprings in Swiss mice.

The result of our study showed the gastric atrophy and decrease in growth of stomach in tobacco treated animals. Gastric Atrophy, was diagnosed in which the extensive glandular damage, gastritis and altered metabolism of gastric glands was present. This was in agreement with the study of Chenlin Yu¹⁷ & Kazuo Endoh¹⁸ who have reported the similar changes in the stomach of adult experimental animals treated with nicotine.

One of the other finding in our study was a significant decrease in the relative weight of the stomach was observed in both male and female rats of the smokeless tobacco group compared with the control group. We are unable to find a comparable study probably due to the fact that the studies we have referred either do not

mention the weight of the stomach and / or have seen the effects of tobacco consumption by adult animals and have rather reported the fatty degeneration of stomach mucosa.¹⁹

The most significant finding of our study was the altered morphology and the histopathological changes in the stomach of the offsprings of the tobacco treated mothers. The main findings were the fatty infiltration of stomach parenchyma; beside it we also observed the cell swellings indicating necrotic and adenomatous changes of stomach wall of experimental animals. These findings are in agreement with the comparable findings of American Cancer Society¹⁵ and Daniel N. Willis¹⁶

In the histological findings of this study, it is observed that in male offsprings the changes are more severe in comparison to female. It is due to the fact that male offsprings are more active they take more share from maternal blood and milk leading to more damage of stomach in comparison to female..

CONCLUSION

From this study it is concluded that the use of smokeless tobacco during pregnancy has some adverse outcome on the offsprings of mice manifested by the decrease in stomach weight as well as alter the histological features of stomach mucosa especially produces the fatty infiltration, necrotic and adenomatous changes of the gastric glands.

Recommendation: The society in general and females in particular are soft targets due to illiteracy, hard work and unawareness about bad effects of smokeless tobacco. Therefore they should be communicated about the information on hazards created by smokeless tobacco, especially its effect of use in pregnancy. In this way we can save them and their future generations.

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

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Compare the Mean Hospital Stay Between Ileostomy Reversal Patients with and Without Nasogastric Tube

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ABSTRACT

Objective: The objective was to compare the mean hospital stay between the ileostomy reversal patients with nasogastric tube and without nasogastric tube.

Study Design: Comparative and totally randomized controlled

Place and Duration of Study: This study was conducted at the Department of General Surgery, Ghazi Khan Medical College, D.G Khan from Oct 10, 2015 to April 10, 2016.

Materials and Methods: Totally 60 patients with 20 to 50 years of age of both genders undergoing ileostomy reversal were included. Patients with h/o pelvic irradiations, malnutrition, Diabetes Mellitus and chronic renal failure were excluded. Then selected patients were placed randomly into two groups i.e Group A (ileostomy reversal without nasogastric tube), & Group B (ileostomy reversal with nasogastric tube), by using lottery method. Mean hospital stay was noted in every patient of both groups from day of operation to day of discharge at which final outcome was measured.

Results: The mean age of patients with Group A was 29.44 ± 8.28 years and in Group B was 30.12 ± 9.09 years. Out of 60 patients 41 were males, and 19 were females with male to female ratio of 2.16:1. The mean duration of ileostomy in group A was 3.13 ± 1.43 months and Group B was 3.45 ± 1.21 months. Mean hospital stay in group A (ileostomy reversal without nasogastric tube) was 5.39 ± 2.51 days, while in group B (ileostomy reversal with nasogastric tube) was 8.53 ± 3.78 days (p-value < 0.0001).

Conclusion: The study concluded that mean hospital stay is shorter after ileostomy reversal without nasogastric tube placement compared with nasogastric tube placement.

Key Words: intestinal stoma, paralytic ileus, discharge, bowel movements

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INTRODUCTION

Placement of nasogastric tube after ileostomy reversal is classic dogmatic teaching in surgical training. Many clinical studies have suggested that this practice does not provide any benefit but could lengthen the hospital stay, in addition to patient's discomfort and respiratory complications. The purpose of this study was to compare the mean hospital stay between ileostomy reversal patients with nasogastric tube and without nasogastric tube. An ileostomy is a surgical opening formed by bringing the end of small intestine (ileum) out onto the surface of skin. Ileostomies are usually sited above the groin in the right lower quadrant of the abdomen.¹

There are couples of different types of ileostomies. The most important are two in no. and commonly used. The conventional or BROOKE' ileostomy with pouch applied onto the stoma.² The another type is KOCK' ileostomy continent with external valvular stoma.³ The reversal of ileostomy considered as simple procedure but can be considered with significantly high morbidity & mortality.⁴ Stoma is closed after maturation and complete recovery after initial illness. Conventionally, after reversal operation, patients are kept nothing per mouth for 4-5 days with nasogastric tube in situ.⁵ Many clinical studies have suggested that this practice does not provide any benefit but could lengthen the hospital stay, in addition to hospital discomfort and respiratory complications.⁶ These problems combined with discomfort and restrictions in mobility led several to support a selective approach to use the postoperative nasogastric tubes.⁷ Then the method with shorter hospital stay could be opted in our routine practice which could save money and time by early discharge from hospital. This can also help the over burden by early discharge and beds availability to other patients in tertiary care hospital.

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MATERIALS AND METHODS

A total of 60 patients were studied. The hospital study was from the day of operation to day of discharge from hospital.

All patients with ileostomy of 1-6 months duration as per operational definition and ileostomy formation as damage control (typhoid perforation, TB intestine, post abdominal trauma) were included in this study.

The patients with pelvic irradiation, Malnutrition, diabetes mellitus, chronic renal failure, jaundice and taking steroids were excluded.

RESULTS

Age range in this study was from 20-50 years with mean age of 29.63 ± 8.58 years. The mean age of patients in group A was 29.44 ± 8.28 years. Majority of the patients in group B were 30.12 ± 9.09 years. Majority of the patients 23(38.33%) were between 31 to 40 years of age as shown table -1. Out of 60 patients 41(68.33%) were males and 19(31.67%) were females with male to female ratio of 2.16=1.

Means duration of ileostomy was 3.31 ± 1.31 months. The mean duration of ileostomy in group A was 3.13 ± 1.43 months, group B was 3.45 ± 1.21 months. Majority of patients 33 (55.0%) were between > 3to6 months duration as shown in table II. Mean hospital

stay in group A (ilepstomy reversal without nasogastric tube) was 5.39 ± 2.51 days while in group B (ileostomy reversal with nasogastric tube) was 8.53 ± 3.78 days.

Stratification of age groups with respect to mean hospital stay has shown in table III. Which showed significant difference in mean hospital stay in all age group, among both Groups.

Similarly statistically significant differences was found in mean hospital stay in both genders among both groups as shown in table IV. Stratification of duration of ileostomy with respect to mean hospital stay has shown in table V which also showed statistically significant difference among them.

Table No.1: Age distribution for both groups. (n=60)

Age (years)	Group A (n=30)		Group B (n=30)		Total (n=60)	
	No of Patients	%age	No of Patients	%age	No of Patients	%age
20-30	10	33.33	08	26.67	18	30.0
31-40	12	40.0	11	36.67	23	38.3
41-50	08	26.6	11	36.67	19	31.67
Mean \pm SD	29.44 ± 8.28		30.12 ± 9.09		29.63 ± 8.58	

Table No.2: %age of patients according to duration of ileostomy in both groups.

Duration of ileostomy (in months)	Group A (n=30)		Group B (n=30)		Total (n=60)	
	No of Patients	%age	No of Patients	%age	No of Patients	%age
1-3 months	14	46.67	13	43.33	27	45.0
>3-6 months	16	53.33	17	56.67	33	55.0
Mean \pm SD	3.13 ± 1.43		3.45 ± 1.21		3.31 ± 1.37	

Table No.3: Stratification of age group with respect to hospital stay.

Age of patients (years)	Group A (n=30)		Group B (n=30)		P-value
	Hospital stay (days)		Hospital stay (days)		
	Mean	SD	Mean	SD	
20-30	4.87	2.11	7.76	3.19	0.0013
31-40	5.67	1.89	8.27	3.81	0.0006
41-50	5.23	2.45	8.56	3.43	0.0005

Table No.4: Stratification of Gender with respect to hospital stay.

Gender	Group A (n=30)		Group B (n=30)		P-value
	Hospital stay (days)		Hospital stay (days)		
	Mean	SD	Mean	SD	
Male	5.06	2.43	8.01	3.21	<0.0001
Female	5.62	2.51	8.74	3.89	0.0026

Table No.5: Stratification of ileostomy duration with respect to hospital stay.

Duration of ileostomy (in months)	Group A (n=30)		Group B (n=30)		P-value
	Hospital stay (days)		Hospital stay (days)		
	Mean	SD	Mean	SD	
1-3 months	5.12	2.70	8.08	3.01	<0.0001
>3-6 months	5.42	2.55	8.61	3.59	<0.0001

DISCUSSION

The reversal of loop ileostomy is considered a simple procedure but can be associated with high morbidity and even mortality.⁸

Stoma is closed after maturation and surgery to reverse a stoma is basically to "reconstruct the bowel" and is a successful procedure for the majority of patients.⁹

Placement of NG tube after abdominal surgery after enteric anastomosis is classic dogmatic teaching in surgical training.¹⁰

The aim of NG is gastric decompression, prevent nausea, vomiting, abdominal distension and pulmonary aspiration and pneumonia, less chance of hernia and earlier return of bowel function and early discharge from hospital.¹¹

Current study shows that routine use of nasogastric decompression is associated with pulmonary, electrolyte, mechanical and infectious complications.¹²

Nasogastric intubation is in routine use after abdominal surgeries for last many years. During last few years better concept of perioperative fluid management, early postoperative mobilization and good pain control have changed to whole scenario of postoperative course of patients on surgical floor. These changes have raised the question of routine use of postoperative nasogastric decompression after small bowel anastomosis.¹³

This randomized controlled study has compared the mean hospital stay between ileostomy reversals patients with and without nasogastric tube placement. After few studies on the role of nasogastric decompression after colonic surgery, many surgeons have stopped routine use of nasogastric decompression after colorectal surgery but are still using it in small bowel surgery. Mean hospital stay in group A (ileostomy reversal without nasogastric tube) was 5.39 ± 2.51 days while in group B (ileostomy reversal with nasogastric tube) was 8.53 ± 3.78 days (p-value < 0.0001).¹⁴ Qureshi U et al has shown significant differences in mean hospital stay between ileostomy reversal with NG tube and without NG tube i.e 8.1 ± 4.4 days versus 5.7 ± 1.4 days respectively. The problems combined with the discomfort and restrictions in mobility led several to support a selective approach to use postoperative nasogastric tube.

Necessity of NG decompression following elective abdominal surgery does not benefit the patients but lengthen the hospital stay. Colvin DB et al.¹⁵ In randomized controlled trials has concluded that there is no extra benefit of placing nasogastric tube.

Many other studies also have shown that there is no significant difference of postoperative hospital stay in patients with and without NG tube placement. WU CC et al. Has also found shorter hospital stay in patients without NG tube placement. Its use shows no significant benefit in reducing the duration of ileus. On the whole, it is concluded that mean hospital stay is shorter after ileostomy reversal without nasogastric tube placement compared to with nasogastric tube placement.

CONCLUSION

The study concluded, that mean hospital stay is shorter after ileostomy reversal without NG tube placement compared to those with NG tube placement.

So the routine use of nasogastric tube placement after ileostomy reversal should be discouraged as it is associated with more expense of money and time.

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

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Management of Severe Postpartum Haemorrhage with Bilateral Ligation of Internal Iliac Artery in Secondary Care and Tertiary Care Hospital; 4.5 Years Experience

Shazia Saeed¹, Ashfaq Ahmad² and Zadad Khan³

ABSTRACT

Objective: Is to describe effectiveness of bilateral ligation of internal iliac artery in severe PPH with benefit of preserving fertility.

Study Design: Prospective case series study.

Place and Duration of Study: This study was conducted at DHQ Hospital Bagh and C.M.H, Muzaffarabad Azad Kashmir from September 2008 to November 2013.

Materials and Methods: In fifty one patient bilateral ligation of internal iliac artery was done to control severe PPH after failure of conventional therapy (medical and other surgical measure bilateral uterine artery ligation and B lynchstich).

Results: Among those 50 patients the success rate was 88% and incidence of hysterectomy was 12%.

Conclusion: This procedure is successful in controlling haemorrhage preserving fertility with less morbidity.

Key Words: Postpartum hemorrhage, Bilateral ligation of internal iliac artery, Tertiary Hysterectomy.

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INTRODUCTION

Postpartum hemorrhage is still leading cause of maternal mortality worldwide with an overall prevalence of approximately 6%. Africa has highest frequency of about 10.5%.¹ In countries with very high maternal mortality rate including Africa and Asia, PPH account for more than 30% of all maternal death.² In developing countries 14 million cases dying of PPH worldwide each year.³ Primary post-partum hemorrhage is loss of >500ml from genital tract within 24 hours after birth of baby.⁴ PPH can be minor 500-1000ml or major >1000ml major could be divided to moderate 1000-2000ml or severe >2000ml. Treatment option for PPH include conservative management with uterotonic drug, external compression with uterine suture (B-Lynch) and intrauterine packing.⁵ However when conservative method have failed to control haemorrhage bilateral ligation of internal iliac artery should be considered immediately. It is a safe rapid and effective method of controlling PPH from genital tract, massive broad ligament haematoma, or even after peripartum hysterectomies.

Following bilateral ligation of internal iliac artery, there is 25% reduction in pulse pressure and 48% in blood flow in arteries distal to ligation.⁶ Timely intervention may not only save the life of patient but also her uterus. There are several reports of full term pregnancies after this procedure.⁷ Little morbidity has been observed if the procedure is performed appropriately.^{8,9,10}

MATERIALS AND METHODS

This is a prospective case series study conducted on 51 patients who underwent bilateral internal iliac artery ligation for persistent and severe obstetrical haemorrhage from September 2008 to November 2013 at two different institutes i.e. DHQ Hospital Bagh and Sheikh Khalifa Bin Zayed Al-nahyan Hospital Muzaffarabad AJK. All the procedures were performed by same consultant Gynecologist and Consultant Urologist. All the patients with severe PPH (uterine atony, major degree placenta previa, abruption-placenta, rupture uterus and cases of peripartum hysterectomy with persistent profuse bleeding even after hysterectomy) who failed to respond with medical management and B. lynchstich were included in this study. Postpartum hemorrhage due to coagulopathy and HELLP syndrome were excluded from study. Demographic feature like, age of patient, parity, mode of delivery and place of delivery were recorded. Number of blood transfusion, surgical time and hospital stay of patient complication of PPH like renal failure,

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DIC and wound infection were recorded. Follow up of patient after 2 week and 4 weeks time after discharge were also recorded on pre-design proforma.

RESULTS

Fifty one women underwent internal iliac artery ligation. Cause of hemorrhage was uterine atony 86% (n=22), placenta previa increta percreta 8% (n=4), uterine rupture 16% (n=8), placental abruption 18% (n=9) one case of broad ligament haematoma 2% (n=1), patient following peri-partum hysterectomy 14% (n=7). Forty-four patients underwent internal artery ligation as primary surgical intervention. The bleeding was controlled in 42/44 patients (95%) and only 2 women (4.5%) showed unsuccessful management and hysterectomy was urgently performed before closure of abdomen. After obtaining adequate hemostasis with internal artery ligation, none require laparotomy in postoperative period. Seven women with persistent bleeding following peri-partum hysterectomy were also treated with internal iliac artery ligation (as a secondary intervention) all were successful. In our study there were no intra-operative or postoperative complication related to procedure. Average age of patients was 30 years. The mean parity was 4 and mode of delivery was normal vaginal delivery in 24 (54%) cases while L.S.C.S in 20 cases (45%), blood transfusion was performed in all cases. Hypovolemic shock in 18 cases (35%) while coagulation disorders were observed in 7 cases (13%). ARF was observed in 6 cases (12%) which were recovered. No maternal death was recorded in these cases.

DISCUSSION

Peri-partum uterine hemorrhage is always a life threatening concern in obstetrics because it is associated with severe morbidity and mortality.¹¹⁻¹² To control the obstetrical, gynecological hemorrhage and to prevent the hysterectomies bilateral internal iliac artery ligation was first performed by Kelly in 1894. He found it effective and safe method without any major complication with the success rate of 95%.¹³ In our study bilateral internal iliac artery ligation was performed in 51 cases in series of 4 years. In 44 cases it was done as primary surgical intervention. In 42 out of 44 (95%) we were successful in controlling haemorrhage. In two (5%) patients we did hysterectomy peri-operatively before closing the abdomen and no major complication was observed in these patients. In remaining seven patients we performed internal artery ligation after hysterectomy due to persistent bleeding and were successful in controlling haemorrhage in all patients.

Mukerjee et al¹⁴ performed 36 cases of bilateral II-A ligation with success rate of 83.3% in duration of 6 years.

In the study of Papa Thanasiouk et al³, 10 out of 11 cases (91%) haemorrhage was controlled with bilateral II A ligation and in only one case emergency hysterectomy was performed after artery ligation. In some other studies similar results were observed.^{15,16}

In the study of Papp et al¹⁷ the internal iliac artery ligation has been introduced as a routine method to manage the profuse pelvic haemorrhage refractory to conservative methods in their institutions. We have also started in our training modules for the trainees.

In our study uterine atony was the main cause of PPH i.e. 86%. In the study Hueseyin et al¹⁸, the most common cause of PPH is uterine atony. Similar results were observed in the study conducted in Turkey, uterine atony was the main cause (22 out of 33 patients) develop PPH due to uterine atony. But in few studies placenta accreta is the most common cause of intractable PPH.^{19,20} There are several report of pregnancies carried to full term after bilateral ligation of hypogastric artery.²¹⁻²² As we did not have long term follow up so long term follow up is required to evaluate this aspect. Blood transfusion performed in all cases and average blood transfusion was 3.55 pints while coagulation disorder was observed in 17.5% cases. In the study of Mahlouthi et al²⁵ coagulation disorder was almost same i.e. 20.7%, while in the study of Even et al²⁶ coagulopathy was develop in 49.1%. Pelvic ischemia due to bilateral internal artery ligation was one of fear. It has been shown that little morbidity results in short term and long term if the procedure performed timely and appropriately.²⁷⁻²⁹ The primary object of this procedure is to prevent the massive bleeding rather to save the uterus. We are totally agree with Reich and Nechtow et al³⁰ that main pitfall with internal artery ligation is delay in performing this procedure either due to lacking in technique or taking time in decision making. The basic anatomic knowledge is the most crucial thing in learning bilateral internal iliac artery ligation; better understanding of retroperitoneal structures must be an integral part of gynecological and obstetrical training programme. At the tertiary care center one experienced person must be included in every on call team who has been trained to ligate the bilateral internal arteries; this will definitely reduce the mortality due to hemorrhage. In our study there were no intra-operative or post-operative complications related to procedure. We have much better success rate as same gynecologist and urologist transplant surgeon involve in this case series who has better understanding of retroperitoneal anatomy. So we suggest that internal artery ligation should be included in the training module of gynecology and obstetrics.

CONCLUSION

In obstetric emergencies caused by massive bleeding ligation of bilateral internal iliac artery should be considered as a first step during laparotomy with a

primary goal to control bleeding. Learning this procedure should be integral part of obstetric and gynecological training program.

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

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Effect of Pomegranate Peel Alone and in Combination with Rosiglitazone on Oxidative Stress and Insulin Levels in Type 2 Diabetic Rats

Aysha Babar¹, Meena Gul², Sadia Moazzam³ and Mohammad Mazhar Hussain³

ABSTRACT

Objectives: To evaluate the effect of pomegranate peel extract with or without rosiglitazone on plasma malondialdehyde (MDA) and insulin levels in insulin resistant diabetic rats.

Study Design: Randomized control trial study

Place and Duration of Study: This study was conducted at the Department of Physiology, Army Medical College, Rawalpindi, in collaboration with National Institute of Health (N.I.H), Islamabad from 1st January 2011 to 28th May 2011.

Materials and Methods: Type 2 diabetes mellitus was induced in sixty healthy rats. The diabetic rats were divided into four groups, namely diabetic control group which received intraperitoneal injection of normal saline daily, pomegranate group which was treated similar to control group and also received pomegranate peel extract (200mg/kg body weight) orally once daily, rosiglitazone group which received intraperitoneal injection of rosiglitazone (5mg/kg body weight) daily and the combined group received both pomegranate extract (100 mg/kg body weight, orally) and intraperitoneal injection of rosiglitazone (2.5 mg/kg body weight) daily for 28 days.

Results: The plasma MDA levels were significantly ($p < 0.001$) reduced in pomegranate, rosiglitazone and combined groups respectively as compared to the diabetic control. The mean serum levels of insulin ($p < 0.001$) reduced in pomegranate group, in rosiglitazone group and in combined group respectively.

Conclusion: Pomegranate peel extract is hypoglycemic and hypolipidemic agent in low doses when used alone or in combination with rosiglitazone in type 2 diabetic rats.

Key Words: Diabetes mellitus, Pomegranate peel extract, Rosiglitazone.

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INTRODUCTION

Diabetes is a chronic burdensome disease affecting the large segment of world especially the poor, developing countries in which lack of awareness have led to the complications like cardiovascular disease, diabetic neuropathy, nephropathy, retinopathy and stroke.¹ (Caro, 2002).

Pakistan is a poor developing country with a high prevalence of diabetes especially affecting population of working age group (35-64 years). Globally Pakistan is 6th leading country affected with diabetes.² (Wild et al, 2004). Type 2 diabetes mellitus is characterized by

hyperglycemia, due to insufficient secretion of insulin, insulin resistance in peripheral tissues, and inadequate suppression of glucagon production.³ (Spellman, 2010). In type 2 diabetic patients there is a progressive decline in insulin secreting capability of pancreatic β -cells attributed to harmful effects of chronic hyperglycemia, elevated free fatty acids (FFAs), increased generation of reactive oxygen species (ROS) and deposition of amyloid in the islets of Langerhans.⁴ (Höppener et al., 2000). Diabetes is associated with increased oxidative stress.⁵ (West, 2000). ROS generation causes membrane lipid peroxidation.⁶ (Sanocka and Kurpisz, 2004). Lipid peroxidation exerts its action on fatty acids and causes alteration in the lipid structure. Enhanced lipid peroxidation produces malondialdehyde (MDA) which is a marker of lipid oxidation; possess deleterious effects on different tissues of the body by altering the function of membrane bound receptors, enzymes, decreasing the fluid state of the cell membrane and causes breakdown of lysine amino acid. The measurement of MDA - thiobarbituric acid (TBA) is most widely used assay for lipid peroxidation due its simple technique. The increase in the level of the MDA correlates with the hyperglycemia in diabetic subjects

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because of autooxidation of glucose, which causes the generation of free radicals.⁷(Acworth, et al., 1997). Pomegranate (*Punicagranatum* L.) is a very popular fruit having a growing history of 2000 years and is the predominant member of two species belonging to the puniceae family. Recent studies have revealed the beneficial constituents in management of diabetes and its complications although their mode of action is still not clear. The peel which is usually discarded is rich in many biologically active compounds such as phenolics, flavonoids, punicalin, pedunculagin, and punicalagin, proanthocyanidin and minerals.⁸ (Mirdehghan and Rahemi 2007). The peel contains complex polysaccharides.⁹ (Jahfaret al., 2003). Despite of the fact that fruit peels are abundant in many bioactive compounds few studies are available to demonstrate the hypoglycemic activity of peel extracts of different fruits whose many parts like seeds and juice are used worldwide as a remedy of diabetes and its complications.¹⁰ (Parmar and Kar, 2007).

In this backdrop, the present study was aimed to analyze the antidiabetic activity of methanolic extract of pomegranate peel in insulin resistant diabetic rats alone and in combination with antidiabetic drug rosiglitazone.

In Pakistan no documented scientific research work is available to highlight the role of pomegranate in diabetes mellitus.

MATERIALS AND METHODS

This Randomized control trial study was carried at the Department of Physiology, Army Medical College Rawalpindi and National Institute of Health (NIH) Islamabad, Pakistan from 1st January 2011 to 22nd May 2011.

In our study, healthy Sprague-Dawley rats of 60-90 days age were purchased from National Institute of Health (NIH), Islamabad. The body weight of each rat ranged between 250±300 grams. These rats were bred in the animal house of NIH and had free access to water and high fat diet.

Rats suffering from any illness as evident from changes in their eating and drinking habits were not included in the study.

Preparation of plant extract: Fresh *Punicagranatum* (Kandharianar) were purchased from the local fruit market of Rawalpindi. Voucher specimen number 172, was obtained from Quaid-e-Azam University, Islamabad Pakistan. The whole fruits were thoroughly washed and their peels were removed. The washed peels were air dried for about one month under shade. The dried peels were crushed to powdered form in a mechanical mortar and weighed. 200 grams peel powder was dipped in 1200 ml methanol and then filtered. It was then subjected to mechanical stirring for 24 hours. The solvent was then removed under reduced pressure in a rotary evaporator. In the rotary evaporator;

the peel extract was passed through a water bath at 45°C until the solvent was evaporated. The peel extract was transferred to eppendorf tubes and stored at -20° C before use. The extract was prepared at the Department of chemistry, Quaid-e-Azam University, Islamabad.

Diabetes mellitus was induced in all sixty rats. Rats were fed high fat diet for 2 weeks after which a single intraperitoneal injection of streptozotocin (35mg/ kg body weight) was administered (Srinivasan, *et al*, 2005).¹¹ After 72 hrs, fasting blood glucose levels along with lipid profile was measured to confirm the development of diabetes and insulin resistance (TG: HDL > 1.8).¹² (McLaughin, *et al.*, 2005).

After induction of type 2 diabetes mellitus in sixty Sprague-Dawley rats, these were divided into four groups as follows:

Group I (n=15)

Control diabetic Rats: Diabetic rats were continued on high fat diet *ad libitum* for 28 days along with intra peritoneal injection of normal saline once daily.

Group II (n=15)

Pomegranate peel group: Diabetic rats were administered pomegranate peel extract in the dose 200 mg/kg body weight (calculated by dose response curve after pilot study) orally through gavage needle daily for 28 days. (Parmar and Kar 2008).

Group III (n=15)

Rosiglitazone group: Diabetic rats were administered injection rosiglitazone intraperitoneally in the dose of 5 mg/kg body weight daily for 28 days.

Group IV (n=15)

Pomegranate and rosiglitazone group: Diabetic rats were given combined pomegranate peel extract (100 mg/kg body weight) orally and rosiglitazone (2.5mg/kg body weight) intraperitoneally daily for 28 days.

For intra cardiac sampling, each rat was placed at its back and after palpation of lower rib cage and sternal margin; syringe needle was inserted into heart taking care not to pierce the posterior wall.

Blood samples from all the groups were transferred to appropriately labeled tubes specific to the group. 1.5 ml blood was put in EDTA tubes for plasma MDA and insulin estimation. The samples were transported from NIH to the Centre for Research in Experimental and Applied Medicine (CREAM) at Army Medical College for further processing, storage and assays. After centrifugation the plasma was pipetted out of the sodium fluoride tubes, EDTA tubes and transferred to eppendorf tubes for storage. The plasma for the estimation of insulin levels was stored at -20°C for and at - 70°C for the estimation of plasma MDA levels. Malondialdehyde levels were estimated by thiobarbituric acid reactive substances (TBARS) assay, which is a simple, reproducible and standardized method for assaying lipid peroxidation in plasma, serum, urine, tissue homogenates, and cell lysates.^{14,15} (Armstrong and Browne, 1994 and Yagi, 1998). Insulin

(Rat) Elisa kit (DRG. International, U.S.A). Cat no EIA- 2048 was used for estimation of plasma insulin levels.

Statistical Analysis: Data was entered into SPSS version 16. Mean and standard deviation were calculated for all values. Data within the groups were analyzed by using one-way analysis of variance (ANOVA) followed by Post- Hoc Tukey's test. P value ≤ 0.05 was considered significant.

RESULTS

Rats with fasting blood glucose levels greater than 11 mmol/l (200 mg/dl) were considered diabetic¹⁶(Yassin

and Mwafy, 2007) while TG/HDL ratio greater than 1.8 was taken as insulin resistant.¹²(McLaughin, *et al*, 2005). After four weeks of specific treatment, plasma insulin and plasma MDA levels of all four groups were compared by One Way ANOVA as presented in table 1 and 2 respectively. Then post Hoc test was applied for comparison between two groups. Post-Hock (Tukey's) test was used to calculate the statistical significance of the differences between the mean plasma insulin levels and mean plasma MDA levels amongst the individual groups. The comparison of plasma insulin and plasma MDA levels also revealed significant difference amongst the treated groups (table 2).

Table No. 1: Comparison of plasma insulin and MDA levels by one way ANOVA between different groups.

Variables	Diabetic control rats n=15	Pomegranate peel group n=15	Rosiglitazone Group n=15	Combined group n=15	P value
Insulin(μ U/ml)	20.7 \pm 2.12	16.8 \pm 0.93	15.2 \pm 0.97	14.2 \pm 0.65	P<0.001
MDA(μ mol/l)	10.0 \pm 0.96	5.2 \pm 0.60	4.6 \pm 0.58	3.86 \pm 0.33	P<0.001

MDA (Malondialdehyde levels)

Table No.2: Comparison of insulin and MDA levels between different groups using Post- Hock (Tukey's) test.

Group comparison	Plasma Insulin	Plasma MDA
Control vs. pomegranate peel	< 0.001	< 0.001
Control vs. rosiglitazone	< 0.001	< 0.001
Control vs. combined	< 0.001	< 0.001
Pomegranate vs. rosiglitazone	0.040	0.042
Pomegranate vs. combined	0.001	0.001
Rosiglitazone vs. combined	0.039	0.017

MDA (Malondialdehyde levels)

DISCUSSION

In the present study, type 2 diabetes was induced in Sprague-Dawley rats by using the model developed by Srinivasan *et al*, (2005).¹¹ The rats were given high fat diet for the duration of two weeks, followed by the administration of a single dose of streptozocin in the dose of 35mg/kg body weight. Streptozotocin (STZ)-induced diabetes mellitus is cost effective and rapid technique that can be used in most strains of rodents.

In our study fasting plasma insulin levels were significantly decreased (P<0.001) (18%) in peel extract treated group as compared to the diabetic control group. McFarlin, *et al*., in 2009 showed that feeding obese mice with pomegranate seed oil for the duration of 12 weeks caused 13.8% reduction in fasting plasma insulin as compared to the obese control mice.¹⁷ Huang *et al*., in 2008 found that 5-week treatment with PGF extract improved oral glucose tolerance in ZDF rats, suggested

the improvement in insulin receptor sensitivity. Improvement of insulin receptor sensitivity was the predominant mechanism for the antidiabetic efficacy of the PPAR- γ agonists.¹⁸

Rosenbat *et al*., in 2005 studied the effect of administration of 50 ml of pomegranate juice on serum insulin levels in type 2 diabetic subjects for the duration of three months. At the end of three months, there was no significant decrease in insulin levels (9%) in diabetic subjects as compared to the controls; however there was significant decrease (11.6%) in c- peptide levels in diabetic subjects as compared to the controls.¹⁹

In our study diabetic rats treated with rosiglitazone showed significant reduction (P<0.001) in plasma insulin levels as compared to diabetic control rats. Hussein, (2001) *et al* studied the effect of oral administration of rosiglitazone in a dose of 5 mg/kg to type 2 diabetic rats on plasma insulin for the duration of two weeks. At the end of study it was revealed that administration of rosiglitazone decreased fasting plasma insulin levels significantly (P < 0.03) by 20.6% as compared to the diabetic control rats. These results were similar to our study. They had induced diabetes in Sprague- Dawley rats by model developed by Srinvisan, (2005) as used in our study.

In our study diabetic rats treated with combination therapy of rosiglitazone and peel revealed significant reduction in fasting plasma insulin levels (P< 0.001) by 31% as compared to the control diabetic rats.

In our study MDA levels were assessed to measure the oxidative stress in type 2 diabetic rats. MDA levels found significantly decreased (P<0.001) by 48% in peel extract treated diabetic rats as compared to the diabetic control. Our results are similar to the work done by Althunibat, *et al*., in 2010 also investigated the effect of administration of 10 and 20 mg/kg body weight of methanolic pomegranate peel extract in streptozocin

induced diabetic rats on plasma MDA levels.²⁰ Streptozocin induced diabetic rats showed significant reduction ($P < 0.05$) in MDA levels (27.5%) after peel extract administration.

Manoharan *et al.*, 2009 studied the effect of oral administration of 400mg/kg body weight of ethanolic extract of pomegranate flower extract on plasma MDA levels in streptozocin induced diabetic rats. The extract was administered for the period of 45 days through gavage needle. The study revealed that pomegranate flower extract caused significant reduction in plasma MDA levels (42.4%) in diabetic rats treated with pomegranate flower extract as compared to the diabetic control rats.²¹

Zhang, *et al.*, (2010) studied the antioxidant activity of ethanolic extracts from different parts of pomegranate including its flower, leaf, seed and peel, by adding these into the soybean oil. Estimation of MDA levels and peroxide values revealed that peel extract had highest antioxidant effect among all different parts of pomegranate tested.²²

Ahmed and Ali, (2010) studied the effect of prophylactic administration of ethanolic extract of pomegranate peel on male albino rats that developed nephrotoxicity after administering ferric nitrilotriacetic acid (Fe-NTA) acid in a single dose of 9 mg Fe /kg body weight. At the end of the study, it was revealed that rats administered with prophylactic pomegranate peel extract showed enhanced levels of antioxidant enzymes including GR, CAT and GPx as compared to Fe-NTA treated rats.²³

Ozbek, *et al.*, (2010) studied the antioxidant effect of rosiglitazone against gentamicin induced nephrotoxicity in wistar rats. Administration of rosiglitazone in a single dose of 10 mg/kg/day for the duration of two weeks through gavage caused significant reduction in levels of MDA with concomitant elevation in levels of antioxidant enzymes including catalase (CAT), glutathione peroxidase (GPx) and superoxide dismutase in comparison to the gentamycin (dose; 100 mg/kg daily) treated rats.

CONCLUSION

Pomegranate peel extract is hypoglycemic and hypolipidemic agent in low doses when used alone or in combination with rosiglitazone in type 2 diabetic rats.

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

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Frequency of Deep Vein Thrombosis in Postoperative Obstetrical Patients and Factors Leading To It

Deep Vein
Thrombosis in
Postoperative
Obstetrical
Patients

Nazia Khan¹, Ihsanullah² and Syed Naeemullah³

ABSTRACT

Objective: To determine frequency of deep vein thrombosis in post operative obstetrical patients and factors leading to it.

Study Design: Descriptive / Cross-sectional study.

Place and Duration of Study: This study was conducted at the Department of Gynecology and Obstetrics Fatima Memorial Hospital, Lahore from 17th November 2011 to 16th May 2012.

Patients & Methods: This study comprised 220 cases. All pregnant women, meeting the inclusion criteria were selected from labour room and operation theatre for study after signed the informed consent. The patients were followed in post operative period for any development of deep vein thrombosis (DVT). The patients were assessed for factors leading to the any development of deep vein thrombosis in post operative period.

Results: Total 220 patients were included in the study during the study period. Out of 220 postoperative patients, one patient had deep vein thrombosis after caesarean section ($p>0.05$). Associated risk factors present in this patient were obesity, prolonged surgery and undergoing emergency caesarean section.

Conclusion: The frequency of postoperative deep vein thrombosis is 0.45% in our study which is not different from studies worldwide. Routine screening for DVT after caesarean section is not warranted.

Key Words: Pregnancy, Venous thromboembolism, Deep vein thrombosis, Caesarean section, Thromboprophylaxis

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INTRODUCTION

Deep vein thrombosis remains a common and serious medical condition frequently complicating the post operative recovery of surgical patients or maintaining denovo in patients with recognized risk factors. Thromboembolisms remain a common and serious preventable cause of post operative morbidity and mortality in the western, world. It is estimated in the united state of America that twenty million cases developed of lower extremity DVT occur in USA alone.¹ The overall prevalence of deep veins thrombosis in post-surgical patients is 10-80% depending upon the type of surgery and individual risk factors.² It is generally accepted that the rate of DVT in Asians is very rare, however sufficient data on prevalence of DVT in this population is lacking.

As the caesarean section rate worldwide has risen to 50%³, it means that around one in four pregnancy ending in caesarean section, poses the woman to increased risk of post operative morbidity including risk of thromboembolism. Pulmonary embolism, DVT in pregnancy and puerperium are determining factors for increase in maternal-fetal morbidity and mortality.⁴ There are reports of 0.5 to 2 cases for each 1000 pregnancies.⁵ Some authors have estimated that DVT in pregnant women is five times more frequent than in non pregnant women of same age group.^{6,7} Studies conducted in various centres showed incidence of DVT from 2% to 7.5%.⁸ Most episodes of DVT are clinically asymptomatic and symptomatic events are merely tip of the ice berg.⁹

Royal college of Obstetricians and Gynecologists have issued guidelines for risk assessment of thromboembolism in obstetrics and thromboprophylaxis in post operative period especially after emergency caesarean sections as risk of developing DVT is 5% higher than delivering vaginally.¹⁰ Other factors like excess blood loss and blood transfusions increase risk of venous thromboembolism.¹¹

Keeping in mind that increasing maternal age(>35 years), multiparity and obesity(BMI >30 Kg/m²) increase the risk of developing DVT. The incidence of DVT in our population is increased from 2.7 to 6%.¹² However more data is needed for our population. By

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studying the frequency of DVT in postgraduate obstetrical patients, thromboprophylaxis can be instituted to patients undergoing caesarean section and this life threatening complication can be avoided which can be greatly beneficial for the obstetrical population.

MATERIALS AND METHODS

This cross-sectional descriptive study comprised 220 cases and carried out at Department of Gynaecology and Obstetrics Fatima Memorial Hospital, Lahore from 17th November 2011 to 16th May 2012. All postoperative cases of caesarean section, expected operation time of 45-60 minutes and estimated postoperative hospital stay of 3-4 days were included. Patients on anticoagulation immediately prior to admission, known history of bleeding diathesis, with prolonged prothrombin time and prolonged bleeding and clotting time, single or multiple hemorrhagic episodes within previous 3 months which were unrelated to the surgical procedure, thrombocytopenia, disseminated intravascular coagulation (DIC) and deep vein thrombosis were excluded. Details of mode (emergency or elective LSCS) and duration of surgery was recorded in postoperative period, daily observation for pyrexia and tachycardia, the calf circumference of both lower limbs was made. Patients were instructed on technique of deep breathing and leg exercises especially isometric ankle flexion exercise. All patient received chest physiotherapy on first postoperative day. Duplex scanning of both legs used as definitive test for deep vein thrombosis was done on the 4th post operative day. The patients were followed in post operative period for day development of deep vein thrombosis and were assessed for factors leading to the development of deep vein thrombosis in post operative period. The data was entered into SPSS 16 and analyzed.

RESULTS

There were 36 patients (16.4%) <20 years, 160 patients (72.7%) between 21-30 years while 24 patients (10.9%) between 31-40 yrs with mean age was 25.8±4.34 years (Table 1). According to gravida, 72 patients were primigravida (32.9%), 122 patients (55.7%) between G₂ - G₃ group, 16 patients (7.2%) between G₄ - G₆ group and 10 patients (4.3%) had gravidity more than 6 (Table 2). According to BMI, 74 patients (32.9%) had normal (20-25 kg/m²), 130 patients (59.1%) had overweight (25-30 kb/m²) and 16 patients (7.3%) had obese (>30 kg/m²) with mean BMI was 25.6±2.92 kg/m² (Table 3). According caesarean section, it was seen that the number of patients who had an elective caesarean section was 152 (69.3%) and 68 patients had emergency caesarean section [30.7%] (Table 4). Out of 220 patients, 60 had varicose veins whereas 160 had no varicose veins at the time of admission (Table 5). In this study, 185 surgeries were completed with in 45 minutes (84.3%) while 35 surgeries were completed

after 45 minutes [15.7%] (Table 6). Of all the patients, only one patient (0.45%) had deep vein thrombosis and 219 patients (99.55%) had no deep vein thrombosis. Statistically the difference was significant {P<0.05} (Table 7).

Table No.1: Distribution according to age (n =220)

Age (years)	No.	%
< 20	36	16.4
21 – 30	160	72.7
31 – 40	24	10.9

Table No.2: Distribution according to gravidity (n = 220)

Gravidity	No.	%
Primigravida	72	32.8
G ₂ – G ₃	122	55.4
G ₄ – G ₆	16	7.2
> G ₆	10	4.5

Table No.3: Distribution of patients according to body mass index (n = 220)

BMI (kg/m ²)	No.	%
Normal (20-24.9)	74	33.6
Over weight (25-30.9)	130	59.1
Obese (>30)	16	7.3

Table No.4: Distribution according to nature of caesarean section (n = 220)

Caesarean section	No.	%
Elective	152	69.3
Emergency	68	30.7

Table No.5: Distribution according to presence of varicose veins

Varicose veins	No.	%
Present	60	27.2
Absent	160	72.8

Table No.6: Distribution according to duration of surgery

Duration of surgery	No.	%
< 45 minutes	185	84.3
>45 minutes	35	15.7

Table No.7: Distribution according to development of deep vein thrombosis

DVT	No.	%
Present	1	0.45
Absent	219	99.55

p >0.05

DISCUSSION

The pregnancy and postnatal periods are associated with particularly increased the risk of deep venous thrombosis (DVT) and pulmonary embolism (PE) and developed of thromboembolic disease. Venous thromboembolic disease (VTED) is a leading cause of maternal morbidity, and pulmonary embolus (PE) is the

most common cause of maternal mortality in the developed world.³ Therefore, timely identification of patients with PE and DVT is extremely important. Although the overall risk of a venous thromboembolic event is small, pregnant and postpartum patients have a 5 times greater chance of developing an event as compared with non-pregnant women of similar age.¹³

Numerous studies have examined the incidence and risk factors of venous thromboembolic disease in pregnancy.^{7,14,15} Commonly accepted risk factors predisposing women to venous thrombosis during the puerperal period include obesity (body mass index >30 kg/m²), age over 35 years, multiparity (>3 prior deliveries), personal history of DVT or PE, inherited thrombophilia, surgery or caesarean delivery, smoking, and hormonal therapies.¹⁵ Other associated risk factors include gestational diabetes, placental abruption, and eclampsia.¹⁶

James et al¹⁷ demonstrated the overall incidence of DVT during pregnancy and post partum period to be 1.72 per 1000 deliveries making it much it comparable to the incidence in many other studies conducted as well as that performed by us in our setup. It can hence be concluded that the incidence amongst low risk obstetrical population remains to be almost the same worldwide with little variations amongst the ethnic groups.

Various studies have been done in different region. These various studies to identify the common risk factors involved in development of deep vein thrombosis antenatally as well as post natally.^{17,18}

Among many factors, caesarean section has shown to be one of the leading cause of deep vein thrombosis in postpartum patients as demonstrated by Simpson.²¹ Postnatally women who have had a premature delivery, history of cardiac disease, or caesarean section should be carefully assessed for venous thromboembolism. Black women, women ages 35 or older and pregnant women with certain co morbid medical conditions and obstetric complications appear to be at increased risk of venous thromboembolism disease.²⁰

Postpartum venous thrombosis is said to be 3 to 5 times as frequent as ante partum events and 3 to 16 times more common after caesarean section compared with vaginal normal delivery.¹³ Deep vein thrombosis constitutes almost 80% of cases of venous thromboembolism, and the rest are constituted by pulmonary embolism.⁷ In one study, this risk has been quoted to increase to approximately twenty times in the postpartum period. This is in comparison with our study in which only one patient developed deep vein thrombosis in post operative period [0.45%] (p>0.05).

When we analyzed the risk factors in our study compared with that reported in other studies, we observed that although women in our study have risk factors for VTE (age over 35 years 10.9%, obesity 7.3%, emergency caesarean section 30%, prolonged

operation time>45 minutes 15.7%). In our study we only one case of VTE (risk factors presented, emergency caesarean section, prolonged operation time, obesity, and age>35 years). In our population the most frequent risk factors were emergency caesarean section, and prolonged operation time>45 minutes. This is in comparison with the study performed by Milagros Cruz et al.²²

CONCLUSION

The postpartum period and venous thromboembolism complicating pregnancy is a rare event however, all pregnant women individuals should be considered at risk. Although the all patient might not have the traditional risk factors or might present early in gestation, diagnostic testing should be done immediately on the basis of clinical suspicion especially during postoperative period after caesarean section. It becomes prudent for obstetricians to be vigilant in recognizing and diagnosing deep vein thrombosis for improved patient care.

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

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Laparoscopic Hydrodissection in Empyema of Gall Bladder

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ABSTRACT

Objective: To find out the safety profile of laparoscopic hydrodissection in empyema of gallbladder.

Study Design: Experimental study.

Place and Duration of Study: This study was conducted at the Department of Surgery at Idris Teaching Hospital Sialkot from June 2014 to July 2016.

Materials and Methods: One hundred and fifty patients of empyema of gallbladder were included in this study. All the patients were diagnosed with clinical, sonological and biochemical evidence of cholelithiasis with empyema were included in the study regardless of age and gender.

Laparoscopic hydrodissection was done by standard 4- port technique of empyema of gallbladder was used in all cases. In this technique the adhesions of empyemic gallbladder were removed by throwing water with pressure instead of using scalpel knife in all of the 150 cases. The charts were reviewed, and age, sex, family history of the empyema of gallbladder, date of surgery, surgery type, duration of surgery, post operative complications, stay in the hospital, were recorded. Patients follow up is also recorded. The results were analysed on SPSS version 10. A well informed written consent was taken from each patient prior to surgery.

Results: In our study the incidence of empyema of gallbladder disease was found maximum at the age of 30-35 years (58%) 87 cases and minimum at the age of 46-50 years (1.3%) 2 cases. Empyema of gallbladder disease was (59.3%) 89 cases in females as compared to male (40.7%) 61 cases. The disease was (42%-47.3%) 63-71 cases in middle and high gentry class as compared to low socio economic status (10.7%) 16 cases. The urban Population had (64.7%) 97 cases as compared to rural area (35.3%) 53 cases. In our study the incidence of the disease was (62%) 93 cases from diabetic patients as compared to non diabetic patients (38%) 57 cases. Fatty people had (79.3%) 119 cases of empyema gallbladder as compared to non fatty patients (20.7%) 31 cases. It was also observed that empyema of gallbladder was higher (59.3%) 89 cases in people taking fast food as compared to patients taking simple food (40.7%) 61 cases. Majority of the patients were operated between 65-95 minutes. The overall rate of post operative complications was (20%) 30 cases in successfully completed laparoscopic hydro dissection. Majority of the patients (80%) 120 cases with successful laparoscopic hydro dissection were discharged within 48-96 hours. In (10.5%) 7 patients, the stay in the hospital was extended 4-7 days.

Conclusion: Laparoscopic hydro dissection of empyema of gallbladder can be performed keeping in mind a slightly increased risk of complications even in the best hands. However the experience of the surgeon plays a key role in the overall outcome.

Keywords: Empyema gall bladder, laparoscopic hydrodissection, morbidity, safety

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INTRODUCTION

The laparoscopic cholecystectomy (LC) has dramatically changed the outlook of patients with symptomatic gallstone disease. Empyema of the gallbladder is a potentially fatal complication of gallstones.

It is characterized by suppuration superimposed on acute cholecystitis. The clinical presentation of this disease is often difficult to distinguish from acute Cholecystitis¹. Features suggesting diagnosis and seriousness of this disease are few². It used to be a contraindication for LC because of fear of life-threatening complications³⁻⁷. It is also considered one of the commonest reasons for the conversion⁸. Increasing experience and technology in the field of laparoscopic surgery has brought a significant change and a number of studies have reported LC to be safe and effective option in acute cholecystitis and associated conditions like empyema of the gallbladder⁹⁻¹³. There can be various reasons and factors which can however, lead to conversion¹⁴. Obscured local anatomy, uncontrolled bleeding and damage to nearby vital structures are the common factors

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responsible for conversion¹⁵. Despite various encouraging reports, the role of laparoscopic surgery in such acute conditions is still under evaluation. This study aimed to find out safety and outcome of laparoscopic hydro dissection in empyema gallbladder.

MATERIALS AND METHODS

One hundred and fifty patients of empyema of gallbladder were included in this prospective experimental study in the department of surgery at Idris Teaching Hospital Sialkot during June 2014 to July 2016. All the patients were diagnosed with clinical, sonological and biochemical evidence of cholelithiasis with empyema were included in the study regardless of age and gender.

Laparoscopic hydrodissection was done by standard 4- port technique of empyema of gallbladder was used in all cases. In this technique the adhesions of empyemic gallbladder were removed by throwing water with pressure instead of using scalpel knife in all of the 150 cases.

The charts were reviewed, and age, sex, family history of the empyema of gallbladder, date of surgery, surgery type, duration of surgery, post operative complications, stay in the hospital, were recorded. Patients follow up is also recorded. The results were analyzed on SPSS version 10. A well informed written consent was taken from each patient prior to surgery.

Inclusion criteria: All patients with clinical, sonological and biochemical evidence of cholelithiasis with empyema were included in the study regardless of age and gender.

Exclusion criteria: Patients with major medical problems in which pneumoperitoneum was thought to be unsafe and those with overwhelming sepsis were excluded from the study

RESULTS

In our study the incidence of empyema of gallbladder disease was found maximum at the age of 30-35 years (58%) 87 cases and minimum at the age of 46 and above years (1.3%) 02 cases as shown in the table 1.

Empyema of gallbladder disease was (59.3%) 89 cases in females as compared to male (40.7%) 61 cases as shown in table no.2. The disease was (42%-47.3%) 63-71 cases in middle and high gentry class as compared to low socio economic status (10.7%) 16 cases as shown in table no.3. The urban Population had (64.7%) 97 cases as compared to rural area (35.3%) 53 cases as shown in the table no.4. In our study the incidence of the disease was (62%) 93 cases from diabetic patients as compared to non diabetic patients (38%) 57 cases as shown in table no.5. Fatty people had (79.3%) 119 cases of empyema gallbladder as compared to non fatty patients (20.7%) 31 cases as shown in table no.6. It was also observed that empyema of gallbladder was higher (59.3%) 89 cases in people taking fast food as

compared to patients taking simple food (40.7%) 61 cases as shown in table 7.

Table No. 1: Age distribution in laproscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Age	Cases	Percentage
01	30-35	87	58
02	36-40	36	24
03	41-45	25	16.7
04	46 and above	02	1.3
	Total	150	100

Table No 2: Sex distribution in laproscopic hydro dissection in Empyema of Gall Bladder

Sr. No	Sex	Cases	Percentage
01	Male	61	40.7
02	Female	89	59.3
	Total	150	100

Table No 3: Socio economic status distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Socio economic status	Cases	Percentage
01	High	71	47.3
02	Middle	63	42
03	Low	16	10.7
	Total	150	100

Table No.4: Area distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Area	Cases	Percentage
01	Urban	97	64.7
02	Rural	53	35.3
	Total	150	100

Table No.5: Diabetic/Non Diabetic distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Diabetic/Non Diabetic	Cases	Percentage
01	Diabetic	93	62
02	Non Diabetic	57	38
	Total	150	100

Table No.6: Fatty/ Non Fatty Patients distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No	Fatty/ Non Fatty	Cases	Percentage
01	Fatty	119	79.3
02	Non Fatty	31	20.7
	Total	150	100

Majority of the patients were operated between 65-95 minutes. The overall rate of post operative complications was (20%) 30 cases in successfully

completed laparoscopic hydro dissection. Majority of the patients (80%) 120 cases with successful laparoscopic hydro dissection were discharged within 48-96 hours. In (10.5%) 7 patients, the stay in the hospital was extended 5-7 days.

Table No.7: Fast Food/ Simple Food distribution in laparoscopic hydro dissection in Empyema of Gall Bladder

Sr. No.	Fast Food/ Simple Food	Cases	Percentage
01	Fast Food	89	59.3
02	Simple Food	61	40.7
	Total	150	100

DISCUSSION

Laparoscopic cholecystectomy (LC) has become a preferred and acceptable choice even in the most difficult situations associated with complicated gallstone disease¹⁸. The earlier arguments¹⁹ as to its safety and efficacy are being answered by a number of encouraging reports⁹⁻¹⁷ and more and more laparoscopic surgeons are persuaded to perform LC in acute cholecystitis as suggested by Hunter²⁰ "to get it while its Hot". Very few reports have specifically assessed safety of LC in empyema of the gallbladder. This study presents the details of 150 laparoscopic hydro dissection performed in empyema gallbladder within 24h of the admission to assess the safety and suitability of laparoscopic hydro dissection approach in this condition. The difficulties that we encountered in dissection in the area of Calot's triangle are more or less the same as mentioned by other similar studies. The nature of the study population must also be known as suggested by Gouma²¹. The study population in this report is mainly from high and middle socio-economic background, coming from urban areas of Sialkot as shown in table 4. The ratio of disease was double in diabetic patients as compared to non diabetic patients as shown in table 5. The operation was technically difficult due to fibrosis and firm adhesions. These are the common factors producing distortion of local anatomy²²⁻²³ clear display and identification of the anatomy of Calot's triangle before cutting or applying clips. The laparoscopic hydro dissection was preceded with extreme caution and gentle separation of the adhesion was done. Duodenum was identified and be gently pushed down to avoid injury. The use of diathermy was minimal to ensure patients safety. We decompressed the distended gallbladder before proceeding to Calot's triangle to facilitate dissection. Tseng et al²⁴, have also favored this procedure to make surgery safe and easier. Another way of handling such life threatening situations is to perform subtotal cholecystectomy after removal of all the stones to ensure safety of patients life instead of continuing dissection in the frozen Calot's triangle with totally

obscured anatomy. The rate of major complications is not significant in current study as to preclude the laparoscopic hydro dissection approach in this condition but there should always be a word of caution while operating on such difficult conditions. This is consistent with the findings of Hobbs et al²⁵ claiming that increased risk of complications with LC has stabilized. There is always a risk of common bile duct (CBD) injury if the operating surgeon is impatient and anatomy of the field is not clearly displayed before clipping and cutting. Undue use of diathermy is also a major factor in causing CBD injury and should be avoided in the area of Calot's triangle. Both did well in the postoperative period. Laparoscopic hydro dissection in empyema has shown less morbidity and no mortality in our study. The analysis of our study and literature review has shown that this procedure was associated with less intraoperative blood loss, shorter hospital stay, less wound infection and less postoperative pain.

CONCLUSION

Laparoscopic hydro dissection is a safe and acceptable option in empyema of gallbladder. There are, however, significant technical difficulties due to edema, adhesions and distorted anatomy in the area of Calot's triangle. The experience of the surgeon plays a vital role.

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

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Significance and Outcome of Performing Upper GI Endoscopy and Colonoscopy for Paediatric GI Referrals

Iqtadar Seerat¹, Muhammad Arshad Alvi¹ and Majeed Ullah Buzdar²

ABSTRACT

Objective: To diagnose treatable gastrointestinal diseases with help of upper GI endoscopy and colonoscopy.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at the Paediatric Gastroenterology, Hepatology & Nutrition, King Faisal Hospital & Research Centre, Jeddah, Kingdom of Saudi Arabia from March, 2016- September, 2016.

Materials and Methods: Twenty children were recruited in this study with history of GI symptoms of chronic diarrhoea with and without blood, vomiting and abdominal pain. The referrals were made from small cities of Kingdom of Saudi Arabia to our tertiary centre.

Results: Out of 20 referrals we were able to confirm 2 cases (10%) of coeliac disease, 5 cases (25%) of crohn's disease, 3 cases (15%) of helicobacter pylori gastritis, 1 case (5%) of graft versus host disease (GVHD), 1 case (5%) of acute gastritis, 1 case (5%) of intestinal lymphangiectasia (IL), 4 cases (20%) of gastro-oesophageal reflux disease (GORD) and in 3 patients (15%) no pathology was found.

Conclusion: We understand that clinicians at local level spent too much time before making these referrals. But by investigating them promptly especially with upper GI endoscopy and colonoscopy majority of them got diagnosed and managed appropriately.

Key Words: Upper GI endoscopy, Colonoscopy, GI diseases

Citation of article: Seerat I, Alvi MA, Buzdar MU. Significance and Outcome of Performing Upper GI Endoscopy and Colonoscopy for Paediatric GI Referrals. Med Forum 2016;27(12):90-93.

INTRODUCTION

Diagnosis and treatment of certain GI diseases in children with help of upper GI endoscopy and colonoscopy is of paramount importance to provide good care.¹ Gastrointestinal endoscopy is now recognised a major diagnostic tool in children. The diagnostic and therapeutic paediatric endoscopic procedures now provide standard care.²

In special circumstances it is extremely difficult to reach the final diagnosis without performing highly skilled procedures like upper GI endoscopy and colonoscopy. This is difficult in remote areas of the developing countries due to lack of resources, skills and awareness among the local health professionals.

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This study was conducted to determine the accurate diagnosis and then to institute the appropriate treatment for GI referrals from small cities to our tertiary centre.

Twenty patients were referred to our tertiary centre who were managed at local level for years without any significant improvement. After our initial evaluation with complete clinical history and examination, appropriate laboratory investigations were requested. Subsequently we were able to confirm various GI diseases with help of upper GI endoscopy and colonoscopy.

MATERIALS AND METHODS

This observational / descriptive study was carried out for the period starting from March, 2016- September, 2016 for twenty children who were referred to our tertiary centre from small cities in Kingdom of Saudi Arabia. The data was collected from the ICIS used in hospital power chart system. The data was presented in form of a pie chart and a table.

RESULTS

The data out of twenty referrals five have had history of bloody diarrhoea associated with abdominal pain were diagnosed with Crohn's disease by performing both upper GI endoscopy and colonoscopy. A couple of

patients with history of chronic diarrhoea were diagnosed with coeliac disease by positive coeliac screen and upper GI endoscopy. Out of eleven children with history of intermittent vomiting and recurrent abdominal pain three were diagnosed with helicobacter pylori gastritis, four had gastro-oesophageal reflux disease (GORD) and one patient had acute gastritis. We were unable to make any diagnosis in three patients. This group of three patients is undergoing further investigations to delineate the cause of their symptoms. One patient with history of post cardiac surgery for

complex congenital heart disease presented to us with chronic diarrhoea was subsequently diagnosed with intestinal lymphangiectasia (IL). One child was referred with history of post bone marrow transplantation due to Fanconi anaemia and chronic persistent diarrhoea turned out to be a case of graft versus host disease (GVHD). The demographic data (age, sex, symptoms, past medical history and diagnosis) of patients are mentioned in table 1. The figure 1 explains the spectrum of gastrointestinal diseases confirmed by upper GI endoscopy and colonoscopy.

Table No.1: Demographic data of 17 patients with confirmed GI diseases

	Age	Sex	GI Symptoms	Past medical history	Diagnosis
1	8 years	F	Vomiting	Nil	GORD
2	7 years	F	Vomiting	Epilepsy	GORD
3	7 years	M	Vomiting	ADHD	GORD
4	4 years	F	Vomiting	Nil	GORD
5	2 years	M	Chronic diarrhoea	Anaemia	Coeliac disease
6	6 years	M	Chronic diarrhoea	Autism	Coeliac disease
7	9 years	M	Abdominal pain, vomiting	Developmental delay	H. Pylori gastritis
8	7 years	M	Abdominal pain, vomiting	Autism	H. Pylori gastritis
9	9 years	F	Abdominal pain, vomiting	Nil	H. Pylori gastritis
10	10 years	M	Abdominal pain, vomiting	Rhabdomyosarcoma	Acute gastritis
11	9 years	F	Chronic diarrhoea	Post cardiac surgery	IL
12	6 years	M	Chronic diarrhoea	Post BMT, Fanconi anaemia	GVHD
13	9 years	F	Bloody diarrhoea, abdominal pain	Nil	Crohn's disease
14	11 years	M	Bloody diarrhoea, abdominal pain	Nil	Crohn's disease
15	6 years	F	Bloody diarrhoea, abdominal pain	Nil	Crohn's disease
16	8 years	F	Bloody diarrhoea, abdominal pain	Nil	Crohn's disease
17	11 years	M	Bloody diarrhoea, abdominal pain	Nil	Crohn's disease

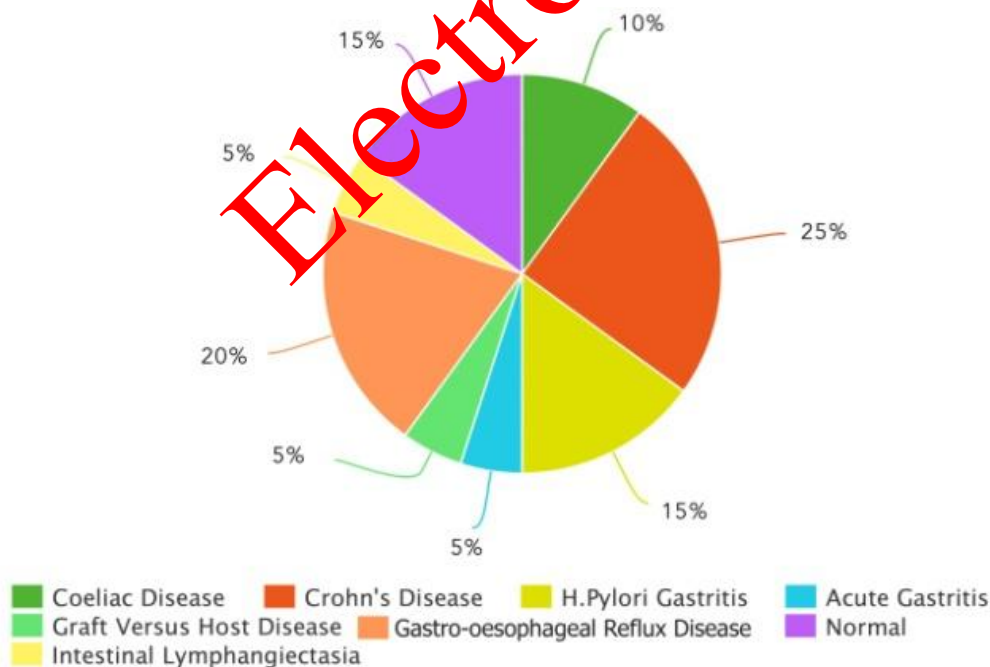


Figure No.1: Spectrum of GI disease confirmed by upper GI endoscopy & colonoscopy

DISCUSSION

Gastro-oesophageal reflux disease also known as acid reflux, is a long term condition where stomach contents come back up into the oesophagus resulting in either symptoms or complications³. Symptoms include the taste of acid in the back of the mouth, heartburn, bad breath, chest pain, vomiting, breathing problems, and dental decay. Complications include oesophagitis, oesophageal strictures, and Barrett's oesophagus. Our patients responded well to omeprazole.

Coeliac disease is the most common genetically related food intolerance worldwide.^{4,5,6} Coeliac disease is a multifactorial, autoimmune disorder that occurs in genetically susceptible individuals. It is triggered by a well-identified environmental factor (gluten and related prolamins present in wheat, rye, and barley). The disease primarily affects the small intestine, where it progressively leads to flattening of the small intestinal mucosa. As expected our patients with coeliac disease became asymptomatic with help of gluten free diet.

Inflammatory bowel disease (IBD) is an idiopathic disease caused by a dysregulated immune response to host intestinal microflora.^{7,8} The two major types of inflammatory bowel disease are ulcerative colitis (UC), which is limited to the colon, and Crohn disease (CD), which can affect any segment of the gastrointestinal tract from the mouth to the anus, involves "skip lesions," and is transmural. In our data patients of Crohn's disease have moderate to severe disease who were treated with steroids in the induction phase. An elemental/polymeric diet is not readily available in Saudi Arabia. All patients are in remission and take azathioprine as maintenance therapy.

Helicobacter pylori is a gram-negative bacillus responsible for one of the most common infections found in humans worldwide.^{9,10,11} Warren and Marshall first cultured and identified the organism as *Campylobacter pylori* in 1982. By 1989, it was renamed and recognized to be associated closely with antral gastritis (gastric and duodenal ulcers in adults and children). Our patients responded well to two weeks course of triple eradication medications (omeprazole, clarithromycin and amoxicillin).

The graft versus host disease has been treated by our oncology colleagues.^{12,13} The patient with intestinal lymphangiectasia has been doing reasonably well while being on fat free diet with medium chain triglycerides.^{14,15} This study clearly showed that children with persistent GI symptoms need early endoscopic evaluation for diagnosis and management.^{16,17,18,19,20}

CONCLUSION

The GI diseases in children like gastro-oesophageal reflux disease, coeliac disease, *Helicobacter pylori* gastritis and inflammatory bowel disease etc. should be

diagnosed and managed promptly with help of endoscopy and colonoscopy. It requires an efficient and robust system in remote areas by educating parents and health professionals to speed up the process of referrals.

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

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Prevalence of Hysterectomy in Women in Sialkot

Ashba Anwar¹, Anila Ansar² and Neelam Saba¹

ABSTRACT

Objectives: To study the Prevalence of hysterectomy in women in Sialkot.

Study Design: Observational / descriptive study.

Place and Duration of Study: This study was conducted at the Department of Obstetrics and Gynecology, Idris Teaching Hospital Sialkot and Islam Teaching Hospital Sialkot from January 2014 to August 2016.

Materials and Methods: Seventy five women with hysterectomy were included in this retrospective study during January 2014 to August 2016 at Idris Teaching Hospital Sialkot and Islam Teaching Hospital Sialkot. Performa was designed to record age, area; type of hysterectomy (vaginal or abdominal) and indications of hysterectomy. The well informed consent was taken prior to operation from every patient. Permission of ethical committee was also taken. The results were analyzed on SPSS version 10.

Results: The prevalence of hysterectomy was maximum (41.3%) n=31 at the age of 38 – 47 years and minimum (9.3%) n=07 at the age of 18-27 years. The women from rural area had almost double prevalence (65.3%) n= 49 as compared to women of urban area (34.7%) n=26. The prevalence of abdominal hysterectomy in women was much higher (81.3%) n= 61 as compared to vaginal hysterectomy (18.7%) n= 14. In case of indications of hysterectomy in women was maximum in dysfunctional uterine bleeding (44%) n= 33 as compared to cancer of uterus and ovaries and genital prolapsed (13.3%) n= 10 and (14.7%) n= 11 respectively.

Key Words: Prevalence, Hysterectomy, Vaginal or Abdominal

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INTRODUCTION

The first abdominal hysterectomy was probably performed in England in 1843 (unplanned); the first vaginal hysterectomy about 120 AD in Ephesus¹. Nowadays, hysterectomy is one of the most common gynaecological procedures in many countries. In addition to abdominal and vaginal hysterectomies, a laparoscopic approach is possible³. Indications for a hysterectomy are cancer of the uterus and the ovaries and non-malignant diseases such as fibroids, genital prolapse, and dysfunctional uterine bleeding⁴. Although hysterectomy is a therapeutic measure, the women affected may also perceive it as the loss of an important organ and may be concerned about potential adverse outcomes^{4,5}, especially in case of a simultaneously performed oophorectomy or when they are still premenopausal.

In addition to the usual operation risks, such as post-operative bleeding, infections and anaesthesiological complications, there can be an earlier onset of menopause in premenopausal women after hysterectomy, even if there was no simultaneous oophorectomy performed⁶. International studies show that altogether, quality of life improves after the operation and that, in general, there are no negative effects on psychological health⁷⁻¹⁰. However, since some women feel that their health is impaired after hysterectomy⁹⁻¹³ elective hysterectomies should only be performed after carefully weighing the benefits and risks and offering women additional support if necessary.

MATERIALS AND METHODS

This study was conducted at the Department of Obstetrics and Gynecology, Idris Teaching Hospital Sialkot and Islam Teaching Hospital Sialkot from January 2014 to August 2016. Seventy five women with hysterectomy were included in this retrospective study during January 2014 to August 2016 at Idris Teaching Hospital Sialkot and Islam Teaching Hospital Sialkot. Performa was designed to record age, area; type of hysterectomy (vaginal or abdominal) and indications of hysterectomy. The well informed consent was taken prior to operation from every patient. Permission of ethical committee was also taken. The results were analyzed on SPSS version 10

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RESULTS

The prevalence of hysterectomy was maximum (41.3%) n=31 at the age of 38 – 47 years and minimum (9.3%) n=07 at the age of 18-27 years as shown in table 1. The women from rural area had almost double prevalence (65.3%) n= 49 as compared to women of urban area (34.7%) n=26 as shown in table 2. The prevalence of abdominal hysterectomy in women was much higher (81.3%) n=61 as compared to vaginal hysterectomy (18.7%) n=14 as shown in table 3. In case of indications of hysterectomy in women was maximum in dysfunctional uterine bleeding (44%) n=33 as compared to cancer of uterus and ovaries and genital prolapsed (13.3%) n=10 and (14.7%) n=11 respectively as shown in table 4.

Table No. 1: Age distribution in Prevalence of hysterectomy in women

Sr No	Age (Years)	Cases	Percentage
1	18-27	07	9.3%
2	28-37	16	21.3%
3	38-47	31	41.3%
4	48-57	21	28.1%
	Total	75	100%

Table No. 2: Area distribution in Prevalence of hysterectomy in women

Sr No	Area	Cases	Percentage
1	Urban	26	34.7%
2	Rural	49	65.3%
	Total	75	100%

Table No. 3: Type of hysterectomy in Prevalence of hysterectomy in women

Sr No	Type of hysterectomy	Cases	Percentage
1	Abdominal	61	81.3%
2	Vaginal	14	18.7%
	Total	75	100%

Table No. 4: Indications of hysterectomy in Prevalence of hysterectomy in women

Sr No	Indications	Cases	Percentage
1	Cancer of the uterus and the ovaries	10	13.3%
2	Fibroids of the uterus	21	28.0%
3	Genital Prolapsed	11	14.7%
4	Dysfunctional Uterine Bleeding	33	44.0%
	Total	75	100%

DISCUSSION

This almost 3 year retrospective study covered all hysterectomies performed in obstetrics and gynaecology department of Idris Teaching Hospital

Sialkot and Islam Teaching Hospital Sialkot. In this study series the proportion of patients having abdominal hysterectomies was higher than vaginal hysterectomies which are almost similar to the studies conducted by Deeksha Pandey et al and Simi Fayyaz^{10,11}. The peak age for procedure in our study was the fifth decade (41-50 years) and this has been documented in many studies.^{2,13-15} Most of our patients were multiparaous (P4-6 and above). This finding has been reported by Qamar-ur-Nisa et al and Samaila Modupeola OA, Adesiyun AG et al.^{12,13} The nulliparous women who had hysterectomy was 49 years old and had presented with severe menorrhagia leading to extreme anaemia. Dysfunctional uterine bleeding was the most common indication for abdominal hysterectomy (22.92%) which also correlates well with other local studies.^{11,12} Utero vaginal prolapse was seen in 26.04% of patients and all patients with this pathology were operated through vaginal route.

It is estimated that approx. 90% of all hysterectomies are performed for benign diseases of the female genital organs¹⁹.

In our study Cancer of the uterus and the ovaries was 13.3% indication for hysterectomy in women which coincides with other studies. The prevalence of hysterectomy was maximum (41.3%) n=31 at the age of 38 – 47 years and minimum (9.3%) n=07 at the age of (18-27) years which was almost similar to the many studies by other authors^{2,13-15}. The women from rural area had almost double prevalence (65.3%) n=49 as compared to women of urban area (34.7%) n=26. The prevalence of abdominal hysterectomy in women was much higher (81.3%) n=61 as compared to vaginal hysterectomy (18.7%) n=14. Which correlates with the results of samina jadoon et al¹², Deeksha Pandey et al and Simi Fayyaz.^{10,11} Dysfunctional uterine bleeding was the most common indication for abdominal hysterectomy (44%) which also correlates well with other local studies^{11,12}. Utero vaginal prolapse was seen in (14.7%) of patients and all patients with this pathology were operated through vaginal route, which correlates with the study of samina jadoon et.al¹⁵. Incidence of visceral damage reported in the literature and various international studies showed no significant difference to our study. Vaginal hysterectomy is being advocated in the literature due to fewer complications which is also observed in our audit but this could be due to difference in pathology apart from surgical approach¹⁹.

CONCLUSION

Abdominal hysterectomy was the most commonly performed gynaecological procedure for many indications. Patient quality of care and better outcome can be improved by advocating skilled and vigorous training for vaginal hysterectomy and latter for laparoscopic assisted vaginal hysterectomy (LAVH).

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

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Corrigendum

Conclusion of article “**Surgical Correction of Grown Up Tetralogy of Fallot**” authors

1. Muhammad Musharaf 2. Iqbal Hussain Pathan
3. Muhammad Jawad 4. Faryal Akber Jalbani printed at **page 73** in the *Med Forum* Vol. 27 No.11 (**November, 2016**) may be read as;

“Our data emphasize that complete repair of Tetralogy Of Fallot is feasible in older patients but carries increased operative risk due to post operation bleeding, right ventricular dysfunction and Dysrhythmias. Survivors have frequent improvement in NYHA functional class as well as social status; however, economic productivity is difficult to commit as our follow, we believe is insufficient”

Editor

Author Index January to December 2016**Azhar Masud Bhatti**

Editor in Chief

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