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Editorial

Pollution and our Homeland

Mohsin Masud Jan
Editor

Pollution is a major environmental problem in most of the developing as well as the developed countries. Most of these countries such as the U.S have been quite successful in solving these problems by passing out certain environmental laws and producing alternatives to such sources which cause a lot of pollution such as coal and oil power stations. There are also laws which make sure that the waste from the industries is being disposed off correctly and is not in any way harmful to the environment. However in Pakistan pollution problems have been rising since the country's inception. Very few people have shown any concern about the negative effects of pollution on themselves as well as their environment. Hence this problem is increasing day by day which may lead in the destruction of our natural environment as well as our own. In Pakistan there are three major sources of pollution:

1. Air Pollution: in Pakistan the most common source of air pollution is mainly vehicles whose exhaust fumes pollute the air. Unlike other developed countries where there are catalytic converters and efficient vehicles which may cause less pollution, the situation in Pakistan is totally topsy-turvy. As most of the people are poor they do not have enough money to repair or spend money on their vehicles so that they can become environmentally friendly. Even car manufacturers do not make environmentally friendlier cars and the people are forced to buy these cars. More fuel is burned as most of the roads in Pakistan are broken and there is a lot of traffic. Many industries in big cities such as Karachi and Lahore give out harmful pollutants such as sulphur dioxide and carbon monoxide. The government and the authorities take little concern about these industries. As a result of this the sky of Lahore and Karachi is covered with thick smog .This may lead to many respiratory diseases and may also be harmful to the animals living in such places.
2. Water Pollution: this is a major problem in Pakistan. There are many sources of water pollution in Pakistan. Most of them are found in Karachi as it is an area of industries. Although it is a government policy to filter the industrial water and then release it into the sea many industries here are dumping contaminated water in seas thereby increasing the threat ofextinction of marine life as well as polluting the water. Almost the whole of city's sewerage is dumped into rivers and the sea. As a result of this Karachi is facing many problems in the access of clean water and most parts of the city are still without water. The oil spill incident has increased the amount of pollution in the sea as well as has caused most of the beaches to be polluted. It is said that the oil spill disaster from Tasman Spirit has killed hundreds and thousands of fishes as well as destroyed much of the marine life. It has also caused eye infections and respiratory problems to those living near the sea. Further leakages in pipelines have polluted the clean water which we have so little of.
3. Land Pollution: As Pakistan is not a rich country, it does not have enough money to spend on waste disposal systems. As a result most of the householdand other waste is usually thrown away on empty plots next to the houses and is then burned which may be harmful to the people living in the area. Only less than 5% of the waste is recycled and most of it is disposed offdirectly on the ground. There are only a few garbage cans along the roads so people living far away have to dispose off their waste somewhere else. This attracts flies which then spread diseases. Apart from this, the rubbish thrown would disintegrate in a 1000 years from now. Hence an increase in land pollution may in turn slowly destroy our natural environment which is already at risk.

As the world is incessantly changing, there are many attributes which are leading towards a prosperous life but on the contrary, some problems are spreading of great magnitude; one of them is pollution.

Pakistan is one of the developing countries which are sustaining the pollution problem.Traffic congestion is one of the main causes of air pollution. The usage of old transports is ruining the situation. No prevailing laws are strictly implemented, as a result, factories exude their smoke into the air. Simultaneously, wasted poisonous substances are excreted in the water of rivers and lakes which is causing water pollution.

Pollution in Pakistan is persistently increasing and on the other hand, healthy environmental policies are not on the priority list, resulting in the spread of disease. The Government should make substantial environmental policies and should implement them rigorously. Awareness campaigns among people should be executed to educate them about their health and climate. So that in future, we may able to see our country with salubrious environment.

Original Article

PCOD

To See the Role of Metformin in Decreasing Hyperinsulinemia and Body Weight and Presentation of Poly Cystic Ovarian Disease

Razia Tariq Qureshi[1], Asma Jabeen[2] and Afra Rehman[1]

ABSTRACT

Objective: The objective of this study is to evaluate the role of metformin in decreasing hyperinsulinemia and body weight in our population and see the pattern of presentation of PCOD

Study Design: Observational / Descriptive study.

Place and Duration of Study: This descriptive study was held in the Gynecology Department of Peoples University of Medical and Health Science, Nawabshah Pakistan from 2nd Jan 2013 to Nov 2014.

Materials and Methods: Overall 329 cases satisfying the inclusion criteria were incorporated in the study. Criteria for inclusion were founded upon presence on U/S with two or further of the given criteria like hyperandrogenism, hirsutism, and oligomenorrhea and proportion of reversed LH: FSH.

After receiving well-informed consent, demographic data and comprehensive history were recorded on self-created questionnaire. A comprehensive analysis was conducted. Relevant analyzes were made and metformin was initialized with a dosage of 250 milligram s.i.d. (1/day) in starting then step by step adjusted to 500-milligram t.i.d. (thrice/day) for six months. Weight loss was promoted through exercise and diet. Cases were evaluated later than 6 months to analyze their serum fasting insulin and change in BMI. Statistical analysis was carried out by SPSS V.17.0. P value less than 0.05 taken significant after applying the paired t test and Chi-square test.

Results: Total 335 women were included in the study, but six patients had lost follow-up. Complete data was available for 329 patients, which is evaluated. Most common presentation of these patients with PCOD was oligomenorrhea which is seen in 253 (76.89%) patients. Mean serum fasting insulin before treatment was 23.47 micro U/ ml. After six months treatment with metformin, it decreases to 20.78 micro U/ ml (P=<0.001) . Mean body weight before treatment was 69.4 kg and after treatment, it was 68.8kg (P= 0.6167) .

Conclusion: Metformin was a useful treatment in decreasing the level of insulin. Further large sample size studies are required.

Key Words: PCOD, metformin, insulin level

Citation of article: Qureshi RT, Jabeen A, Rehman A, To See the Role of Metformin in Decreasing Hyperinsulinemia and Body Weight and Presentation of PCOD. Med Forum 2016;27(4):2-4.

INTRODUCTION

Poly Cystic Ovarian Disease (PCOD) is a heterogeneous and prevalent state affecting 6% to 10% reproductive elderly females as well as 35% to 40% infertile females[1,2]. It is the commonest source of chronic ovulation[1,3,4]. The major current progress in the PCOD definition was acknowledged by PCOD consensus workshop in Rotterdam [5]. It was agreed by a workshop that 2 of following 3 criteria were needed so as to diagnose condition later than the exclusion of other androgen excess causes.

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These 3 criteria were; 1. An ovulation and/or oligo. 2. Biochemical and/or clinical hyperandrogenism signs. 3. Morphology of polycystic ovarian on U/S scan, described as the occurrence for ten or in the every ovary additional follicles (for the diagnosis only single ovary is adequate) that measure about 2-8 millimeters in diameter as well as for raised volume of ovarian (>10 ml). The clinical aspects in PCOD generally vary from without symptoms to obesity, hirsutism, menstrual abnormalities, acne & subfertility [6]. In PCOD biochemical modifications are a rise in LH level, U-turn of FSH/ LH proportion as well as in a few cases can possibly be increased levels of prolactin as well as testosterone. Transvaginal ultrasonography is valuable to diagnose PCOD. This syndrome, a complex disorder with manifold components, together with cardiovascular, metabolic and reproductive symptoms has long-standing implications throughout the life [7]. PCOD corresponds with the metabolic syndrome, marked with insulin resistance, hypertension, and dyslipidemia, which is related with raised probabilities for cardiovascular disease subsequently in life [8]. The relationship of resistance of insulin causative to

ovulation has caused fresh and progressing treatment of managing insulin sensitizing agents to females having PCOD so as to re-establish fertility as well as ovulation [9].

The relationship of PCODS is associated with hyperinsulinemia, the resistance of insulin and hyperandrogenemia are a significant element in reproductive abnormality[10,11]. Insulin resistance is the cause of metabolic disease which carries multisystem complications throughout the life span. Promoting the sensitivity of insulin by means of both lifestyle modification as well as appropriate treatment can upgrade these abnormalities. Hence, early diagnosis and management should be offered to women having PCOD. The purpose of this study is to assess metformin role in decreasing hyperinsulinemia and body weight in our population and see the clinical pattern of PCOD.

MATERIALS AND METHODS

This **o**bservational / descriptive study was performed in gynecology department of People University of Medical and Health Sciences Nawabshah, Pakistan from 2nd Jan 2013 to till Nov 2014. Overall 329 patients who were satisfying the criteria of inclusion were incorporated in this study. PCOD presentation was carried out on ultrasound with two or more of the given criteria like hyperandrogenism, hirsutism, and oligomenorrhea as well as reversed ratio of FSH: LH.

Hyperinsulinemia is defined as fasting serum insulin level >/=20 micro U/ml. weight in Kg and fasting blood sugar was documented. Females with decreased function of the kidney (creatinine >1.5) were not included due to the risk of lactic acidosis with metformin. After receiving well-informed consent, demographic data and comprehensive history were recorded on the self-written questionnaire. A comprehensive examination was conducted in each patient with BMI calculation. Applicable investigations were held and metformin was initialized with a dosage of 250 milligram s.i.d. (Latin: Semel in di; meaning 1 time/day) in starting then step by step adjusted to 500-milligram t.i.d. (Latin: ter in die; meaning thrice/day) for six months. Weight loss was promoted through exercise and diet. Patients were assessed later than 6 months for analyzing their serum fasting insulin and change in BMI. Statistical analysis was made by SPSS V.17.0 Paired t test and Chi-square test applied where suitable. P value below 0.05 was considered significant statistically.

RESULTS

Overall 335 women were incorporated in the study, but six patients had lost follow-up. Complete data was available for 329 patients, which is evaluated.

Most common presentation of these patients with PCOD was oligomenorrhea which is seen in 253 (76.89%) patients (Table 1).

Mean serum fasting insulin before treatment was 23.47 micro U/ ml. After six months treatment with metformin, it decreases to 20.78 micro U/ ml (P=<0.001) (Table 2).

Mean body weight before treatment was 69.4 kg and after treatment, it was 68.8kg (P= 0.6167) (Table 3).

Table No.1: Presentation of patients with PCODS n=329

Presentation	Frequency	Percentage
oligomenorrhea	253	76.89%
Hypomenorrhoea	84	25.53%
Amenorrhoea	67	20.36
Subfertility	53	16.10
Hirsutism	46	13.98
Weight gain	42	12.76

Table No.2: Changes in serum insulin levels after metformin therapy n= 329

Serum Insulin	Mean	95% CI	Standard Deviation	Standard Error of mean	P-value
Insulin before treatment	23.47	23.[illegible]24.7	0.9930	0.07199	P < 0.001
Insulin after treatment	20.7[illegible]	19.56-21.25	0.8480		
Difference	-2.69	-2.83 to -2.54	1.23		

Table No.3: Changing in body weight after metformin therapy n=329

Body Weight	Mean	95% CI for mean	Standard Deviation	Result of paired t- test
Body weight before treatment	69.4	67.3 – 77.8	13.2	P= 0.6167
Body weight after treatment	68.8	66.5 – 71.6	12.4	
Difference	0.58	-2.46 to -1.46	1.3	

DISCUSSION

In this study, we discussed the metformin effect over hyperinsulinemia as well as body weight. In our study, oligomenorrhea was observed in 76.89% of cases while hirsutism was found in 48.0% patients. Similar results are seen in a study conducted by Baen et al [12]. In another study conducted by Adil F, [13] oligomenorrhea was present in 79.68% of patients. In one more study, the most common indication was menstrual disorder seen among 84% of cases [14].

Although, oligomenorrhea was the commonest presentation in our study, normal menses were present in 27% of our patients. Similar results are seen in a study conducted by Balen et al [12].

Insulin resistance causing hyperandrogenism along with outcome anovulation is a newly realized significant

pathogenetic system in PCODS. Insulin resistance not only takes place in obese females with PCODS, where it can possibly be probable since obesity is often related to insulin resistance, but in 50 % of average weight females also with PCODS. Outcomes of our study demonstrate that metformin significantly lowers the fasting serum insulin level in patients. Alike outcomes are shown in a study carried out by Wang A.[15] One more study carried out by Zafar S, shows the same results [16]. Another study conducted by K-Idris[17] author shown that metformin significantly reduces hyperinsulinemia.

Weight loss has numerous advantageous effects on metabolic, endocrinological as well as clinical characteristics of patients representing with PCODS. In our study, no significant weight loss is seen later than 6 months of metformin treatment. Alike outcomes are exposed in a study carried out by Zafar S[16].

Kocak as well concluded that metformin treatment was efficient in decreasing hyperandrogenism as well as insulin resistance in females with PCOD [17].

It is greatly emphasized that correction of insulin resistance is important to lower the complications of pregnancy like miscarriage, IUGR, and development of gestational diabetes mellitus.

A challenge to health care expert must be the proper application of pharmacotherapies for improving insulin sensitivity, leading to advantageous modifications in PCODS.

CONCLUSION

Metformin was a useful treatment in decreasing the level of insulin. Further large sample size studies are required.

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

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Original Article

Medical Education

Quality Assurance in Medical Education in Pakistan

Bilal Ahmad Sethi[1], Surriya Yasmin[2], Khawar Anwar[3] and Muhammad Usman Anjum[4]

ABSTRACT

Objective: To assess the level of quality assurance in medical education in Pakistan.
Study Design: Observational / Descriptive study.
Place and Duration of Study: The study was carried out at Frontier Medical College, Abbottabad, from January 2016 to March, 2016.
Materials and Methods: No significant research was carried out on this subject earlier in Pakistan. Therefore, an internet search was carried out. Published research (in Pakistan and sub-continent) and documents pertaining to policy were analyzed.
Results: Total no of medical schools had risen to 132 in Pakistan, while the no of medical institutes was 314 in India. There are 52 medical and dental colleges in public sector throughout Pakistan while 82 medical and dental colleges in private sector. This shows that the no of medical institutes is considerably high in private sector than in public sector. In public sector, Punjab had the largest no of medical institutes with 22 (18 medical colleges and 4 dental colleges), Sindh has 13 (9+4), Khyber Pakhtunkha (K.P.K) has 10 (8+2), Baluchistan has 2 (1+1) and Azad Jammu & Kashmir (AJK) has 3 (3+0). In private sector, Punjab had the largest no of medical institutes with 40 (28 medical colleges and 12 dental colleges), Sindh has 26 (14+12), Khyber Pakhtunkha (K.P.K) has 14 (9+5), Baluchistan has 1 (1+0) and Azad Jammu & Kashmir (AJK) has 1 (1+0). The no of students admitted to medical programs in Pakistan and India in 2014 was 11250 and 35783 respectively. The maximum no of students, about 6250, were in Punjab, followed by 2850 students in Sindh, 1550 in K.P.K, 400 in AJK and 200 in Baluchistan. Conclusion: Quality assurance plays a pivotal role in medical health education. There is a need to establish stringent policy guidelines for accreditation standards. This will help improve level of medical education in Pakistan. It will also ensure that medical graduates will receive good education and public will get highest standards of healthcare services from well-educated doctors.
Key Words: medical education, quality assurance, Pakistan

Citation of article: Sethi BA, Yasmin S, Anwar K, Anjum MU. Quality Assurance in Medical Education in Pakistan. Med Forum 2016;27(4):5-7.

INTRODUCTION

Medicine is a noble profession. People put faith and trust in doctors. Therefore, it becomes very important for a doctor to keep this faith and not let go of this trust. This can only be done by attaining competence in the field and following ethical standards. Level of medical education plays a pivotal role in attaining the excellence in the field. But, socioeconomic factors have affected medical education to a great deal. Therefore, it is very important to maintain the highest quality standards of medical education being imparted to the medical students[1]. Only then, it will be possible to deliver standardized health services to the masses. This can only be done by quality assurance which will help us understand whether the medical education is fulfilling its goals and object[2].

There are many different ways of defining quality. Quality is a characteristic or a property. In medical education, quality can be defined as is fulfilling the required standards or criteria as specified in the policy guidelines or as laid down by accreditation institutions [1, 2]. Here, quality means the degree to which medical education given at medical colleges meet the targets or goals specified in the guidelines. Closer they are to each other, higher will be the quality and vice versa [2]. Quality assurance is the process of achieving quality in the product or services and it is a preventive measure. Quality assurance is a system of monitoring and evaluation that ensures that the pre-established standards are met and the product will be error-free and suitable for use[3]. World Federation for Medical Education (WFME) has stressed the role of quality assurance in medical education [4]. Medical knowledge is growing rapidly and the technology is changing. Information technology is used more and more in the medical profession [3]. And the only way to keep up with these changes is assuring quality in medical education.

There is a rapid increase in the number of medical institutes in recent years [1, 5, 6]. Many of these new

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colleges are now operated by private sector. Therefore, it is the need of time to regulate medical education and establish accreditation guidelines to maintain highest levels of quality in medical education so that competent and professional medical personals will be available to provide healthcare services. Therefore, we have conducted this study to assess the level of quality assurance in medical education in Pakistan.

MATERIALS AND METHODS

This observational / descriptive study. was carried out at Frontier Medical College, Abbottabad, from January to March; 2016.An internet search was carried out to find articles published on the subject of quality assurance in medical education as well as medical training. Published research (in Pakistan and sub-continent) and documents pertaining to policy were reviewed. Internet search engines like Google and Yahoo were used for this purpose. The search terms used were, "quality assurance", "quality", "medical education", "basic medical sciences", "quality control", etc. The articles were carefully reviewed for their relevance on the said subject. Microsoft Excel (2007) was used to organize and analyze data.

RESULTS

Careful analysis of the published literature showed quite intriguing results. It was found out that the total no of medical schools had risen to 132 in Pakistan while the no of medical institutes was 314 in India. There are 52 medical and dental colleges in public sector throughout Pakistan while 82 medical and dental colleges in private sector [7, 8] as shown in Table 1 and Figure 1 & 2. This shows that the no of medical institutes is considerably high in private sector than in public sector and there was a rapid increase in the institutions imparting medical and dental education throughout the country.

Table No.1: No of medical colleges and no of students enrolled each year in Pakistan and India

Country	No of Medical Colleges	No of Students Enrolled Each Year
Pakistan	132	11250
India	314	35783

Province-wise distribution of medical and dental institutes is shown in Figure 1 & 2. In public sector, Punjab had the largest no of medical institutes with 22 (18 medical colleges and 4 dental colleges), Sindh has 13 (9+4), Khyber Pakhtunkha (K.P.K) has 10 (8+2), Baluchistan has 2 (1+1) and Azad Jammu & Kashmir (AJK) has 3 (3+0) as shown in Figure 1.

In private sector, Punjab had the largest no of medical institutes with 40 (28 medical colleges and 12 dental colleges), Sindh has 26 (14+12), Khyber Pakhtunkha (K.P.K) has 14 (9+5), Baluchistan has 1 (1+0) and Azad Jammu & Kashmir (AJK) has 1 (1+0) as shown in Figure 2.

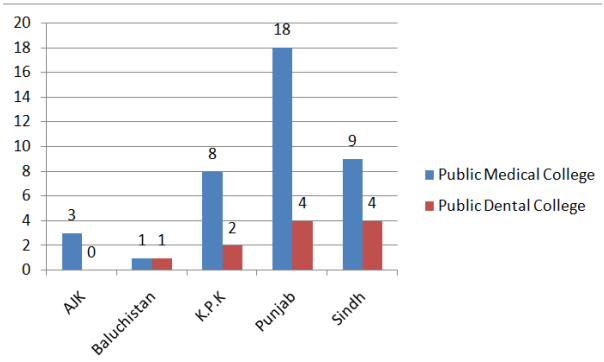

Figure No.1: No of public sector medical and dental colleges in Pakistan

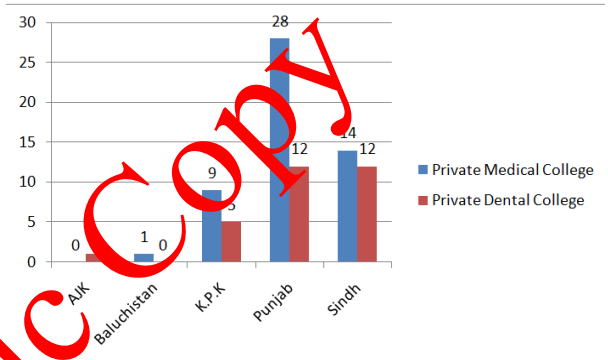

Figure No.2: No of private sector medical and dental colleges in Pakistan

The no of students who were securing admission in these institutes has increased dramatically. As shown in Table 1, the no of students admitted to medical programs in Pakistan and India in 2014 was 11250 and 35783 respectively. Province was distribution of students admitted to medical institutes is shown in Figure 3. The maximum no of students, about 6250, were in Punjab, followed by 2850 students in Sindh, 1550 in K.P.K, 400 in AJK and 200 in Baluchistan.

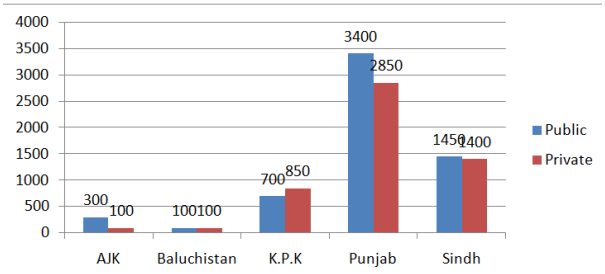

Figure 3. Province wise distribution of no of students enrolled in medical colleges in Pakistan each year

DISCUSSION

Quality assurance is very important to maintain the standard of medical education and ensure the competence of the medical and dental students.

Different standards and policy prescriptions are used to evaluate and accredit medical institutes in different countries. But, these procedures vary from one country to another. For example, it is General Medical Council (GMC) which is responsible for establishing and maintaining these standards in United Kingdom. GMC is responsible for maintaining quality in medical institutes in UK and for that purpose, it monitors and visits these institutes [3]. Similarly, Pakistan Medical and Dental Council (PMDC) is a statutory body which is empowered by our government to perform the same duties in Pakistan. It is the responsibility of PMDC to regulate and maintain the highest standards of medical education in Pakistan.

Medical education has to be updated regularly to cope up with latest developments and improvements in the field of medicine. Not only this but to equip young doctors with the necessary skills and knowledge to fulfill the needs of society, to keep themselves updated with the latest scientific discoveries and to be trained in new technologies and latest health care systems [3]. This will ensure competence among young graduates. Competence is a lifelong process of learning. It is the ability to condition one's abilities to face and perform in real-world situations. It depends upon content- and context-specific factors like taking history, clinical reasoning and knowing the epidemiology of diseases respectively [9-11].

Our study has shown that the no of medical colleges had dramatically increased to 132 in Pakistan. About 52 medical and dental colleges were in public sector whil 82 medical and dental colleges were in private sector. This increase was considerable in private sector. As per regional distribution of public sector institutes, Punjab had the largest no of medical institutes with 22 (18 medical colleges and 4 dental colleges), Sindh has 13 (9+4), Khyber Pakhtunkha (K.P.K) has 10 (8+2), Baluchistan has 2 (1+1) and Azad Jammu & Kashmir (AJK) has 3 (3+0). Similarly, in private sector, Punjab had the largest no of medical institutes, 40 (28 medical colleges and 12 dental colleges), followed by Sindh, 26 (14+12), and Khyber Pakhtunkha (K.P.K), 14 (9+5). Baluchistan and Azad Jammu & Kashmir (AJK) each had only one medical college. Similarly, the maximum no of students were enrolled in Punjab, followed by Sindh, K.P.K, AJK and Baluchistan. This reveals a pattern that the areas having a high population density had the highest no of medical and dental institutes and subsequently, the highest number of medical students enrolled in these medical and dental colleges. This shows that the no of medical institutes, both medical and dental, as well as the no of admitted students is increasing rapidly. This translates into the fact that quality control and quality assurance policies should be implemented in their letter and spirit to ensure the highest level of medical and dental education. This could be implemented by updating the policy guidelines and accreditation rules regularly and conducting periodic visits and inspections to ensure adherence. Meanwhile, the medical institutes should apply latest assessment strategies to ensure competence of their graduates [9].

CONCLUSION

Quality assurance plays a pivotal role in medical health education. There is a need to establish stringent policy guidelines for accreditation standards. This will help improve level of medical education in Pakistan. It will also ensure that medical graduates will receive good education and public will get highest standards of healthcare services from well-educated doctors.

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

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Original Article

Factors Affecting Physical Violence in Pregnancy

Violence in Pregnancy

Afra Rehman[1], Razia Tariq Qureshi[1] and Amber Abbasi[2]

ABSTRACT

Objective: To assess the factors affecting physical violence in pregnancy.
Study Design: Observational / descriptive / cross sectional study.
Place and Duration of Study: This study was carried out in the Obs. and Gynae Department of People University of Medical and Health Science, Nawabshah Sindh from July 2013 to June 2014.
Materials and Methods: All women who attended gynae OPD of Peoples university hospital Nawabshah, and had pregnancy ever, were included in the study. Predesigned questionnaire was made and after taking verbal informed consent. Women were interviewed separately. Questions were asked about their relationship with their husbands and family members and physical abuse during pregnancy etc.
Results: Total 190 women were enrolled in this study. Out of these, 161(84.7%) women had physical violence during pregnancy while 29 (15.3%) women had no abuse. Factors were significantly related with physical abuse during pregnancy. Women belonging to poor class were more involved in physical violence as compared to upper class (P= 0.000). Illiterate husbands were more involved in physical abuse than graduates, but results were not significant statistically (P= 0.12).
Conclusion: Poor socioeconomic condition, nuclear family structure and addicted husbands were more involved in physical violence during pregnancy.

Key Words: Factors, physical violence, pregnancy

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INTRODUCTION

Domestic violence is very common and important public health dispute against pregnant women worldwide.[1,2] As estimately indicated by WHO, 10-69% of pregnant ladies through their male partners are assaulted.[3] It is very difficult to protect the pregnancy from domestic violence.

Physical violence characterized as multiple different acts of physical assaults executed through male partner throughout the present pregnancy. On the other hand the general health effects are especially raised when such incidents happen throughout the pregnancy, and resulting inadequate health provided to the pregnant lady but rather additionally her unborn baby.[4,5] In a study it is mentioned that violence incidence through their male partners, I early pregnancy 23 t0 25%, while it is raised at the 52% at the full term pregnancy.[6]

In the developing countries literature showed that 45 to 29% totally women are facing to the domestic violence during pregnancy.[7,8] There are many factors responsible for it like demographic,[9] socioeconomic status and cultural[10,11]. In developing countries important factors responsible for physical violence are education of husband and wife, household wealth, addiction, unplanned pregnancy and duration of marriage [12]. Physically abused women are more likely to develop psychological sequel like suicide, depression, addiction of the drugs and the stress syndromes of the post trauma.[13] In a past study of the Pakistan provided details regarding abusive behavior at home from the point of view of men, in this totally respondents admitted to constantly verbally misappropriating their wives and above the two third to continuously captivating in un consensual sexual movement to their female partners.[14] This study was done to determine the factors association with physical violence during pregnancy in our setup.

MATERIALS AND METHODS

This observational / descriptive / cross sectional study was done between Jan 2011 to Sep 2011 at Gynaecological Department of People University of medical and health science Nawabshah Sindh Pakistan. All women who attended gynae outpatient department and had pregnancy ever, were included in the study. Predesigned questionnaire was made and after taking verbal informed consent women were interviewed. Sample size was random and convenient. Women who were unmarried and had no pregnancy were excluded

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from the study. Every one of the interviews was directed at a place where nobody could hear the discussion. Confidentiality was ensured. Questions were asked about their relationship with their husbands and family members and physical abuse during pregnancy along with they were living in joint family and their socioeconomic status, education and employment status etc. Data was entered analyzed on SPSS version 16. P value kept < 0.05 as significant after applying the chi squire test.

RESULTS

Total 190 women were enrolled in this study. Out of these, 161(84.7%) women had physical violence during pregnancy while 29 (15.3%) women had no abuse. 162(85.3%) women belonged to poor socioeconomic class while 17(8.9%) women belonged to middle socioeconomic class (Table 1).

Table No.1: Demographic Data N=190

Demographic Variables	Frequency	%age
Socioeconomic Status		
Poor	162	85.3
Middle	17	8.9
High	11	5.8
Husband Education		
Illiterate	77	40.5
Primary	51	26.8
Secondary	42	22.1
Graduate	20	10.5
Employment Status		
Employ	102	53.7
Not working	88	46.3
Family System		
Nuclear	110	57.9
Joint	80	42.1
Length of Marriage		
<5 year	50	26.3
5-10 year	48	25.3
>10 year	92	48.4
Addiction		
Addicted	67	35.3
Non addicted	123	64.7
Violence In Pregnancy		
Occurred	161	84.7
Not occurred	29	15.3

Table 2 shows factors statistically significant association with physical abuse during pregnancy. Women belonging to poor class was had more physical violence as compared to upper class (P= 0.000). Husbands who were addicted were more involved in doing physical abuse as compared to those who were not addicted (P= 0.000).

Results of table 3 shows that illiterate husbands were more involved in physical abuse than graduates, but results were not significant statistically (P= 0.12).

Table No.2: Factors having association with physical violence during pregnancy

Variable	Violence during pregnancy		Chi-square Value	P value
	Yes (N =161)	No (N =29)		
Socioeconomic status low middle upper	144 9 8	18 8 3	16.674	0.000
Addiction Addicted not addicted	113 48	10 19	13.722	0.000
Family structure nuclear joint	103 58	7 22	15.998	0.000
pregnancy wanted unwanted	97 64	23 6	3.837	0.037
Duration of marriage: <5 years 5-10 years >10 years	34 44 83	16 4 9	14.74	0.001

Table No.3: Factors having no association with physical violence n=195

Variable	Violence in pregnancy		Chi-square Value	P value
	Yes (N = 161)	No (N =29)		
Husband éducation: Illiterate Primary Secondary graduate	65 41 40 15	12 10 2 5	5.798	0.12
Employment status: employee not employee	87 74	15 14	0.053	0.488

DISCUSSION

Violence against ladies has moved over late decades and observed as the private or the issue of the family and it is supposed as the health is related to genuine results for wellbeing of victims.[15] When violence happens amid pregnancy, its belongings go past the

mother, and also influencing the child.[16] This series has been carried out evaluate the factors and physical violence association in the women with pregnancy. Results of our findings showed that low socioeconomic status is strongly linked to the domestic physical violence in the women with pregnancy with significant difference between low socioeconomic and upper socioeconomic status (P=0.000).

Low financial status is connected with violence, it would in this manner infer increase pay of the women and control the resources of the economy can significantly decrease the violence. In a study stated that South African women those were financially enabled through credit augmentation and overseeing advances reported decreased risk of violence.[17]

Similarly Nasir K et al[7] mentioned that socioeconomic status is highly linked to physical violence in pregnant women, their results are showed the same findings as compare to our study.

In this study it is found that the employment activity was not significantly linked to the physical violence during the period of pregnancy (P= 0.488). Similar findings were noted in the series of N Hanmoury et al[18].

In the results of this series marriage duration was highly linked with physical violence, as well as the extra violence has been found in those women having marriage duration more than 10 years (P=0.001). In the study of Nasir K et al[7] also reported that marriage is highly linked with physical violence.

Results of our study showed strong association of addiction of husbands and physical violence (P=0.000). Similar findings were found in the study of Bacchus L et al[19].

In our study, pregnancy did not protect the respondents from physical abuse. Same is seen in other studies [20]. Low education level in husbands is linked to raised violence's risks, but results are not statistically significant (P=0.12), on other hand Bacchus L et al[19] also demonstrated that low education level in husbands is linked with increased risk of physical violence.

CONCLUSION

Poor socioeconomic condition, nuclear family structure and addicted husbands were more involved in physical violence during pregnancy.

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

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Original Article

Oral Mucosal Lesions

Prevalence and Type of Oral Mucosal Lesions in Patients with Fixed Orthodontic Appliances

Rana Modassir Shamsher Khan[1], Khawaja Rashid Hassan[2], Muhammad Rizwan[3] and Javeed Ashraf[4]

ABSTRACT

Objective: Specific objective of this study was to determine the Prevalence and type of oral mucosal lesions in subjects with orthodontic appliances during first month of treatment.
Study Design: Observation / Descriptive / Cross sectional study.
Place and Duration of Study: This study was conducted at Islam Dental College Sialkot for a period of 8 months.
Materials and Methods: Oral lesions can develop as a result of irritation due to intra oral orthodontic appliances but their prevalence is unknown. This study comprised of 200 subjects wearers of orthodontic appliances (age between 10 and 25 years). The presence and types of intra oral mucosal lesions were determined by using different clinical indices.
Results: Oral mucosal lesions such as desquamations, erosion, ulceration, and contusion were present in subjects with orthodontic appliances.
Conclusion: Fixed orthodontic appliance treatment had a higher risk of soft tissue lesions in oral cavity. Thus gentle instrumentation, vigilant banding, bonding and manipulation of the appliances needed to keep away from traumatic lesions. The careful handling is important in patient's motivation, successful treatment planning and outcome.
Key Words: Mucosal lesions, fixed orthodontic appliances

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INTRODUCTION

Fixed Orthodontic treatment facilitates in improving dentofacial aesthetics and above all it brings confidence to the subjects. The treatment of malocclusion is of great advantage that benefits it provides should be more important than any possible harm.[1] Intra-oral local lesions are the risks throughout fixed orthodontic appliance treatment. The discomfort, irritation, pain and ulcerations are common side effects caused by appliances of orthodontic treatment.[2,3] The possible risk of fixed appliance treatment are three-fold: treatment failure; tissue injury; and tendency to dental disorders. Due to speedy metabolism of oral tissues in healthy adolescent orthodontic subjects, the unpleasant and painful injury heals quickly.[4] During first month of treatment, subject may notice sores or ulcers inside mouth. This happened because lips and cheeks are not used to rubbing against orthodontic braces. Over time the inside of mouth will adapt and subject will not having sores. In the literature it is seen that intra-oral tissues and extra-oral structures equally are at threat of injury. The laceration of lips, buccal tissues and gingiva is origin of ulceration. The fixed orthodontic appliance components such as molar bands, buccal tubes, brackets and long unsupported arch wires touching the soft tissue of lips can lead to ulcerations.[2] The excessive activities of tongue or cheek muscles also act as factor to trigger ulceration. For this reason the clinicians should evaluate and observe all aspect of treatment procedure to attain successful final result.[5] Orthodontist should make sure that majority of the subjects get advantage with proper diagnosis, appropriate treatment planning, supervision and sensible intervention. The literature search reports that very few studies were dealing with prevalence and type of oral mucosal lesions during fixed orthodontic treatment. On the other hand, the lesions of soft tissues are frequently observed in every day clinical practice. As a consequence it influences enthusiasm treatment duration and motivation of patients.[6] Thus, the aim of this study was to observe the prevalence and type of mucosal lesions in subjects with fixed orthodontic appliances.

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MATERIALS AND METHODS

The study included 200 patients' who have been bonding and banding wearers of orthodontic appliances within first month of their treatment. The study sample included 76 boys and 124 girls. The subject's age is ranged from 10 to 25 years with mean age 16.45.

The medical history was recorded. The oral examination was performed in all subjects and oral mucosal lesions were detected and documented. Then, information related to various verified allergies to known allergens and medications along with systemic diseases were recorded in the medical history.

Patients suffering from chronic or systemic diseases, allergy and the particular patients who were on prescribed medicines for above mentioned reasons were included in the "exclusion criteria."

The Ethical Committee of Islam Dental College, Sialkot approved the study. Before taking written consent, every member was comprehensively informed about the purpose of study. Prior to commencing the study, for the subjects who were younger than 18, the parents were asked to provide a written consent.

Oral examination was performed in all the patients by the Oral Pathology Specialists and based on an internationally accepted criteria, procedure was performed to detect oral mucosal lesions in a standard manner .[8] Lesions were then recorded on the basis of their clinical appearance which included surface morphology, location, color, dimension, and consistency. Then they were categoriesin to four group namely contusion, desquamation, erosion, and ulceration. The mucosal lesions which were present at the time of examination were documented.

The size of oral lesion was ranked from 1 to 3:

1. Lesion up to 1 cm.
2. Lesion from 1 to 3 cm.
3. Lesion larger than 3 cm.

Statistical analysis: SPSS Version 20 was used to analyze all the data provided.

RESULTS

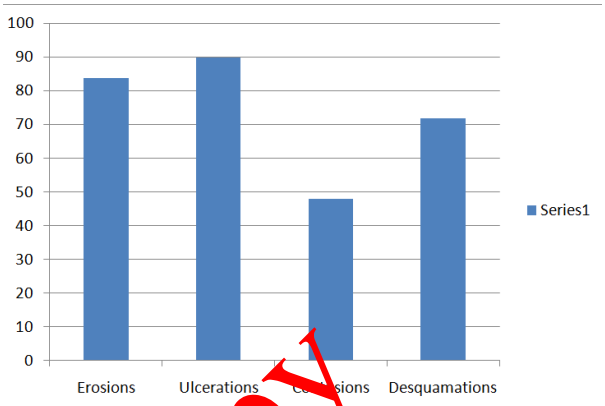
Table No.1: Distribution and Prevalence of oral mucosal lesions

Total	Male	Female
200	76	124
Percentage	38%	62%

Mucosal lesions were detected in about 126 (63%) subjects with orthodontic appliances.

Therefore, apparently more than half subjects had some kind of lesion in oral cavity after the procedure of bonding and banding during the first month of treatment. The most common lesions in the study subjects were ulcerations (45%), erosions (42%), contusions (24%), and lastly desquamations (36%) because of injury that resulted due to usage of orthodontic appliance. Thus it is seen that Contusions, ulceration, erosion, and desquamation were mostly observed in subjects wearing the fixed orthodontic appliances.

Mainly erosions and desquamations is caused by orthodontic brackets and ulcerations are originated by arch wire. (Table 1, Graph 1)



Graph No.1: Difference Oral Mucosal Lesions

DISCUSSION

In this study, it was revealed that the patients who wore orthodontic appliances are more prone to the development of mucosal lesions. In subjects having fixed orthodontic appliances, the most common reason of mucosal lesions was related to trauma resulting from the use of appliances. Moreover, erosion and ulceration were the most common mucosal lesions that were seen with fixed orthodontic appliances therapy. The Data obtain from Kvam et al explained that, 75.8% of subjects presented with small wounds, whereas 2.5% presented with bad ulcerations among the wearers of fixed orthodontic appliances, although the clinical manifestation of the small wounds was not well explained.[2] In a study carried out by Baricevic et al; erosion, ulceration, gingival inflammation, and contusion were declared as the most regular findings in orthodontic patients.[9] According to the WHO scheme, the lesions resulting from fixed orthodontic appliances are localized on buccal and vestibular mucosa, where as the usage of arch wires and brackets are the reason of desquamations and erosions. Moreover, brackets and wires are reason of ulcerations on the lower lip. According to Travess et al.[10] in patients of fixed orthodontic appliances, hyperplasia or ulceration developed by irritation due to bonds and arch wire or the wires which rest against the lips. The oral lesions which represented themselves with damaged epithelium and exposed nerve endings provoked painful feelings. The Data collected from the literature usually explained pain as a result of application of forces in order to bring tooth movement[3, 11–13] instead of pain that results from intra-oral mucosal lesions.[14] The subjects acquire oral

ulcers due to rubbing of cheeks and lips on brackets, bands or cleats as they become used to orthodontic appliances. Rarely lingual or palatal arches may cause ulceration to tongue or palate. According to Bergius et al motivation is the key of willingness to tolerate the pain throughout orthodontic treatment.[15] For that reason, prevention of oral lesions means prevention of pain and raising the patient's enthusiasm for orthodontic treatment. We observed in our study that the majority of oral lesions were noticed in the first appointment after banding and bonding. Few patients according to the study suffered from stomatitis because of nickel allergy. In these cases, protective barriers like rubbers or ceramic brackets were used. Generally, careful fitting cautious use of instruments and handling of orthodontic appliances is needed in order to stay away from sharp edges. It was also observed from study that many orthodontists provide supportive management to the orthodontic subjects with ulcerations showing the importance of proper management of ulcers during treatment.[16] Although, the tissues in oral cavity quickly adapt and toughen up to a new appliance, proper management is still required. The management hence can be divided into "preventive" and "definitive" therapy.[17, 18] Usage of ortho-dental wax over the brackets and bands may highly reduce the chances of trauma. Use of tubing on the arch wire which is unsupported also helps to diminish the risk of iatrogenic damage. However, careful rounding-off of sharp edges of the particular appliance can also prove out to be helpful in this regard.[19] From the large number of studies we evaluated, few of them were dealing with the prevalence as well as types of oral mucosal lesions in subjects with orthodontic appliances. Thus, this study was accepted and carried out to establish the type and prevalence of oral lesions in subjects with orthodontic appliances. As a result of trauma more soft tissue lesions were present in subjects with orthodontic appliances. The Clinical appearance of oral mucosal lesions as well as their locations was linked with the structure of appliance being used. The ability of the clinician to prevent oral lesions and treat them would significantly decrease the pain, increase patients' motivation and consequently treatment success.[20]

CONCLUSION

Fixed orthodontic treatment is associated with increased risk of lesions in oral cavity.. Careful instrumentation, handling, fitting, and adjustment of the orthodontic appliances should be done to avoid oral mucosal lesions during orthodontic treatment. It is important in improving patient's motivation, treatment diagnosis, planning, and successful outcome.

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

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Original Article

Fixation of Intertrochanteric Femoral Fractures by Dynamic Hip Screw

Intertrochanteric Femoral Fractures

Muhammad Ramzan Khan[1], Amanullah Khan Kakar[1] and Muhammad Saleeh Tareen[1]

ABSTRACT

Objective: Aim of the study was to evaluate the results of DHS fixation union rate, complications and functional outcome.

Study Design: Experimental / clinical trial study

Place and Duration of Study: This study was carried out at Bolan Medical Complex Hospital Quetta from January 2014 to December 2015.

Materials and Methods: 45 patients were surgically treated with use of dynamic hip screw (DHS) to stabilize the intertrochanteric fractures. Out of total 45 patients 35 (74%) were males and 10(14%) females. Age ranged between 25 -71 years average 63.9 years. Most common mode of injury was mixed in 28 patients. All the cases were classified according to Jensen's classification. All the cases were performed under image use of 135' angle plate with hip screw.

Results: Out of 45 patients 03 patients died, two in the hospital and I at home. It was observed that patients from rural areas arrived late (19.8 days) after their injuries and these from urban areas reached within two days and thus affected the reduction and operation time. Time lapse between the injury and operation was 11.7 days. Overall union time was 20.02 weeks. No nonunion was seen. Complications were seen in 12 patients.

Conclusion: Excellent to good results were achieved in 96% of cases which concludes that DHS is bio-mechanically stronger and better implant for fixation of intertrochanteric fractures.

Key Words: Dynamic Hip Screw, Fracture, Intertrochanteric Femur

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INTRODUCTION

Intertrochanteric fractures classically occur along a line between greater and lesser trochanter[1], are common among elderly due to osteoporosis, malnutrition, decreased physical activity, impaired vision, neurological impairment and altered muscular weakness.

Proximal femoral fractures are extra capsular and heal well because of adequate blood supply. For the extra capsular proximal femoral fractures most appropriate implant is dynamic hip screw which consists of lateral plate and a barrel connected through a sliding screw located in the posterior inferior pole of femoral head. They are by for the most popular devices used today.

Basically two categories of implants are being used to stabilize the intertrochanteric fractures, extra medullary fixation devices include Jewett nail plate Condylar blade plate, Dynamic hip screw system and intra-medullary devices; include reconstruction nails and Gamma nail. Gold men et-al[3] compared the results of compression hip screw and gamma nail and found clinical healing similar but 3-6% re-fracture rate with removal of gamma nails. Simon et-al[4] compared the result of comparison of Gamma nail with dynamic hip screw and reported secondary femoral fractures with gamma nail and found no significant different between the two devices. Apart from extra and intramedullary modalities external fixation have been used for the stabilization of intertrochanteric fractures. Mikovie et-al[5] reported that external fixation is a minimally invasive and suitable device for high risk elderly patients.

Surgical intervention is required to stabilize these fractures and to mobilize the patients as early as possible. These fractures predominantly occur as a results of low energy trauma in old aged patients and high velocity trauma in old age patients and high velocity trauma in young patients. Trochanteric fractures are extra capsular with adequate blood supply which heals well.

Objective of treatment of intertrochanteric fractures is early stabilization and mobilization to avoid complication of immobilization like deep vein thrombosis pulmonary embiolism, bed sores, hypostatic pneumonia and enhanced osteoporosis. Treatment is surgical stabilization with biomechanically stronger fixation device to make the patients. In our local circumstances BMCH, intertrochanteric fractures are mostly stabilized with dynamic hip screw with help of

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image control. Many patients in our local set up report late due to socioeconomic and quicker treatment problems.

MATERIALS AND METHODS

45 patients were studied for the period of two years at BMCH Quetta from January 2014 to December 2015. Out of 45 patients there were 34(77.78%) males and 10(22.22%) females with male to female ratio 3.5:1. Average age was 63.9 years ranging between 25 to 73 years. Mode of fractures was road traffic accidents 28 (62.22%) patients, fall 13(28.89%) and 04(8.89%) had fire arm injuries. According to Jensen's modified Evan's classification of intertrochanteric fractures; there were 30 unstables and 15 stable fractures. All the patients were divided into two groups' early presentation (arriving within week time) and late presenting group (arriving after 1 week time).

Patients admitted through the emergency or OPD were initially managed by resuscitation and application of skin traction to relieve pain. Detailed history, clinical examination and routine investigations were done. Radiographs anterior review and lateral views were taken to asses the fracture geometry. Pre-operative planning was performed to arrange appropriate implant. Most of the patients were operated under spinal anesthesia with use of lateral approach to proximal femur. Patients were operated with supine position and after induction of anesthesia fractures were closely reduced with the help of traction table. In all cases closed reduction was tried first but in those cases where close reduction was unsatisfactory open reduction of the fractures was carried out. After confirmation of the position of guide pin with image. After reaming lag screw of appropriate size was inserted and 135° angled side plates was glided on to the screw and fixed to the bone with 4.5mm cortical screws. Wound was closed in layers over one to three drains. Prophylactic antibiotics were used preoperatively and for future seven days to avoid infections. During the post-operative period patients were advised to sit up move the bed next day and partial weight bearing was allowed as soon as patients could tolerated the pain. Patients were discharged and reviewed every 03 weeks for 03 months and then every 02 months for one year.

RESULTS

Total 45 Patients underwent operative stabilization 03 patients died 2 patients in the postoperative period within 14 in the hospital and one died at home 10 weeks after operation with mortality rate of (6.66%). There were 35 patients and 15 females with male to female ratio of 3.5:1. The ages of the patients ranged between 25 to 71 (average 63.9) years highest age 7th decade of life. As regards the mode of injury was road traffic accident in 28 (62.22%) patients, fall in 13(28.89%) patients, fire am injuries in 04 (8.89%) patients.

Table No.1 : Age Group

Age group	No. of Patients	Percentage
25 -40	02	4.44%
41 -50 years	05	11.11%
61 – 70 Years	30	66.66%
➢ 70 tears	04	8.88%

Regarding the stability of fractures there were 30 (66.67%) unstable fractures and 15(33.33%) stable fractures. All the patients were divided into two groups, early group who arrived within 01 week time and late group arriving after one week. Most of the patients received from rural areas belonged to late group and from urban areas were of early group. There were 24 patients from urban and 21 patients from rural areas.

Table No.2: Mode of Injury

Distribution of patients according to residential area (urban and rural)

Mode of injury	Urban area (n= 24)		Rural area (n= 21)		Total (n = 45)	
	No. of Pts	%	No. of Pts	%	No. of Pts	%
RTA	15	62.5	14	61.9	28	62.2
Fall	08	33.33	05	23.8	13	28.8
Firearm	02	8.33	02	9.5	4	8.8

Table No.3: Types of Fractures

Classification of fractures according to jensen6 (evans modified classification) n=45

Fracture type Jensen type	No. of Patients	Percentage
Type – I	02	4.44%
Type II	03	6.66%
Type – III	10	22.22%
Type –IV	17	37.77%
Type V	13	26.88%
Reverse obliquity	00	0%

Time lapse between the injury and the admission was 11.7 days time in early group while 19.8 the late group which reflects the late arrival of rural area patients due to lack of transport, poverty and poor health education.

Table No.4: Types of Fractures

Delay in admission	Early group	Late group	Overall
0 days	8	-	8
1 - - 7 days	12	-	12
8 - - 14 days	-	8	8
15 - - 21 days	-	5	5
22 – 28 days	-	6	6
.> 28 days	-	6	6
Average	1.75	19.8	11.7 days

Operation time in early group ranged between 90 minutes in 165 minutes and average of 104 minutes but

the average operation time in late group was 135 minutes. This excessive time of 30 minutes was due to open reduction after failure at close reduction and also as more dissection was required in the late arrival group.

Table No.5: Operation Time

Group of patients	Average operation time
Early group	104 minutes
Late group	135 minutes
Overall	120 minutes

Fracture Union. In our series we achieved union in all cases. No delayed or non union occurred. Union time ranged from 16 weeks to 24 weeks with average 20.02 weeks, average union time in early group was 21 weeks and late group was 19.2 weeks.

Table No.6: Union time of Fractures

Minimum	16 weeks
Maximum	24 weeks
Average period	20.2 weeks

Pre-operative complications occurred in 3 patients, one developed fracture of the lateral part of trochanter during operation, one patient had hip joint penetration of screw and 1 lag screw cut out of the neck of femur.
Post-operative complication was in 8 patients, 2 patients developed superficial infection, 2 patients had external rotation deformity, 1 patient had varus angulation, 1 patient leg shortening., 03 patient died 2 in the hospital 1 at home 10 weeks after the surgery.

Table No.7: Overall Complications

S.No.	Complication	Patients	%age
1	Pre-operative		
	Fracture lateral part of greater trochanter	01	2.22
	Hip joint penetration	01	2.22
	Placement of lag screw out of neck		
2	Post Operative		
	Haematoma	02	4.44
	Superficial infection	02	4.44
3	Follow-up		
	External rotation	02	4.44
	Varus angulation	1	2.22
	Leg shortening	1	2.22

Functional Outcome: All the patients were assessed by the Stinchfield hip assessment system of based on disability according to pain, movement and ability to walk. Excellent results were achieved in 33 patients, good in 05 patients fair in 03 patients and poor 1 patient excellent to good results were achieved in 96% cases.
Infection rate in our series was 4.44% and infection rate in case series presented by Desjardins infection rate was 3.5%, series of Radford et-al 4%,

DISCUSSION

Dynamic hip screw is widely accepted in the treatment of inter trochanteric fractures of proximal femur. It is biomechanically stronger and gives excellent results. Kaufer et-al[7] described five variables which determine the mechanical integrity of fracture implant construct following fixation of these fractures. Of these five variables three are directly determined by the surgeon.
1. Reduction 2. Implant used 3. Implant Position.
It has been suggested by McEelvenney et-al[8] that eccentric screw placement allowed tilting of the fracture and impeded union. Mostly posterior-inferior placement is favoured to prevent cut out. Main objective of inter trochanteric fractures is early stabilization to mobilize the patient, achieve fracture union and rehabilitate the patient as soon as possible. There are many factors which can affect the results and out come like age of the patient, time period between the injury & operation and adequate fixation.
We compared the ages of the patients with other studies carried out by the Clark et-al[9], Desjardin et-al[10], Parker-et-al[11], Gargan et-al[12], Baumgaertner et-al[13]. Ages of the patient in these studies were more than 80 years in our series patients were younger aged and mode of injury was the trauma. Sex affected in our study and male to female ration was 3.5:1 compared to the studies by the Butt-et-al[14] ration was 0.44:1. Study by Saeed Akhtar et-al[15] the male female ratio was 2.2:1. Our study reveals male predominant ratio because females are less exposed to trauma in our society.
We had 30(66.66%) unstable and 15 stable fractures. Comparative studies presented by the Radford et-al around 60% were stable and 40% unstable fractures. Average operative in our study was 120 minutes, Desjardins et-al, Gargan et-al, Butt et-al average operation was 83 minutes, 47 minutes, 62 minutes respectively. Operation time in our study is low due to available of image confirmation of the pin position as we have the facility of image intensifier.
Butt et-al 4.5%, and infection rate of our study is quit comparable to other studies.
We had no case of fixation failure. Fixation failure was 2% in a study by Clark & Ribbins. Radford et-al younger as compared to other studies; reason may be old age and osteoporotic fractures in other studies. Position of the lag screw should be central or in the inferior part of the femoral head which is debatable. Minds[17]. Thomas et-al[18] has favored the inferior quadrant position of lag screw. However superior position should be avoided because of cut through problem.
Union time in our series ranged between 16-24 weeks average 20.02 weeks. Fracture united in patients below 60 years in 19 weeks. So earlier union occurred in younger patients and advanced age has negative impact on fracture union of intertrochanteric fracture of femur

and this may will be due to the decreased bone stack in neck of femur. Union time in early group was 21 weeks as against 19 weeks on late arrival group. Reason for this could be the more stable fractures in late group.

CONCLUSION

It is concluded that intertrochanteric fractures lead to increased morbidity and mortality. Early and stale fixation is required to avoid various complications. Delayed arrival and traditional treatment of patients by the Quicker and poverty are the factors which affect the results badly.

Patients education, economical solution of poor patients and early surgical intervention can be helpful to the patients.

Various studies including our series have shown that the fixation of intertrochanteric fractures with DHS lead to excellent functional results and has least complications thus it is the best method of managing the fractures.

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

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Original Article

Contaminated Abdominal Wound

Comparative Study Between Primary Closure and Delayed Primary Closure in Potentially Contaminated Abdominal Wound in Paediatrics Age Group

Mohyuddin Kakar[1], Yaqoot Jahan[2] and Farhat Mirza[3]

ABSTRACT

Objective: The purpose of our comparative study is whether the delayed primary skin closure of contaminated and dirty abdominal incision reduces the rate of surgical site infection, and the rate of morbidity as compared with the primary skin closure.

Study Design: Experimental / Randomized study

Place and Duration of Study: This study was carried out at National Institute of Child Health Karachi from February 2007 to July 2007.

Materials and Methods: A total of 60 patients of pediatric age group were included .They have randomized to have their surgical incision (skin and subcutaneous tissue) either primarily closed or left opened with the pyodine soaked gauze packing and loose stitches applied for delayed primary closure which were removed on 4th post of day of wound closure. A wound was considered infected if pus discharged from the incision site . The main out come measured were the incidence of wound infection and the length of hospital stay.

Results: This study revealed that the incidence of wound infection was considerably high in those contaminated wound where primary closure was done in 46.67% 18 out of 60 patients, hence increased morbidity with prolonged hospital stay while in delayed primary closure wound infection was 33.33% 10 out of 60 patients.

Conclusion: This study revealed that method of delayed primary closure without skin stitches is better than the primary wound closure technique in contaminated abdominal wounds.

Key Words: Wound, Delayed primary closure, Primary closure, Laparotomies.

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INTRODUCTION

It precisely refers to a sharp damage which injuries the skin dermis.[1] All surgical wounds are contaminated by microbes, but in most cases, infection does not develop because innate host defenses are quite efficient in the elimination of contaminants. A complex interplay between host, microbial, and surgical factors ultimately determines the prevention or establishment of a wound infection) Each surgical wound is adulterated by microorganisms, but infection does not appeared in most cases because of effective innate host defenses in the contaminants abolition. A intricate interaction between host, microbial, and surgical factors eventually fixes the inhibition or formation of a wound infection.[2]

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Primary wound closure is defined as the when wound edges are brought together (sutured/glued) for approximation where as the secondary wound healing is defined as. "The wound is permissible to granulate, may packed with gauze or with a drainage system." In this type granulation results in a bigger scar and healing process can be slow due to presence of drainage from infection. In this type of healing wound care needed on daily basis to reassure wound debris removal and allow for granulation tissue formation.[3]

The potential for infection depends on a number of patient variables such as the state of hydration, nutrition and existing medical conditions as well as extrinsic factors, for example related to pre-, intra-, and post-operative care if the patient has undergone surgery. This often makes prediction difficult about wound which one will become infected.[4] The most current systematic review and meta-analysis compares the usefulness of DPC by comprising only randomised controlled trials (RCTs) found that DPC has no advantage over primary closure (PC) in complicated appendicitis.[5] Since then, more studies have been reported in which some establish benefits of DPC[6] while some studies did not.[7,8] We therefore updated a systematic review and meta-analysis of RCTs which

aimed at comparing surgical site infection between DPC and PC in complicated appendicitis underwent open appendectomy and other contaminated abdominal wound.

MATERIALS AND METHODS

This study was conducted in the department of pediatric surgery National Institute of Child Health Karachi from February 2007 to July 2007. Study design was Experimental / Randomized study. it was carried out in the patients of below 13 year of age, divided in two groups 30 each, on alternate basis (non-consecutive) .there were 19 males and 11 female in group A and 20 males and 10 females in group B. Exclusion criteria was patients with clean, elective surgery or with chronic disease e.g. diabetes mellitus, jaundice, uremia. The patients lost follow up or died during follow up are excluded. The antibiotics used were intravenous injections of augmentin, flagyl and ceftazidim, cefotaxime and cefotriaxone. The data was entered and analyzed into SPSS version 10.0 .frequency and percentages were computed for categorical variables like age group, sex, causes of laparotomy, and outcome (wound infection, wound dehiscene, incisional hernia and ugly scar) for groups A and B. The proforma was design to note down all the findings like personal information of patients, examination findings, per op, out come and follow ups. In group A, primary closure was done that is musculo peritoneal and facial layer was closed with vicryl and skin stitches with interrupted sutures. The wound was examined 48 hours post operatively followed by dressing. The stitches were removed at the 8th post operative day. Patient was kept in follow-up initially for 1 week after discharge then 1 month after discharge and after every 3 months of discharge. In group B after the closure of musculo peritoneal layer, fascia tied with loose stitches with the sterile saline soaked gauze piece. The wound was dressed daily for 4 to 5 days followed by tightening the sutures. The stitches removed after 12 post operative day. After tightening sutures on delayed primary closure if infection was again noticed, the sutures were removed on that day, pus sent for the culture and sensitivity and the antibiotics changed according to sensitivity. Hydrotherapy until the wound becomes clean and then secondary stitches were applied and were removed when heeled completely. Patients in this group also followed after 1 week one month and finally 3 months after discharge. Same antibiotic used in Group A Patients also given to this group of patients. Both groups have 30 patients each with 13(43.33%) cases of perforated appendix.6(20%) cases of abdominal trauma.5(16.66%) typhoid perforation and 6(20%) included intestinal obstruction, worms infection, gut atresia, Hirschprungs disease, ruptured liver abscess and primary peritonitis.

RESULTS

A total of 60 patients under going laprotomy included in this study patients were divided in two groups ,30 patients under went primary skin closure (group A) and 30 patients under went delayed primary closure (group B). The median age of the patients were 9 years (ranging from 2 days to 13 years), majority of the patients were between 6 to 13 years of age in both groups. Out of 60 patients 39 (65%) were males and 21 (35%) females with male to female ratio 1.9:1 proportion of difference of gender was not statistically significant (chi square =0.07, P value =0.78).About 13 patients under went appendectomy and about 8 appendectomy wounds get infected with greenish yellow pus, pain redness at the wound and fever, which was usually of high grade the hospital stay of the patient increased from about 2 days to 8 days as pus used to drained daily send for culture and sensitivity daily dressings then drugs started according to the sensitivity and the drugs which were not available in the hospital had to be purchased by the patient himself which was the huge load on patients attendants pocket because the patients were usually of underprivileged background. and only 4 cases got infected which closed by secondary intention.

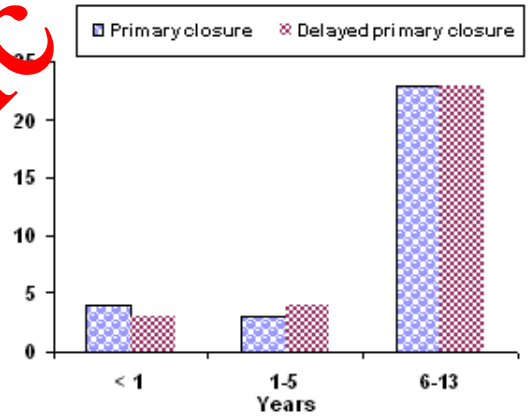

Fig.1: Age distribution of patients in both groups

Figure No.1: Age distribution of patients in both groups

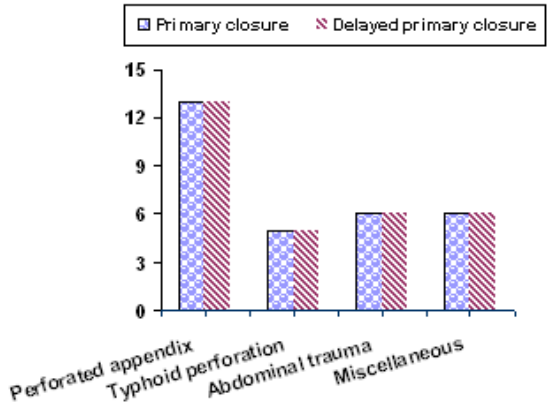

Figure No.2: Type of cases selected for both groups

The results regarding the typhoid perforation patients was that among 5 patients about 4 which close by primary intention developed infection, wound dehescience, incisional hernia, ugly scar where as these problems did not created in secondary wound closure technique. The total rate of wound infection in group A was 18 patients that is 60% where as total rate of infection in group B was 10 patients that is 33.33%. Four patients in group A develops wound dehiscence where as in group B no wound dehiscence occurred (Figs.1-3, Tables 1-3).

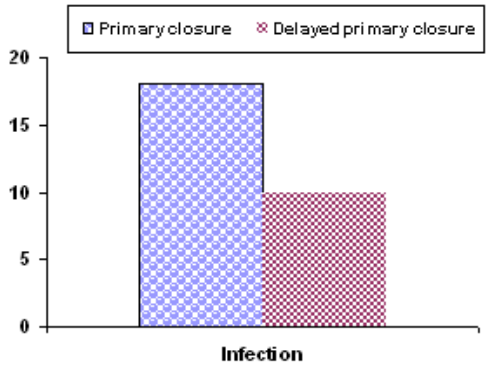

Figure No.3: Rate of infection in both groups

Table No.1: Outcome according to groups for perforated appendix

Outcome	Primary closure (n=13)	Delayed primary closure (n=13)
Wound infection	8	4
Wound dehiscence	0	0
Incisional hernia	0	0
Ugly scar	0	0

Table No.2: Outcome according to groups for typhoid perforation

Outcome	Primary closure (n=5)	Delayed primary closure (n=5)
Wound infection	4	1
Wound dehiscence	2	0
Incisional hernia	2	0
Ugly scar	2	0

Table No.3: Outcome according to groups for abdominal trauma

Outcome	Primary closure	Delayed primary closure
Wound infection	3	2
Wound dehiscence	0	0
Incisional hernia	0	0
Ugly scar	0	0

DISCUSSION

Among the hospital acquired infection Surgical site infection (SSI) is one of the most common type, caused by wound contamination by exogenous or endogenous bacterial introduction during surgical procedures. Once it occurred, would cause a patient pain, cost of treatments, prolonged hospital stay, and loss of function.[7] There are different studies been carried out to decide whether which type of wound closure will be beneficial for closure of contaminated wound. A study carried out at Ayub teaching hospital in 2012 shows that Delayed primary closure is the optimal management strategy in case of perforated appendicitis as it decreases the incidence of wound infection this study has been carried out in adults.[6] There are number of studies been carried out regarding that topic most of them deal with only perforated appendix and address to adult age group but none of them consider the paediatric age group patients and other different abdominal cases. It is still a matter of debate whether delayed primary closure (DPC) of contaminated abdominal incisions reduces surgical site infections compared with a primary closure.[8] So that we can say that this study is distinctive in sense that this covers only the paediatrics age group and different kinds of operations been considered here as compared to other studies which discussed appendicitis mostly. There is another study conducted in India in 2009 which also showed delayed primary closure is a sound incision management technique in 81 patients with dirty abdominal incisions. It significantly lowers the rate of superficial SSI as well as fascial dehiscence and reduces the mean CIH time and hospitalization. This study includes the adults mostly.[9] Another study carried out in Pakistan 2011 in the adult patients also displayed that. There frequency of Surgical Site Infection was significantly lower after delayed primary closure of contaminated wounds as compared to primary closure.[10] Study carried out in India during 2013 in about 60 patients in whom a different procedure of linear sub dermal wound closure was carried out its proved to be a better choice as compared to the primary wound closure.[11-13]

CONCLUSION

Delayed primary closure for contaminated abdominal wound result in decreased wound infection .There is increased incidence of wound infection in primary closure for contaminated wound the local signs that were noted after development of wound infection, presence of pus usually yellowish green in colour along with fever, anorexia, vomiting, pain. There is less chance of wound dehiscence and bad scar formation of contaminated wounds which closed by delayed primary closure, there is less morbidity, short hospital stay of about a week as compared to15 to 20 days in the contaminated wound that closed by primary intention hence resulting in less financial burden to the parents as patients came in the hospital are usually belong to poor socioeconomic groups earning on daily wedges.

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

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Original Article

Intestinal Tuberculosis

Incidence of Intestinal Tuberculosis in Patients Presenting in Emergency with Intestinal Perforation- A Review of 1000 Patients

Muhammad Afzal Sajid[1], Muhammad Naveed Shahzad[2], Muhammad Ayub[1] and Muhammad Hamid Chaudhary[1]

ABSTRACT

Objective: The present study was undertaken to document the presentation of intestinal tuberculosis in patients with intestinal perforation that present to the emergency department of Nishtar Hospital Multan.

Study Densign: Observational / Descriptive / cross sectional study

Place and Duration of Study: This study was conducted at Nishter Hospital, Multan. from 2007-2015

Materials and Methods: A proforma was filled which was approved by hospital ethical committee.1000 patients who were admitted in in A & E department Nishtar Hospital,Multan with intestinal perforation were included in this study. Histopatology specimen were sent. Results were labeled as either presence or absence of intestinal tuberculosis.

Results: 1000 patients, complying with the inclusion criteria were included in the study. The mean age of the patients was 45± 5 years. 289 (28.9%) were in the age group of 20-30 years of age.312(31.2%) were in the age group 31-40 years.243 (24.3) were in age group (24.3%). 156 (15.6%) were from age group 51-60.

Regarding age, majority of the patients 532 (53.2%) were females, and 468 (46.8%) were males. Duration of symptoms ranged from 1 day to >3 days. 312 (31.2%) had symptoms for 1-2 days. 432 (43.2%) had symptoms for 2-3 days and 256 patients had symptoms for more than 3 days. All had histological evaluation .

Conclusion: 23% patients were found to have tuberculosis

Keywords: Intestinal Tuberculosis, Intestinal Perforation

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INTRODUCTION

Tuberculosis (TB) is a chronic granulomatous disease which is caused by *Mycobacterium tuberculosis*. The typical site of infection is the lung, but it may involve other sites. Abdominal tuberculosis is the sixth most common form of extra-pulmonary tuberculosis after lymphatic, genitourinary, bone and joint, miliary, and meningeal tuberculosis respectively.[1-3] Tuberculous bacteria spreads to the gastrointestinal tract via blood, ingestion of infected sputum, or via direct spread from adjacent organs.[4-6] There are three gross morphological forms of tuberculous enteritis: Ulcerative, hypertrophic, and ulcerohypertrophic.[7] The ulcerative type, which commonly affects the ileum and jejunum, is characterized by a single or multiple transverse ulcers, the healing of which leads to stricture formation, and may perforate, bleed, or form fistulas. The hypertrophic and ulcerohypertrophic types commonly affect the ileocecum and cause obstruction.[8]

It usually runs an sluggish course and presents late with complications especially acute or sub-acute intestinal obstruction due to mass (tuberculoma) or stricture formation in small gut and ileocaecal region or gut perforation leading to peritonitis[9, 10]. Inspite of advances in medical imaging, the early diagnosis of abdominal tuberculosis is still a problem and patients usually present when complications had occured.[7]

Perforation is a grave consequence of abdominal TB, and has high morbidity and mortality rate.[11-13] The low incidence of tuberculous perforation is due to reactive fibrosis of the peritoneum.[14-16] However, in recent years, intestinal perforation, which was relatively rare in the past, has been reported more frequently. The cause of this remains unknown.

Globally, there is emergent alertness about the substantial morbidity and mortality associated with abdominal tuberculosis. As far as Pakistan is concerned, we need mass awareness and distribution of knowledge about the

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medical and socioeconomic consequences of this common but dreadful public health issue. The present study was undertaken to document the presentation of intestinal tuberculosis in patients with intestinal perforation that present to the emergency department of Nishtar Hospital Multan.

MATERIALS AND METHODS

A observational / descriptive / cross sectional study of 1000 patients were conducted in accident and emergency department Nishtar Hospital Multan .Patients records were analyzed from January 2007 to December 2015. All the patients of age 20 -60 years of age presenting with generalized abdominal pain, tenderness on palpation and gas under right dome of diaphragm on x-ray chest were included in this studied. Patients with ASA grade III and IV, INR > 1.5, history of abdominal trauma, known case of peptic ulcer, history of abdominal radiotherapy and mesenteric ischemia were excluded from the study. Informed consent was taken from each patient. Perforation of intestine on exploratory laparotomy was labeled. Histopathology specimen were sent. Gross findings recorded were length of the intestine, number of strictures, perforations, and ulcerations, circumference of the stricture compared to the circumference of the intervening normal intestine, relationship of the perforation to the stricture, form of lesion (ulcerative, proliferative, or ulceroproliferative), draining lymph nodes, serosal tubercles, and mesenteric vasculature. Microscopic features recorded were granulomatous inflammation without necrosis, granulomatous inflammation with necrosis, and necrosis with acid-fast bacilli positivity (AFB positivity), in sections from the intestine, lymph nodes, and mesenteric vasculature. Sections were stained by Hematoxylin and Eosin (H and E) and Ziehl-Neelsen (ZN) stain for acid fast bacilli. A known positive control section was used to ensure that correct differentiation had been achieved.Results were labeled as either presence or absence of intestinal tuberculosis. Data was analyzed using SPSS 17. Descriptive statistics were applied to calculate mean and standard deviation for age and duration of symptoms of disease. Frequencies and percentages were calculated for gender and presence or absence of intestinal tuberculosis.

RESULTS

1000 patients, complying with the inclusion criteria were included in the study. The mean age of the patients was 45± 5 years. 289 (28.9%) were in the age group of 20-30 years of age.312(31.2%) were in the age group 31-40 years.243 (24.3) were in age group (24.3%). 156 (15.6%) were from age group 51-60.

Regarding age, majority of the patients 532 (53.2%) were females, and 468 (46.8%) were males. Duration of symptoms ranged from 1 day to >3 days. 312 (31.2%) had symptoms for 1-2 days. 432 (43.2%) had symptoms for 2-3 days and 256 patients had symptoms for more than 3 days. Data analyzed is shown in table 1.

Table No.1: Data analyzed

Age groups	Count	Percentage
20-30 years	289	28.9 %
31-40 years	312	31.2%
41-50 years	243	24.3
51-60 years	156	15.6
Total	1000	100%

Sex	Count	Percentage
Male	468	46.8%
Female	532	53.2%

Duration of symptoms:

Duration	Count	Percentage
1-2 days	312	31.2%
2-3 days	432	43.2%
>3 days	256	25.6%
	1000	100%

Presence of intestinal tuberculosis

Presence of tuberculosis	Count	Percentage
Yes	233	23.3%
No	767	76.7 %

DISCUSSION

Tuberculosis has re-emerged as a devastating disease during the last decade with a high morbidity and mortality. Pakistan is among those five nations that account for more than 50% of tuberculous cases worldwide. The disease is considered to be the fourth major cause of all deaths in Pakistan[7], and the second commonest cause of intestinal perforation.[17].

Intestinal Tuberculosis can affect any age group but is more common in adolescence. The ages of the patients in this study ranged from very young to very old, majority were in between 20 to 40 years, which is consistent with other studies also[9, 18-20]. This study shows a slight female predominance (53.2%). This result is in accordance with other similar series which report slight female predominance.[21-23]

Tuberculosis accounts for 5-9 per cent of all small intestinal perforations in sub-continent , and is the second commonest cause after typhoid fever[24, 25]. Evidence of tuberculosis on chest X-ray and a history of subacute intestinal obstruction are important clues. Pneumoperitoneum may be detected on radiographs in only half of the cases . Tubercular perforations are usually single and proximal to a stricture[26]. Acute tubercular peritonitis without intestinal perforation is

usually an acute presentation of peritoneal disease but may be due to ruptured caseating lymph nodes.[3]

A study conducted by Arunima Mukhopadhyay et al,[27] found out that the commonest mode of acute presentation,out of 70 cases of intestinal tuberculosis, was intestinal obstruction (47%) followed by perforative peritonitis (31%), acute appendicitis (10%) and others (12%) [27] .These results are consistent with our results. We found out that 23.3% of patients presenting with intestinal perforation had intestinal tb on histopathology.

In a study of 86 cases of intestinal Tuberculosis, conducted by Baloch et al [28]. They found out that Seventeen (19.8%) patients of intestinal tuberculosis presented with peritonitis due to visceral perforations. These results are consistent with our study.

Early acknowledgement of the condition is key to minimizing morbidity and mortality. However, the identification of features in immunocompromised patients with tuberculosis can be anticipated to be even more perplexing than in immunocompetent patents. Untreated and undiagnosed intestinal tuberculosis carries a mortality rate of as high as 60% [29], whereas treated abdominal tuberculosis carries a mortality rate of about 15% [30]. In particular, intestinal tuberculosis can lead to perforation, which carries a mortality rate of 30% [31].

Thus it is imperative to do early diagnosis and prompt treatment of perforated intestinal tuberculosis so that mortality and morbidity can be reduced.

CONCLUSION

Abdominal tuberculosis is defined as infection of the peritoneum, hollow or solid abdominal organs with *Mycobacterium tuberculi*. The peritoneum and the ileocaecal region are the most likely sites of infection and are involved in the majority of the cases by hematogenous spread or through swallowing of infected sputum from primary pulmonary tuberculosis. Pulmonary tuberculosis is apparent in less than half of the patients. Patients usually present with abdominal pain, is usually made through a combination of radiologic, endoscopic, microbiologic, histologic and molecular techniques. Antimicrobial treatment is the same as for pulmonary tuberculosis Surgery is occasionally required.23% patients were found to have tuberculosis of intestine it is remarkably similar to data in third world country.

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

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Original Article

Snake Poisoning in Children

The Study of Clinico-Epidemiological Profile and Outcome of Poisonous Snake Bites in Children

Shahzadi Asma Tahseen

ABSTRACT

Objective: To study the poisonous snake bite cases with particular attention to demography, epidemiology, clinical profile and outcome in children.

Study Design: Observational / Descriptive / cross sectional study

Place and Duration of Study: This study was carried out at the Pediatric Unit I, Bahawal Victoria Hospital Bahawalpur from 1st January 2012 to 31st December 2013.

Methods and Materials: The record of 41 cases of poisonous snake bite admitting in Bahawal Victoria Hospital Bahawalpur was reviewed. Detailed information was collected.

Results: Among 41 cases studied 85.37% were males. The majority of the cases (68.29%) were in the age group of 10-15 years. The majority of the cases (97.56%) were from rural area. The site of bite was on lower extremity in 82.93% cases. The timing of snake bite was evening or night in 87.8% cases. The 82.29% snake bites were in the months of monsoon season. The main type of envenomation encountered in this study was vasculotoxic. The common symptoms include local edema in 82.92%, pain in 75.61%, cellulitis in 53.41%, bleeding from bite site in 43.9% cases. The mean (±SD) antisnake venom vials used was 9.39 (±4.77). Abnormal bleeding profile was noted in 58.54% cases. The mean (±SD) hospital stay was 6.27 (±1.75) days. The case fatality rate was 4.88%.

Conclusion: Anti snake venom should be a part of primary health care in areas where snake bites are common thereby referral to higher centers can be minimized and timely treatment can be given.

Key Words: Vasculotoxic; Case fatality rate; Snake antivenom; Neurotoxic; Snake envenomation

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INTRODUCTION

Snake bite is one of the most neglected public health issues in the tropics. Because of serious under-reporting, the true worldwide burden of snake bite is not known. In Pakistan, 40,000 bites are reported annually, which result in up to 8,200 fatalities. There are about 216 species of snakes identifiable in Indopak, of which 52 are known to be poisonous.[1]

The patterns of snake envenomation depend on the species of snake, which may cause minimal envenomation, neurotoxicity, vasculotoxicity and myotoxicity.[2,3] The severity of envenomation is classified as mild or grade I (local effects such as swelling, pain, tenderness confined to the immediate bitten part, no systemic effects, no clinical or laboratory coagulation abnormality), moderate or grade 2 (local effects such as swelling, pain, tenderness/echymoses extending beyond the immediate bitten part, systemic effects like nausea, vomiting, fasciculation, mild hypotension with evidence of coagulopathy but without clinical bleeding), or severe or grade 3 (local effects extending and involving the entire limb along with systemic effects like shock, severe bradycardia, tachypnoea or respiratory failure and marked coagulation abnormalities with bleeding manifestations).[4]

There is evidence that peak case fatality is in young children and the elderly. Snakes inject the same dose of venom into children and adults [5,6] so children seem to have more serious local and systemic complications than adults.[7]

Majority of studies done in the world have been done on adult snake bite victims. Studies done solely on pediatric victims are very sparse especially performed in Pakistan.[8] Bite circumstances, the time taken to admit patient to the hospital, clinical presentation, complications and the outcome of pediatric snake bite victims may differ significantly from adult snake bite victims. Therefore, this study was carried out in a tertiary care unit of South Punjab, Pakistan with particular attention to demography, epidemiology, clinical profile and outcome of snake bites in children.

MATERIALS AND METHODS

This observational / descriptive / cross sectional study was conducted in Pediatric unit I, Bahawal Victoria

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Hospital Bahawalpur, a tertiary referral hospital of South Punjab, Pakistan.

The ward admission record of patients below the age of fifteen years who were diagnosed as 'snake bite' from 1st January 2012 to 31st December 2013 was reviewed. All the children who presented with alleged history of snake bite and received polyvalent antisnake venom for treatment were included in the study. The children with incomplete data or who received antisnake venom before presenting in this hospital were excluded from the study.

The clinical data about age, sex, season pattern, biting site, first aid prior to admission, clinical manifestations, main type of envenomation (vasculotoxic, neurotoxic, myotoxic), number of anti-snake venoms vials used, complications and outcome were obtained from case records and were analyzed. Anti snake venom was giving according grading of envenomation. In Grade 1 antisnake venom dose 5 vials, in Grade 2 ten vials while in Grade 3 fifteen vials were given by intravenous infusion. Depending on the clinical response the dose was repeated till all the systemic signs and symptoms disappeared. The end point of the study was normalization of hematological or neurological parameter or death.

Vasculotoxicity (or a vasculotoxic bite) was defined as severe local symptoms along with a marked vasculotoxic effect, which included intense local pain, swelling, echymoses, blisters, severe oozing, nausea, vomiting, vasculotoxic effects such as petechial haemorrhage, epistaxis, hematemesis, melena and eventual shock. Neurotoxicity (or a neurotoxic bite) was defined as the existence of mild local symptoms, marked neurotoxic manifestations, including a slight burning pain at the bitten site with triple response, nausea, vomiting, giddiness, lethargy, muscular weakness, spreading paralysis (within 15 minutes to 2 hours), dysphasia, dysphagia, ptosis, external opthalmoplagia, slow laboured breathing and respiratory arrest with or without convulsion. Myotoxicity (or a myotoxic bite) was defined as a sharp initial prick (painless later), generalised muscular pain, stiffness (starting in the neck and limb girdle), myoglobinuria as characterised by the brown discolouration of urine and eventual respiratory failure.[9]

Statistical Analysis: Data was entered and analyzed using SPSS 16. Descriptive analysis using inter-quartile ranges and mean± Standard deviation (SD) were described for continuous variables. For categorical variables, proportions were depicted as percentages of cases. The appropriate statistical test was used where needed and p value less than 0.5 were taken as significant.

RESULTS

A total of 41 cases of snake bite were admitted in the hospital during the study period. The various characteristics of studied cases are shown in table I.

Table No.I: Characteristics of the cases (Total cases 41)

Characteristic	Cases	Percentage
Age groups		
Less than 5 years	3	7.32
5-10 years	10	24.39
10-15 years	28	68.29
Sex		
Male	35	85.37
Female	6	14.63
Area		
Rural	40	97.56
Urban	1	2.44
The site of bite		
Lower extremity	34	82.93
upper extremity	6	14.63
Neck	1	2.44
The timing of snake bite		
Evening / night	36	87.8
Timing of rest of day.	5	12.2
Biting season		
Monsoon season (July to September)	28	68.29
April to June	9	21.95
January to March	3	21.95
October to December	1	2.44
Snake bite evidence		
Snake bite marks seen	29	70.73
Snake seen either by the victim or the bystander	25	60.97
Two clear, distinct bite marks	18	43.9
Main type of envenomation		
Vasculotoxic	36	87.8
Neurotoxic /Myotoxic	5	12.2
Taken by the patient in reaching the hospital after bite		
Within 6 h of the bite	3	7.32
Within 6-12 hours of bite	17	41.46
Within 12-24 h	16	39.02
More than 24 h after the bite	5	12.2
Local first aid treatment from quacks or peers or health practitioners before reaching the hospital	14	34.15
The type of first aid given		
Application of tourniquet	10	24.39
Local application of lime	2	4.88
Chillies	1	2.44
Herbal medicine	1	2.44
The grading of envenomation		
Grade I	14	34.15
Grade 2	23	56
Grade 3	4	9.76
Prolonged PT/APPT time, prolonged bleeding time or thrombocytopenia alone or in combination	24	58.54
Blood products used		
Fresh frozen plasma	13	31.17
Blood transfusion	10	24.39
Case fatality rate	2	4.88
Complications.		
Compartment syndrome	3	7.31
Gangrene of toe	1	2.44

The mean (±SD) age of the cases was 10.76 (±3.33) years while that of the males was 11 (±3.12) and that of females was 9 (±4.64) years (p value 0.2123). The mean (±SD) time taken in the appearance of first symptom was 5.90 (±3.76) while the mean (±SD) time taken by the patient in reaching the hospital 14.22(±7.91) hours. The various clinical features seen in patients are shown in table 2.

The mean± antisnake venom vials used were 9.39(±4.77). In all cases antisnake venom was given once except in two (4.88%) cases where the doses were repeated. One case (2.44%) developed allergic reaction in the form of urticaria. The mean (±SD) hospital stay was 6.27 (±1.75) days. The surgical intervention was required in 4 (9.76%) patients while one (2.44%) patient needed ventilator care due to paralysis. The two children who died had history of bite more than 10 hours and both died within 4 hours of arrival in the hospital.

Table No.2: Clinical features of the cases (Total cases 41)

Clinical feature	Cases	Percentage
Local edema	34	82.92
Pain	31	75.61
Cellulitis	26	63.41
Bleeding from bite site	18	43.9
Gum bleed	15	36.58
vomiting	15	36.58
Hematuria	12	29.27
Hemetemesis	8	19.51
Pain abdomen	11	26.83
Respiratory distress	2	4.88
Ptosis	2	4.88
Weakness of the limbs	2	4.88

DISCUSSION

The types of snakes and their envenomation vary across the world. This study was conducted in a teaching hospital of South Punjab, the agricultural belt.

There were 85.37% males in this study. There were 90% males in the study done at the same center by Khichi et 2003.[9] Other studies [10-17] also showed male preponderance in the range of 54%-65% cases but, Ahmed et al 2011[18], unlike other studies, showed equal male to female ratio. The male predominance in these studies was due to the fact that male children were more active outdoors. Moreover there is male preference in Indo-pak subcontinent for treatment.

The mean age of the cases in this study was 10.76 years. Other studies showed mean age 8.2-9.9 years.[15,18,19] Our study showed that the majority of the cases (68.29%) were of 10-15 years age group. The other studies also showed the same pattern.[8,10-14] This may be due to the fact that older children in our part of the world have to carry out outdoor activities like looking after the cattle in the fields and field-working that exposing them to snakebites. The majority of the cases (97.56%) were from rural area. Other studies [10,32] also confirmed our findings.

This study showed that the site of bite was on lower extremity in 82.93% cases, followed by 14.63% on upper extremity. The most of the studies [8,10,12, 14,19] also showed that lower limbs were the most common site of bites but Shrestha 2002[11] and Paudel et al 2012[13] showed that the fingers and hand were the most common biting sites. The finding of most of the studies showing the lower extremity as most common biting site might be due to the fact that the snakes had been accidentally stamped while walking or playing in the dark. Children are also very curious and have the habit to explore various holes and crevices that may be the hiding places of snakes. Similarly there are increased chances to touch the snakes while cutting the grass. This may explain the bite marks on the upper limbs.

The timing of snake bite was evening or night in 87.8% cases in this study. Other studies [8, 13,14] also gave similar pattern of timings but Ahmed et al 2011[18] showed majority of the bites occurred during day time. The reason of this disparity seems to be that levantine viper (common in that area) is usually inactive during daytime, but quite alert and apt to attack swiftly if disturbed. The majority of cases (68.29%) were noted in the months of monsoon season in this study. The other studies [8,10-13,18] also confirmed this finding. The reason is snakes are compelled to come out of their shelter because of the increased humidity and temperature during these months.

The main type of envenomation varied in different studies. The main type of envenomation encountered in this study was vasculotoxic in 87.8% cases. Kshirsagar et al 2013 [12] showed the bites were vasculotoxic in 90.74% and neurotoxic in 9.25% patients while the study done by Koirala et al 2013[10] showed that in 97% cases envenomation was mainly vasculotoxic while only in 3% cases it was neurotoxic. Ahmed et al 2011[18] showed about 80% were vasculotoxic and 20% were mixed. On the other hand Paudel et al 2012 [13] showed all cases were neurotoxic.

The common symptoms included local edema in 82.92%, pain in 75.61%, cellulitis in 63.41%, bleeding from bite site in 43.9%, gum bleed 36.58% and vomiting in 36.41% cases in our study. The most common presenting symptoms included pain[8,10], local swelling[8,10,14] bleeding from bite site[10,14] in other studies. Kshirsagar et al 2013[12] found local edema in 100% and cellulitis in 15.6% of cases with vasculotoxic envenomation while diplopia in 73.3%, respiratory distress in 66.7%, pain in abdomen in 60% and vomiting in 20% cases with neurotoxicity envenomation. Unlike our study Shrestha 2002[11] and Paudel et al 2012[13] showed that ptosis was the commonest followed by respiratory distress. In these two studies most of the cases were neurotoxic.

The mean time taken by the patient in reaching our hospital after bite was 14.22 hours in this study. Ozay et al 2005 et al[15] showed the same duration of time while other studies[10,18] showed that the time taken by the patients in reaching the hospital was much less (3.8-8.97 hours). There were only 7.32% cases who reached the hospital within 6 h of the bite in our study while other studies[11-14] showed that majority of children reached the hospital in <6 hours of bite. The reason of this delay may be due to the fact that snake bite is more common in rural areas where non availability of transport during night hours makes the approach to the health centre difficult. Other reason may be the mentality of the villagers to seek treatment from quacks initially.

There were 34.15% cases who got local first aid treatment from quacks or religious persons (peers) or health practitioners before reaching the hospital. The first aid given was in the form of application of tourniquet in 24.39%, local application of lime in 4.88%, chillies in 2.44% and herbal medicine in 2.44%. Shrestha 2002[11] showed that tourniquets were used as first-aid measures in 42.5% of cases. Karunanayake et al 2014[14] used tourniquet in 9% cases while immobilization was used in 75% cases as first aid types. These differences are due to differences in local practices.

The main grade of envenomation in this study was grade 2 in 56% followed by grade I in 34.15% cases. The other studies[10,15] also showed similar pattern of grading of envenomation. The mean antisnake venom vials used in this study was 9.39 vials. The average antisnake venom vials used in other studies[10,11,13,15] were 13.29-20.7. This difference in antisnake venom vials requirement may be due to differences in the type and grade of envenomation. Allergic reactions was uncommon (2.44%) in this study as well as in other studies[12,19] but the study done by Koirala et al 2013[10] showed that 17.6% cases developed allergic reaction.

Abnormal bleeding profile was found in 58.54% cases. The study done by Koirala et al 2013[10] showed abnormal bleeding profile in 30% cases.

The mean hospital stay was 6.27 days. Ozay et al 2005 et al[15] showed the mean stay time was 6.3 while Koirala et al 2013[10] showed it was 4.98 days.

The case fatality rate in this study was 4.88%. The studies[10,12,15,19] showed case fatality 0-3.9% while other studies [11,13,14,20,21] showed higher case fatality rate in the range of 7.7-28.8%. One reason may be high number of neurotoxic type of snakes in these studies.

The complications observed were compartment syndrome in 7.31% cases and gangrene in one (2.44%) case. Kshirsagar et al 2013[12] showed acute renal failure in 0.7% cases. Ozay et al 2005 et al[15] showed the most common complication occurred during the treatment were compartment syndrome in 9.1% children and gangrene in 13%.

CONCLUSION

The key to minimizing mortality and severe morbidity is aggressive management and timely and judicious administration of adequate dose of anti-venom. The antisnake venom should be a part of primary health care in areas where snake bites are common thereby referral to higher centers can be minimized and timely treatment can be given.

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

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Original Article

Titanium Elastic Nail

Titanium Elastic Nail or External Fixator in Pediatric Femoral Diaphyseal Fractures: Complication Rate

Abdul Karim[1], Malik Asrar Ahmed[2] and Sultan Shah[1]

ABSTRACT

Objective: To compare complications rate of Titanium elastic nail with External fixator in pediatric femoral diaphyseal fractures.
Study Design: Prospective randomized study.
Place and Duration of Study: This study was carried out at the Orthopedic Department, Lahore General Hospital/PGMI, Lahore from 01.10.2013 to 01.10.2015.
Materials and Methods: Complication rate was compared in two groups of children (20 each) of 5-11 years of age with closed or Gustilo type I open femoral diaphyseal fractures treated with Titanium elastic nailing and external fixator.
Results: At final review, 3 patients in External fixator group developed superficial pin tract infection which resolved by oral antibiotics. 2 patients had a LLD (limb length discrepancy) of up to 1cm and 4 patients had mal alignment of 5-10 degree. While only one patient in Titanium elastic nail group developed pain and irritation at medial insertion point and another had mal alignment of 10 degree in AP plane. Overall there was decrease complication rate in Titanium elastic nail group.
Conclusion: Titanium elastic nail is a better choice in children of 5-11 years of age with femoral diaphyseal fractures than External fixator.
Key Words: Pediatric Femoral Diaphyseal Fracture, Titanium Elastic Nail, External Fixator

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INTRODUCTION

Femoral diaphyseal fractures in children have been managed mostly by conservative methods like spica casting and traction until recent past and surgery was reserved only for open fractures, polytrauma patients and patients with head injury.
But for the last few decades there is growing trends towards operative treatment for these fractures. Methods includes external fixation, DCP, flexible and rigid intramedullary nailing.
Until recent past we have been using conservative methods or external fixation for femur fractures in children. Recently we introduced Titanium elastic nailing for these fractures in our institution.
In this study we compared the complication rate between external fixation and titanium elastic nailing of femoral diaphyseal fractures in 5-11 years of children.

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MATERIALS AND METHODS

This study was carried out at the Orthopedic Department, Lahore General Hospital/PGMI, Lahore from 01.10.2013 to 01.10.2015. Children of 5-11 years of age and of both gender were randomly divided into two groups of 20 patients each to be managed by either external fixator or titanium elastic nail. Only patients with closed or Gustilo type I open femoral diaphyseal fractures were included in the study.
At the time of presentation, information regarding patient's biodata, mechanism of injury, fracture pattern and associated injury were collected on a Performa.
After consent and pre-op preparation, under GA fixation was done in supine position on a fracture table under fluoroscopy control.
Titanium elastic nails of variable diameter were used according to femoral canal diameter. Two nails were used for each fracture. Under GA, on a fracture table with patient in supine position, 1cm skin incision was made about 2.5cm proximal to distal femoral physes under fluoroscopy guidance. Blunt dissection up to bone was done with the help of artery forceps. The entry point in the bone was made with the help of drill bit. Titanium elastic nail was loaded on T-handle and inserted first on lateral side then on medial side up to fracture site and then pushed into the proximal segment with fluoroscopy control, one by one. Protruded nail ends were bents slightly and cut short to 1cm from bone surface.

In the second group, AO external fixator was used with two schawnz screws of 3.5 mm diameter in each fragment under fluoroscopy control.

After short hospital stay, during which physiotherapy and instruction regarding implant care were explained to the patient's parents. After discharge, each patient was followed up at 1, 2,6, 9 and 12 weeks.

At final visit, range of movements, complications, parent's satisfaction and outcome assessed and documented.

RESULTS

A total of 40 patients of 5-11 years age of either gender with femur shaft fracture were selected for this study. Male to female ratio in either group was the same i.e 3:1. Mean age was 7.35 in External fixator group and 7.8 in Titanium elastic group.

Table No.I: Gender Distribution and Mean Age

Group	Gender distribution (n)	Mean age (years)
Ex. Fix	Male=15 Female=5	7.35
TEN	Male=15 Female=5	7.8

The cause of fracture was RTA in 65% of cases while 35% cases presented with history of fall.

Both groups showed satisfactory outcome as far as the other parameters are concerned. Complications rate was significantly lower (10%; 2 of 20) in Titanium elastic nail group than External fixator group (35%; 7 of 20).

Table No.2: Complications of two treatment methods.

Complication	Ex. Fix Group n=20	TEN Group n=20	P value
Superficial pin tract infection	3	--	
LLD	2	--	
Mal alignment	4	1	
Entry site irritation	-	1	

Superficial pin tract infection in Ex. Fix group patients usually settled down within a week after removal of implant and prophylactic oral antibiotic for 5days. Similar was the fate of medial entry site irritation in TEN group patient.

LLD documented in two patients was less than 1cm which is of no clinical significance as documented in literature.

Mal alignment was significantly higher in Ex Fix group patients. Initially 5-10 degree of mal alignment were noted which reduced to 0-5 degree on further follow up due to remodeling process.

DISCUSSION

Femoral diaphyseal fractures constitute less than 2% of all pediatric fractures[1]. Various methods of treatment can be used depending on age of child and fracture pattern. Immediate application of hip spica or traction followed by a cast remains the standard treatment for most of fractures in children younger than six years.[2-5] But the treatment of choice for these fractures is controversial in 5-11 years of age. Conservative treatment was preferred method in the past but due to prolong immobilization, long hospital stay, difficult nursing care and late return to school, there is growing trends towards operative treatment for the last few decades[6]. Choices include external fixation, dynamic compression plate (DCP) and intramedullary nailing.

External fixator provides good stability and early mobilization but is associated with the problems of apprehension of an external device, transfixation of lateral structures, pin tract infection, less callus formation, relatively longer time for fracture union and weight bearing and a definitive risk of refracture[7,8] makes it less favorable choice than Titanium elastic nailing[9].

Plate fixation is effective treatment for pediatric femoral fractures[10]. Advantages include familiarity of technique, anatomical reduction, rigid fixation and better nursing care with increase parent's satisfaction. However it is associated with large exposure, increase periosteal stripping, increase blood loss, risk of infection, prolong period of immobilization, hardware failure, large dissection for plate removal, LLD and chances of refracture[10,11].

Intramedullary nailing used for these fractures include interlocking nail, rigid and flexible nails.

AVN of femoral head and coxa valga have been reported with interlocking nail when attempted in skeletally immature patients[12]. Although results have been good with rigid intramedullary nailing[13] but there has also been increasing number of reports of osteonecrosis of femoral head[14,15].

Flexible intramedullary nailing seems to be a better choice for this age group because it is simple and when applied with close methods so fracture hematoma is not disturbed with less chances of infection. The periosteum is left undisturbed. Flexible intramedullary nail fixation, a sort of internal splint, not only maintains the length and alignment but also permits sufficient micromovements at fracture site to generate excellent callus formation[16]. Because flexible intramedullary nailing allows rapid mobilization of child with little risk of AVN of femoral head, physeal injury or refracture, there is recent surge for this method's popularity[17]. Transvers, short oblique and short spiral fractures with minimal comminution in the 5-12 years age group are the best indication for titanium elastic nailing[17,18,19]. Currently it is the treatment of choice for skeletally immature child older than six year of age with a transverse fracture of middle 60% of femoral diaphysis[14].

Bar-On et al reporte better results with flexible intramedullary nailing than external fixator[9].

Flynn et al found flexible intramedullary nailing advantageous over hip spica in treatment of femoral diaphyseal fractures in children[2].

Buechsenschuetz et al reported that flexible intramedullary nailing is superior to taction and casting

in terms of union, scar acceptance and overall patient satisfaction[20].

The most common complication associated with this technique is entry site irritation and pain[19,21]. These are usually associated with long and prominent distal nail end (more than 2cm). Other common complications mentioned in the literature include angulation, proximal nail migration, minor LLD, inflammatory reaction due to nail and knee stiffness[22].

CONCLUSION

Titanium elastic nail is a better treatment option for the pediatric femoral diaphyseal fractures for the age group of 5-11 years.

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

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Original Article

Assessment of Periodontal Status of Miswak and Toothbrush Users from Karachi. A Comparative Study

Comparison of Miswak and Toothbrush Users

Maria Khadija Siddiqui[1], Saima Hanif[2], Muhammad Najib Sidiki[3], Madiha Inayatullah[4] and Saqib Ali[4]

ABSTRACT

Objective: The purpose of this study was to assess the periodontal status of miswak and toothbrush users of Karachi.

Study Design: Observational / Descriptive / cross sectional study

Place and Duration of Study: This study was conducted in the OPD Department, Jinnah Medical and Dental College Karachi from 02.05.2015 to 30.09.2015.

Materials and Methods: Participants of the study include the students of Madrasah Islamia and patients presenting to OPD of Jinnah Medical and Dental College Karachi for routine dental checkups. We chose purposive sampling for the study. Subjects were selected on the basis of their use of miswak (Group A), use of toothbrush (Group B) and use of Miswak and Toothbrush (Group C). Each subject was examined using CPITN probe to evaluate gingival bleeding, dental calculus and probing pocket depths of the selected surfaces. Selected surfaces were lingual surface of mandibular anterior teeth and buccal surface of maxillary posterior teeth. Subjects who did not consent to participate in the study were excluded from the study. SPSS version 20 was used for data analysis.

Results: In group A 40% participants had calculus, 50% had less than 3mm pockets and 20% had more than 3mm pockets. 30% had no gingival pocketing. In group B (brushing only) 4% subjects had calculus and 96% had less than 3mm pockets. In group C (miswak plus toothbrush) 40% had calculus and less than 3mm pockets and 10% of subjects had more than 3mm pocket depth. 50% had no pockets at all. Gingival Bleeding was demonstrated in all groups with Miswak users being 30% and tooth brush users and tooth brush plus miswak users being 10 % each.

Conclusion: The periodontal status of all 3 groups was found to be satisfactory but examination revealed that the users of toothbrush only (group B) possess healthier periodontal tissues.

Key Words: Periodontal status, Miswak and toothbrush.

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INTRODUCTION

Miswak is a famous tree twig, used by many inhabitants as a form of traditional tooth brush. In Muslim societies, miswak use has also been found to be a religious practice and a type of ritual for cleansing of teeth[1]. Around 600 AD, miswak has been described well in Islam and was in regular use by the Prophet Muhammad (PBUH) himself. Not only that it is a mechanical mean of achieving oral hygiene, its antimicrobial benefits have also been demonstrated well[2]. Miswak when soaked in water releases benzylisothiocyanate (BITC) from the roots which hinders cariogenic substances to reach the treated tissue.[3] Despite proven efficacy of miswak, various studies have stated use of different devices among people to maintain oral health. This may be due to change in the people's views on miswak over a period of time; or with the availability of modern aids of achieving oral hygiene. Decade ago, in Saudi Arabians with diverse socioeconomic backgrounds it was revealed that with advancement of education, choice of habitual miswak consumption decreased[4]. In 2005, a study on Jordanian adults also showed most educated people prefer tooth brush only (72%) followed by toothbrush-miswak both (20.5%) for oral hygiene maintenance.[5] When it comes to effectiveness regarding periodontal health, Miswak in comparison to tooth brush has shown variation in results. None of the recent research strongly suggests which aid among miswak or toothbrush is more effective in keeping better periodontal health.

In this study the aim was to compare the effects of different means of maintaining oral hygiene on periodontal health among adults of Karachi.

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MATERIALS AND METHODS

A comparative cross-sectional study was conducted on habitual miswak and toothbrush users in Karachi. Purposive sampling was done. The age range of participants was between 18-65 years. The participants included the students of Madrasah Islamia and patients presenting to Outpatient Department of Jinnah Medical and Dental College Karachi for routine dental checkups. All subjects were interviewed regarding their oral hygiene habits and verbal consent was taken for their participation in the study. There were 3 groups of subjects, Group A (Miswak users), Group B (Toothbrush users) and Group C (Miswak and Toothbrush users).Oral examination was done to record gingival bleeding, periodontal pockets and calculus. Each subject was examined using CPITN probe of the selected surface. Selected surfaces were lingual surface of mandibular anterior teeth, buccal surface of maxillary posterior teeth.

Inclusion criteria: Regular users of oral hygiene aids at least once a day were included in the study.

Exclusion criteria: People who use dentifrice with finger or had any systemic disease which affects periodontal health were excluded. Those not willing to participate in the study were also excluded.

RESULTS

All the data was analysed using the 20th version of SPSS. Mean age was 31.47years with a Standard deviation of 11.97. 150 participants comprised the study population; 50 in each group. There were 93 males (62%) and 57 females (38%).

In group A (miswak only group) 40 % (n=20) subjects had calculus where as in group B (brushing only) 4 % (n=2) had calculus. Group C (miswak plus toothbrush) also had calculus in 40% (n=20) of the subjects. Gingival Pocketing was measured using CPITN probe. Among Group A, 50% (n=25) participants had less than 3mm deep pockets and 20 %(n=10) had more than 3mm deep pockets. 30 %(n=15) had no gingival pocketing. In Group C, 40 % of the subjects (n=20) presented with less than 3mm deep pockets, 10 %(n=5) with more than 3mm periodontal pocket depth, whereas; half of the group 50 % (n=25) had no pockets at all. Subjects of group B with less than 3mm of periodontal pockets were 56 %(n=28) while 40% (n=20) of subjects had no pockets at all. 4 % (n=2) were diagnosed with 3 mm or more pocket depth.

Gingival Bleeding was observed in all groups including 30% of Miswak users (n=15); 10 %
(n=5) toothbrush users and tooth brush plus miswak users each.

1. Periodontal status in all groups:

a) Gingival Bleeding:

Results	**Miswak Users n=50 (A)**	**Toothbrush Users n=50 (B)**	**Miswak+ toothbrush users n=50 (c)**
Present	15(30%)	5(10%)	5(10%)
Absent	35(70%)	45(90%)	45(90%)

b) Gingival Pockets:

	Miswak Users (A)	Toothbrush Users (B)	Miswak+ Toothbrush Users(C)	Total n (%)
No Pockets	15(30%)	20(40%)	25(50%)	60 (40%)
Pockets: < 3mm	25(50%)	28(56%)	20(40%)	
>3mm	10(20%)	2(4%)	5(10%)	
Total Cases of Gingival Pockets n(%)including >3mm <3mm pocketing	35(70%)	30(60%)	25(50%)	90 (60%)

2. Calculus:

	Miswak Users	**Toothbrush Users n=50 (B)**	**Miswak+ toothbrush users**	**Total**
Present	20 (40%)	2 (4%)	20(40%)	42 (28%)
Absent	30 (60%)	48 (96%)	30(60%)	108 (72%)

DISCUSSION

Dental treatment cost is ranked as fourth among the most expensive treatments.[6] People of our country are extremely threatened by this[7] so dental health is neglected and many patients remain untreated.[8,9,10]

The need for prevention and treatment of dental diseases is gaining attention with the ever increasing prevalence of oral diseases.[11] The use of the most primitive oral hygiene aid known as 'miswak' has been overlooked due to modern interdental brushes and toothbrushes.[12] Miswak has anti-septic, anti-bacterial properties and decreases plaque accumulation. It is 9.35 times more effective against caries[13] and halitosis since it consists of tannic acid, sulphur and sterols.[14] It was reported in 1984 and again in 2000 (1984 and 2000 international consensus) by WHO (World Health Organization) that miswak can be used as an efficient aid for dental hygiene maintenance.[15] More than 50% of the rural population of Pakistan select miswak as tooth cleaning aid against toothbrush.[16] It has also been reported that rural population in Nigeria (90%), Tanzania (90%), Saudi Arabia (50%) and India (50%) are using chewing sticks for oral hygiene maintenance. Around 43% of the urban population in India is also

using chewing sticks.[17,18,19] Studies have shown that there is no significant rise in plaque deposition when using toothbrush in comparison to miswak[20,21,22]; however, one study claimed that using miswak in interdental spaces is more effective[23].

A similar study in Riyadh on Pakistani adults in 2013 revealed that no considerable difference was found in the choices between tooth brush (29%) and miswak (23%) use for brushing purpose while use of both miswak and tooth brush was highly prevalent among them.[24] Although miswak use has proved to be a significant mode of oral hygiene control, its impact on oral health in comparison to toothbrush is yet to be confirmed. The current study focuses on the periodontal health status among regular toothbrush users and miswak users or the users of both.

In the current study, gingival bleeding on probing which indicates plaque induced gingivitis was observed more frequently among group A miswak users than either group B or C. This may suggest that group A has more gingivitis and is effective in plaque removal. Calculus was found in group A and group C. Interestingly, only toothbrush users showed only 4% calculus, brush appears to be better in removing plaque and therefore hinders calculus formation.

Fewer pockets were found in only toothbrush users than miswak users however both tools group presented with only 10% of participants with more than 3mm of pocket depth. Moreover, only less than 3mm deep pockets were found in the tooth-brushers while more than 3 mm deep pockets were also observed in group A and group C. This brings up the opinion that using only tooth brush(group B) as cleaning aid has better outcome in periodontal tissues and has an edge over the other two groups in preventing periodontal pocketing. Pockets of 4mm or more were not found in any group may be because all groups had regular tooth cleansing habits thus had good control on deep pocketing.

CONCLUSION

The periodontal status of all 3 groups was found to be satisfactory since all 3 groups were using aids for tooth cleaning but examination revealed that only toothbrush users (group B) possess healthier periodontal tissues.

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Original Article

Prevalence of Glucose-6-phosphate Dehydrogenase Deficiency in People Visiting Health Care Center, KFU, Al-Hasa

Ashok Kumar, Hussain Mohammed Alhiwaishil, Ali Abdulkarim Alsuliman, Ali Hussain Alrufayi and Hany Aly Hassan

ABSTRACT

Objective: To determine the prevalence of G6PD deficiency in people visiting Health Care Center of King Faisal University (KFU), Al-Hasa.

Study Design: Observational / Descriptive study.

Place and Duration of Study: This study was conducted at the Health Care Center, KFU, Al-Hasa, from August 2014 to April 2015.

Materials and Methods: Patients presenting with weakness and anemia were included in the study. Total 214 patients, consisting of 116 children (age 3 to14 years) and 98 adults (age 15 to 50 years), were screened. The blood samples were analyzed by using "G6P-DH Fluorescence Screening Test". This kit detects fluorescence under U/V lamp if the sample has G6PD activity.

Results: Total 36 (16.8%) of the 214 patients, tested, were deficient for G6PD. Among those deficient patients, 15 (7%) were children (11 males and 4 females), and 21 (9.8%) were adults (13 males and 8 females). The highest prevalence of G6PD-deficiency occurred among adults, particularly males.

Key Words: G6PD deficiency, Red blood cells, Enzymopathy, Anemia.

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INTRODUCTION

Glucose-6-phosphate dehydrogenase (G6PD) is the major enzyme for red blood cells (RBCs) to get the energy from glucose[1]. It produces reduced nicotinamide adenine dinucleotide phosphate and reduced glutathione phosphate that play an important role in protecting cells from oxidative damage. Deficiency of G6PD is an enzymopathological disorder of RBCs in humans which is caused due to mutations in G6PD gene located on X-chromosome[2]. Therefore, this deficiency is most common among males[3]. G6PD deficiency is one of the most common enzyme disorders, affecting more than 4 million people worldwide[4]. It has high prevalence in Mediterranean, Asian, and African people[5]. In the Middle East it has high range that varies from 3% to 29% [6,7]. In Asia, the prevalence ranges from 6.0% to 15.8%,[8,9] and in Africa, from 3.6% to 28%[9,10].

Lots of individuals with G6PD-deficiency usually do not experience any signs or symptoms, only some individuals present with hemolytic anemia. A wide range of hemolytic syndromes is included in the clinical manifestations of G6PD deficiency. G6PD deficiency is usually associated with acute hemolytic anemia and neonatal jaundice, which is usually a result of external oxidant agents[11]. Some oxidant agents such as fava beans[12-14], topical application of henna[15,16] and infections[17-19] have been reported to trigger hemolytic anemia in G6PD-deficient individuals. This disorder had been also shown to be common in our region Al-Hasa several years ago (in 1998)[20]. However, there is a paucity of current prevalence and awareness of G6PD deficiency among people visiting Health Care Center of KFU. Therefore, this study was specifically aimed to determine the prevalence of G6PD deficiency among people visiting the Health Care Center of KFU.

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MATERIALS AND METHODS

Subjects and samples: The patients presenting with weakness and anemia were screened for G6PD. The study contained 214 patients, consisting of 116 children (age 2 to 14 years), including males 49 (42.2%) and females 67 (57.8%), and 98 adults (age 15 to 50 years old), including males 25 (25.5%) and females 73 (74.5%). The peripheral blood sample (2-3ml) was collected and analyzed for G6PD screening.

Material and Procedure: For screening of G6PD, the kit "G6P-DH Fluorescence Screening Test" (supplied by UDi Dammam company) was used. 5 micro liters of whole blood were collected in a suitable anticoagulant and added into a test tube with 100 micro liters of working reagent, provided in the kit. This mixed tube

was put on Filter Paper and allowed to air-dry for 30 min. After the Filter Paper was completely dry, it was observed under a long wave UV-lamp in a darkened room. The positive and negative controls, provided in the kit, were run in parallel. The samples which did not fluoresce were labelled as deficient for G6PD.

RESULTS

Out of 214 patients, 36 (16.8%) were deficient for G6PD. Amongst those G6PD deficient patients, 15 (7%) were children, including 11 (73.3%) males and 4 (26.7%) females, and 21 (9.8%) were adults, including 13 (61.9%) males and 8 (38.1%) females. Figure 1 describes the number of patients, deficient for G6PD-deficiency in individual group. Figure 2 shows the percentage of the patients, deficient for G6PD in individual group. On the basis of individual groups of the subjects, we had 4 groups, i.e., female children, female adults, male children and male adults. The highest prevalence of G6PD-deficiency was found among male adults which was 13 of 25 (52%). The second most common group was male children, which was 11 of 49 (22.4%). The third common group was female adults, which was 8 of 73 (10.9%), and the fourth group was female children which was 4 of 67 (5.9%).

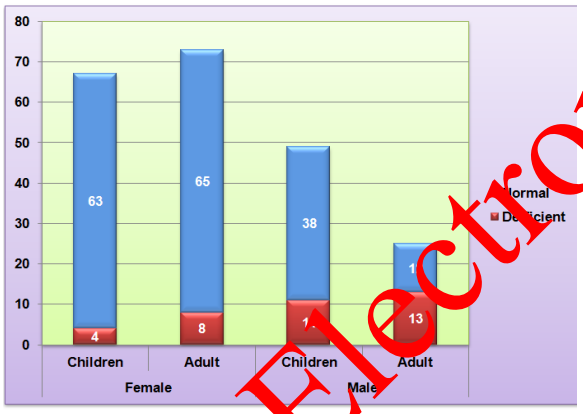

Figure No.1. Number of patients with G6PD deficiency (red box) among individual group.

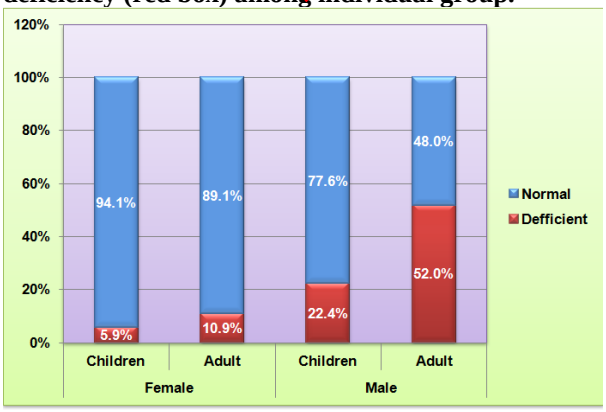

Figure No.2. Percentage of patients with G6PD deficiency (red box) among individual group.

DISCUSSION

G6PD deficiency has high prevalence in Mediterranean, Asian and African people[5].The prevalence of G6PD deficiency in all over the Middle East was reported to have high range variation from 3% to 29%[6,7]. In Asia, the prevalence ranges from 6.0% to 15.8%[8,9] and in Africa between 3.6% to 28.0%[9]. Saudi Arabia, which is in the Middle East, is a large country with around 30 million people living in an area of 2,149,690 km2, and the research has reported variable incidence of G6PD deficiency among Saudi populations in its various regions[21]. In our current study, we investigated the prevalence of G6PD deficiency in people who visited Health Care Center of KFU Al-Hasa with the clinical presentation of weakness and anemia. We investigated a significant prevalence of this disorder, which was 16.8%. In comparison to the other studies, we have unique findings as we investigated the patients who were or belonged to the literate members of King Faisal University AL-Hasa. The highest prevalence of G6PD deficiency was found among adult males. The second most common group was male children. Our findings justify the prevalence of G6PD deficiency among males as it is an X-linked disease which most commonly affects this group[2,3]. Other groups in KSA have investigated the prevalence of this disease in general population which include both literate and illiterate people. For example, previous reports on G6PD deficiency showed the prevalence of 45.9% in Al-Qatif and 36.5% in Al-Hasa Saudi Arabia[22]. Alabdulaali et al. reported an incidence of G6PD deficiency of 1.13% in blood donors in the capital city Riyadh[23], while in the rural city of Al-Kharj it was found to be 1.91%[24]. Other studies in the big cities, such as, Najran, Riyadh, Bisha, Al-Ula and Makkah[25-27] showed the range from 3.5 to 6.7%. The frequencies in Al Hofuf, Khubar and Jazan[25], and Al-Baha[28], and Al Qunfudhah[29] have been reported to be between 11.6 and 18%. Alharbi and Khan showed the prevalence of 4.75 in Taif city[30]. These results variate from region to region, being common in certain regions and less common in other regions of KSA.

Though our results are consistent with the previous studies to have the prevalence of around 17% of this disease, our findings differ from other groups as we chose a restricted group of patients, belonging to literate people of KFU, who visited the health care center of KFU with the clinical presentation of weakness and anemia. Therefore, in our study the patients who were not deficient for G6PD, might be suffering from other hematological disorders. This is an alarming sign that there is a lack of awareness of G6PD deficiency disorder among even the KFU people. Furthermore screening and genetic counciling programs for not only G6PD deficiency but also for other genetically transmitted hematological disorders need to be conducted throughout Al-Hasa region on big

platform including educational institutes and public places.

Therefore, there is a need to arrange the awareness programs on G6PD deficiency and its screening and genetic counciling throughout Al-Hasa province.

CONCLUSION

This study has shown a significant prevalence of G6PD deficiency among KFU population and their families. Further health programs on G6PD deficiency need to be launched throughout Al-Hasa region in order to avoid the factors which cause hemolysis in these patients and to prevent the transmission of this disease to the next generations through genetic counseling.

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

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Original Article

Solitary Nodule of Thyroid

To Determine the Frequency of Malignancy in Solitary Nodule of Thyroid in ENT, Head and Neck Surgery Department at Civil Hospital Karachi

Abrar Hussain Shah[1], Saleem Marfani[2] and Adnan Ejaz[1]

ABSTRACT

Objective: To determine the frequency of malignancy in solitary nodule of thyroid.
Study Design: Observational / Descriptive study.
Place and Duration of Study: This study was conducted in the Department of Otolaryngology and Head and Neck Surgery at Civil Hospital Karachi from January 2007 to July 2008.
Materials and Methods: This study comprises of 70 cases, in one and half years. We have included all cases of solitary nodule of either sex more than 10 years and excluded those patients who were exposed to radiation or underwent any sort of neck surgery previously. All Patients with solitary thyroid nodule were investigated with routine hematological and biochemical tests, thyroid profile, thyroid Scan, ultra sound neck and FNAC in outpatient department. At admission all risks/benefits of surgical procedures were explained to patients. Post-operative histopathological report of specimen was compared with preoperative fine needle aspiration cytology.
Results: In our 70 cases study 59 patients were diagnosed with benign and 11 with malignant disease. Papillary carcinoma was found the most common tumor in 63.63%.
Conclusion: Papillary carcinoma is the most common tumor in solitary thyroid nodule in our study followed by follicular carcinoma.
Key Words: Solitary thyroid nodule, FNAC, Papillary carcinoma

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INTRODUCTION

Thyroid nodules have been defined by the American Thyroid Association (ATA) as "discrete lesions within the thyroid gland, radiologically distinct from surrounding thyroid parenchyma.[1]. Thyroid nodules are common, their prevalence being largely dependent on the identification method. The estimated prevalence by palpation alone ranges from 4% to 7%,[2,3] whereas ultrasound detects nodules in 20% to 76% of the adult population,[3,4] particularly with the current use of high-resolution ultrasound techniques.[5] The reported frequencies detected by ultrasound correlate with the prevalence reported at surgery and autopsy with ranges between 50% and 65%.[6] Majority of patients with STN are in between 30 to35 years.[7]The importance of STN lies in the increase risk of malignancy in various studies from 5% to 20%.[7]

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STN were seen in both sexes, but four to six times more commonly in females.[8] The gender disparity is perhaps explained by the hormonal influences of both estrogen and progesterone, as increasing nodule size and new nodule development have been demonstrated to be related to pregnancy and multiparity.[9]Papillary carcinoma is more common histological type of thyroid cancers followed by follicular, medullary, anaplastic, non-Hodgkin lymphoma and unclassified tumors in order of frequency[10]. Number of investigations include thyroid function test, thyroid ultrasound and thyroid scan are being used to distinguish between benign and malignant STN but none of them is found to be very sensitive, and specific.[11] Fine-Needle Aspiration biopsy is considered to be the "Key investigation" in evaluation of STN.[12] If this is performed with perfection can guide exact extend of surgery in various thyroid lesions[13]. FNAC also provide knowledge of cancer cell type which aid in the planning of surgical procedures.[14] FNAC can easily be performed and accepted by patients and has low cost benefit ratio. If the sample is not diagnostic can easily be repeated.[15] FNAC is also very safe and highly accurate in evaluation of thyroid nodule in childhood.[16]

The main purpose of this study is to know the frequency of malignancy in solitary thyroid nodule so the surgical procedure can be planned accordingly.

MATERIALS AND METHODS

This is a observational / descriptive study and conducted in the department of otolaryngology and Head and Neck Surgery at Civil Hospital Karachi from January 2007 to July 2008. In the one and half year 70 patients were admitted with STN. We have included all cases of solitary nodule of either sex, more than 10 years and excluded those patients who were exposed to radiation or any sort of neck surgery previously. Thyroid profile, thyroid Scan, ultra sound neck and FNAC was carried out in outpatient department. At admission risk/benefit were explained to the patient and informed written consent was taken regarding whole management. Post-operative histopathological report of specimen was compared with preoperative cytology.

Data analysis was done using SP10.0 version. No inferential test was applied as it is a descriptive study. Histopathology is taken as a gold standard investigation to distinguish between benign and malignant lesions among the solitary nodule included in study. Frequency of malignancy in solitary thyroid nodule also calculated on histopathological basis.

RESULTS

Seventy cases of this study included 12 male and 58 female (table: 1). Female to male ratio was 4.8:1. Age range for our patients was observed between 12 to 70 years. Mean patient age was 36.6 years. Thyroid profile (table: 2) reported 67 patients with euthyroid and three hyperthyroid where these hyperthyroid after making them euthyroid,were operated. Thyroid scan (table: 3) revealed malignancy observed in all patients of cold nodule. Ultrasound (table: 4) was also performed in all patients where 8 patient were of solid, 2 of complex and 1 of cystic nodule found with malignancy. Fine needle aspiration cytology was also performed in all the cases where 61 patients (87.14%) were reported with benign disease, 8 patients (11.4%) with malignant and 1 patient with suspicious cytology.

Histopathological results revealed that 59 patients (84.28%) were having benign nodular disease and only 11 patients (15.71%) with malignant disease. Frequency of malignancy (table: 5) was calculated which revealed papillary carcinoma in 7 patients, anaplastic in 2 patients, hurthle cell in 1 patient and medullary carcinoma in 1 patient.

In this study malignancy was noticed in 2 male patients and 9 female patients. Out of the 2 males, 1 patient was having medullary carcinoma and other reported with papillary carcinoma. Among 9 female patients, 6 patients presented with papillary, 2 had follicular and 1 patient had hurthle cell carcinoma. None of patients presented with anaplastic carcinoma in this series.

Table No. 1; Sex distribution of 70 cases

S. No	Sex	No of patients	Percentage
1	Male	12	17.14%
2	Female	58	82.85%

Table No. 2: Thyroid Function Test

Sr. No	Thyroid Function Test	No of Patients	Percentage
1	Hyperthyroid	3	4.28
2	Hypothyroid	0	0
3	Euthyroid	67	95.71

Table No. 3: Thyroid Scan (Tc99) finding

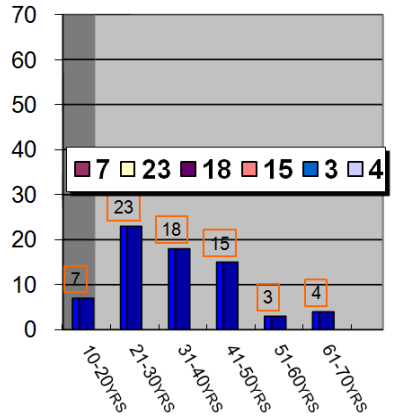
S. No	Type of nodule	No of Patients	Malignant	Benign	%age of total no of patients
1	Cold	66	11 (16.6%)	55 (83.3%)	94.3%
2	Hot	4	00	4	5.7%
3	Warm	00	00	00	00%

Table No.4: Thyroid Ultra Sound Finding

S. No	Nature of nodule	No of Patients	Malignant	Benign	%age of total No of Patients
1	Solid	43	8 (18.6%)	35 (81.3%)	61.4%
2	Cystic	19	01 (5.26%)	18 (94.7%)	27.14%
3	Complex	8	02 (25%)	06 (75%)	11.4%

Table No. 5: Frequency of malignancy in solitary nodule of thyroi

S. No	Types of malignancy	No of patients	Percentage
1	Papillary	07	63.63
2	Follicular	02	18.18
3	Hurthle cell	01	9.09
4	Medullary	01	9.09
5	Anaplastic	00	00



Graphic presentation of solitary nodule in various age groups.

DISCUSSION

Solitary thyroid nodule (STN) is a common thyroid disorder. Clinically recognized thyroid carcinoma constitutes less than 1% of human malignant tumors. The risk of malignancy in solitary thyroid nodule is

greater than other thyroid swelling. The risk of malignancy in generalized thyroid swelling is about 3% and in solitary thyroid nodule it is about 15% to 25% in literature[17]. Many studies are available in the literature for effectiveness of different investigations for accurate diagnosis of solitary thyroid nodule. Unfortunately, none of the investigation is found to provide accurate diagnosis in every case except FNAC (which is also having false positive as well as false negative results).

In our study female to male ratio is 4.8:1. Mean patient age is 36.6 years and most common site of solitary thyroid nodule is right lobe of thyroid which is similar to that of Iqbal A et al.[18] while Lumachi F et al, observed female to male ratio 4.1:1 and mean age was 44 years.[19]

We noticed swelling in front of neck as the most common presentation followed by pressure symptoms, similar types finding were noticed by Waseer MA et al study [20]. In comparison Zuberi LM et al study, observed that solitary thyroid nodule presented in 58.7% as a "neck swelling"[21].

Thyroid scan have 100% sensitivity in our study because all malignant lesion detected on histopathology were cold nodules. However 56 patients (80%) detected with cold nodules had benign disease. In comparison Greisens O studies where scintigraphy was carried out in almost all the patients where 75% had a cold nodule[22]. Similarly, in another study the sensitivity of scan in the detection of thyroid cancer was 95.8% was observed.[23]

In contrast radionuclide perfusion study was done by Sharma R et al who considered it useful to differentiate benign from malignant cold thyroid solitary nodules with high degree of sensitivity (95%) and specificity (87.9%).[24]Our opinion regarding thyroid scan is that it provides little information regarding types of lesion. Kussam TA also stressed the limited role of thyroid scans in the initial workup of a solitary thyroid nodule[25].

The ultrasonic assessment of solitary nodule of thyroid in this study showed that malignancy was observed in 72.72 % in solid, 9.09% in cystic and 18.18% in complex nodules. In contrast to our results Ahmed I et al reported malignancy in 2[illegible]4% of solid nodules, 8.3% in the cystic nodules and 16.67% in mixed nodules[26]. However ultrasound is not helpful in clearly differentiating between benign and malignant lesion. Some others studies also identified the limited role of ultrasound in evaluation of STN.

Fine needle aspiration cytology is widely accepted as the most accurate, sensitive, specific and cost-effective diagnostic procedure in the assessment of thyroid nodule and help to select the patients preoperatively for surgery. In this study, sensitivity for cytological diagnosis of FNAC is 72.72%, specificity 99.08% positive predictive value 88.1%, negative predictive value 95% and diagnostic accuracy 94.2%. By Comparison to a local study Bukhari MH et al, reported sensitivity of FNAC as 90%, specificity 87.5%, and accuracy 87%, while positive predictive value (PPV) was 93% and negative predictive value (NPV) was 79.5%.[27]

On histopathology we found 69 patients (84.28%) were having benign nodular disease and only 11 patients (15.71%) had malignant disease. Our results are according to international results which are between 4.7-18.3%[28]. In contrast to a local study, Ahmed M et al malignancy was seen in only 5 cases (4.4%) out of 113 patients. It was seen both in cold (4.6%) as well as in warm (4.4%) nodules.[29]

Frequency of malignancy is calculated in our study where we noticed papillary carcinoma in 7 patients (63.6%), follicular carcinoma in 2 patients (18.8%), medullary carcinoma in 1 patient (9%) and huthle cell carcinoma in 1 patient (9%). Similar results were reported by Virk MA et al, where papillary carcinoma was seen in 62.5% cases.[30] In contrast, in Ahmed I et al study incidence of cancer in solitary nodule of thyroid was reported 23.7%.[31] Papillary carcinoma constituted 57.9% of the malignancy, follicular carcinoma was, 21%, anaplastic carcinoma was 15.78% and lymphoma 5%.[31] Another study which depicts frequency of malignancy in solitary nodule are papillary, follicular and anaplastic carcinomas. Papillary carcinomas had the highest frequency of 73.7%, followed by follicular and anaplastic carcinomas with the frequency of 20% and 6.7% respectively.[32] one more study similar to our results where, out of 19 malignant cases, 12(63.16%) were papillary carcinoma, 5(26.31%) were follicular carcinoma and 2(10.53%) cases were medullary carcinoma.[32]

CONCLUSION

We concluded that solitary thyroid nodule is dangerous for reasonable risk of malignancy. It should be properly investigated. FNAC is having marvelous role in pre-operative patients. In various studies although incidence of malignancy in solitary nodule varies but regarding to frequency of thyroid gland tumors , papillary carcinoma remained most common tumor in literature, as we have also reported in this study.

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

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Original Article

Hypertension in Diabetic

Prevalence of Hypertension in Diabetic Patients

Tariq Pervez[1], Jalal-ud-Din[2] and Jawed Akhtar Samo[3]

ABSTRACT

Objective: To find out the prevalence of hypertension in diabetic patients.
Study Design: Observational / descriptive study
Place and Duration of Study: This study was carried out in the Department of Medicine, Sir Ganga Ram Hospital and Fatima Jinnah Medical College, Lahore from December 2013 to May 2014.
Materials and Methods: A total of 100 patients were included in the study. Patient's demographic features and all the data were recorded on predesigned proforma and were analysed through SPSS version 16.0.
Results: Out of 100 patients, 55 (55%) were male and 45 (45%) were female. Age range was 30-65 years with mean age of 48.4±9.3 years. Weight varied from 50-100 kg with mean weight of 68.2±8.5 kg. Prevalence of hypertension was 30%. Hypertension was more prevalence in elderly diabetics (53.3±7.8 years), in patients of longer duration of diabetic (7.66±2.84 years). Retinopathy, ischemic heart disease (IHD) and neuropathy occurred frequently in diabetic hypertensive patients.
Conclusion: Diabetic and hypertension are highly associated with each other.
Key Words: Neuropathy, Diabetes mellitus, Hypertension

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INTRODUCTION

Diabetes mellitus (DM) is a most common metabolic disorder affecting a large number of populations in developed countries as well as developing countries. Hypertension also is an important health concern of world population and these diseases can occur separately or together.[1] Prevalence of diabetes mellitus is increasing worldwide and it will be 29.3 million by the year 2010.[2] Some factors influence not only mortality and morbidity but also the seriousness of complications. Among these factors is arterial hypertension. This factor altered glucose tolerance, insulin resistance; obesity and dyslipidemia comprise the metabolic syndrome.[3]

It is suggested that hypertension could be a 2-3 times more prevalent in diabetics than in general population.[4] The increase in incidence in developing countries follows the trend of urbanization and lifestyle changes, "Western-style" diet and also predisposed genetically and has influence of family history.[5]

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Established hypertension if found 30-50% of screened Caucasian patients.[4] The other ethnic groups do not show the same prevalence in spite of similar disturbances. A higher prevalence of diabetes mellitus but a low prevalence of hypertension due genotypic variations is found.[6] In patients with essential hypertension, the prevalence of diabetes is higher than in a normal population. In case central studies of hypertensive patients either untreated or receiving treatment, the prevalence of glucose intolerance ranges from 20-30%.[7] Present study was done to find out the prevalence of hypertension in diabetic patients.

Hypertension is a disease of vascular regulation in which the mechanisms that control arterial pressure within the normal range are altered. The basic explanation is blood pressure that is elevated when there is increased peripheral vascular resistance. Hypertension may be essential hypertension or secondary hypertension.[8]

MATERIALS AND METHODS

This study was carried out in the Department of Sir Ganga Ram Hospital and Fatima Jinnah Medical College, Lahore from December 2013 to May 2014. A total of 100 patients were included in the study. Patient's demographic features and all the data were recorded on predesigned proforma and were analysed through SPSS version 16.0.

RESULTS

Out of 100 patients, 55 (55%) were male and 45 (45%) were female. Age range was 30-65 years with mean age of 48.4±9.3 years. Weight varied from 50-100 kg with mean weight of 68.2±8.5 kg. Prevalence of hypertension was 30%. Hypertension was more prevalence in elderly diabetics (53.3±7.8 years), in patients of longer duration of diabetic (7.66±2.84 years). Microalbuminuria was present in 26% of the cases whereas macroalbuminuria was present in 30% of the cases. Various complications can be avoided by improving the quality of care (Table-1). Important features of hypertension have been described in table-2. Table-3 shows the diabetic complications of hypertensive and non-hypertensive subjects. Relationship of higher blood pressure and microalbuminuria is documented in table-4.

Table No.1: Complication of diabetes mellitus

Complication	No.	%age
Nephropathy	24	24.0
Retinopathy	36	36.0
Neuropathy	30	30.0
IHD	26	26.0

Table No.2: Epidemiological features of hypertension and non-hypertensive patients

Features	Hypertensive diabetic patients (30)	Non-hypertensive diabetic patients (70)
Age	53.3±7.8	46.68±8.9
Weight	72.0±6.37	66.5±5.42
Duration of diabetes	7.66±2.84	4.8±3.5

Table No.3: Frequency of diabetic complications

Complications	Hypertensive diabetic patients (%)	Non-hypertensive diabetic patients (%)
Nephropathy	50.0	50.0
Retinopathy	66.6	33.3
Neuropathy	53.3	46.7
IHD	85.0	15.0

Table No.4: Microalbuminuria and hypertension

Complications	Hypertensive diabetics	Non-hypertensive diabetics
Microalbuminuria mg/24 hours4	233.3±80	20330±100

DISCUSSION

Hypertension was found in 30% of patients of diabetes mellitus. Due to lack of a large scale recent community survey in this country and selective nature of the present study sample, no valid comparison can be made between the prevalence of hypertension in normal population and diabetics. However, we randomly selected 100 normal persons and after exclusion of diabetes in them, prevalence of hypertension was found 10% in them. It may be of some interest to state that a survey conducted in a group of sendentry workers in Lahore reported hypertension in just over 23%. This is in contrast to earlier studies done in selected communities in Pakistan in which the prevalence of hypertension was reported in 10% individualsscreened.[7] The Pima Indians have the world's highest reported incidence of diabetes. Since 1965, this population has participated in a longitudinal epidemiological study of diabetes and its complications.[9] Age and sex adjusted prevalence of hypertension was 24% in those with normal glucose tolerance. 3.4% in those with impaired glucose tolerance and 40% in those with diabetes.

Similarly in Pakistan the prevalence of hypertension was sought in 100 diabetic patients,[10] Hypertension was present in 264 patients i.e. prevalence rate of 26.4%. Another study noted 27% diabetics had evidence of hypertension.[11] A higher prevalence of hypertension was noted in a study.[12,13] The study evaluated the prevalence of risk factors for diabetic neuropathy and cardiovascular disease. The overall prevalence of hypertension was found 62.6% in them. To establish the prevalence of renal involvement and to identify associations with its most important possible risk factors in a group of patients with diabetes mellitus. The prevalence of hypertension was found to be 42%.[14] General practitioners network in France in a recently conducted study found high blood pressure in 38.8% of the whole cohort.[15] Recently, a population based study conducted showed a very high prevalence rate (67%) of hypertension in diabetics. The rate was higher in men.[16,17]

Most (87%) subjects in the present study identified peripheral vascular diseases as a complication of Diabetes Mellitus. Majority (92%) of the sample, study has identified blindness/Retinopathy as main complication of Diabetes Mellitus.[18] This may be due to the patients undergo foot sensations test every month, and eye check-up done on every 3 months. In the present study, knowledge about lifestyle modification among hypertensive subjects with DM was optimal. Almost all subjects stated that hypertension can be controlled by modifying dietary habits, 30% of subjects stated that they withdrawn from smoking and 58% subjects withdrawn from alcohol consumption for better management of hypertension with DM.

CONCLUSION

Diabetic and hypertension are highly associated with each other.

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

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Original Article

LVD

Risk Factors for Decompensation of Heart Failure in Patients with Established Left Ventricular Dysfunction

Jalal-ud-Din[1], Imdad Ali Ansari[2] and Jawed Akhtar Samo[3]

ABSTRACT

Objective: This study was aimed to identify the risk factors for decompensation of heart failure in patients with established left ventricular dysfunction.

Study Design: Observational / descriptive / cross-sectional study

Place and Duration of Study: This study was carried out at Sandeman provincial hospital, Quetta from 15th March till 14th September 2015.

Materials and Methods: One hundred fifty patients of decompensated HF with established left ventricular dysfunction (Ejection Fraction <40 %) were included in the study. Information about factors for decompensation of HF was collected from patients through a proforma during their hospital admission. The data was analyzed on statistical package for social sciences (SPSS) version 16.

Results: Out of 150 patients, 59 % had ischemic heart disease while 41 % had non-ischemic heart disease. Non-compliance with diet and/or drug therapy (56.7% and 37.3%, respectively), cardiac arrhythmias (34%), lack of follow-up (26.7%), and intake of medications precipitating heart failure (20%) were the most common risk factors for decompensation of heart failure. Among other significant risk factors were infections (11.3%), anemia (10.7%) and myocardial ischemia (10.7%). Pregnancy (2.7%) and thyroid disorders (2.7%) were less common risk factors.

Conclusion: Majority of the risk factors for decompensation of heart failure appear to be preventable, and should thus be avoided with a better and more comprehensive control of heart failure in these patients.

Key Words: Decompensated heart failure, Systolic dysfunction, Precipitating factors, Ejection fraction, Non-compliance, Ischemic heart disease, Echocardiogram

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INTRODUCTION

Heart failure (HF) is an increasing, global epidemic, particularly in the elderly, that results in significant health care expenditure, frequent readmissions,[1] disability, and mortality. It affects nearly 23 million people worldwide. The prevalence of heart failure rises with age in both men and women and affects 1 to 2 percent[2] of persons aged 45 to 54 years and up to 6 to 10 percent of people over the age of 65 years.[3] This overall increasing prevalence of HF is thought to be due to marked improvement in our current therapies of cardiac disorders,[4] such as myocardial infarction, valvular heart disease and arrhythmias which allow the patients to survive longer.[5,6] The age-adjusted incidence of heart failure appears to have remained stable over the past 20 years. Over the past 50 years, the incidence of heart failure has declined among women but not among men.[7] Survivals after the onset of heart failure has improved in both sexes[8] over the last ten years but the mortality rate is still high with approximately 50% of patients are dead at five years.

Heart failure was once thought to arise primarily in the setting of depressed left ventricular (LV) ejection fraction (EF), commonly referred to as systolic failure but today many epidemiological surveys suggest that about half[9,10] of patients who develop heart failure have a normal or preserved EFb,[11] referred to as diastolic failure. The causes of heart failure in patients with preserved systolic function also differ from those with reduced systolic function.[12-15] In the evaluation of patients with heart failure, it is important to identify not only the underlying cause but also the precipitating factors.[16] Patients with a cardiac abnormality produced by a congenital or acquired lesion such as valvular aortic stenosis or cardiomyopathy may remain asymptomatic or have limited clinical disability for many years.

Thus for management of acute heart failure, every patient must be approached individually according to the aetiology, severity of disease, clinical presentation, presence of coexisting illness and precipitating factors

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in particular. The main goals of treatment for heart failure are to reduce symptoms, prolong survival, improve the quality of life, correct precipitating processes and prevent disease progression. Once patients have developed structural heart disease (stages B through D), the choice of therapy for HF with reduced ejection fraction (EF) depends on their New York Heart Association (NYHA) functional classification. Our knowledge of the epidemiology, pathophysiology and therapy has improved dramatically during the last 20 years.[17] The pharmacological therapy of heart failure comprise of the following categories: diuretics, angiotensin converting enzyme inhibitors (ACEIs), beta blockers, positive inotropic agents and anti-arrhythmic drugs. The routine use of anticoagulants is controversial. Most experts prescribe anticoagulants only to those patients who have embolic episodes or those with atrial fibrillation or patients with severe dilated cardiomyopathy in normal sinus rhythm. Device therapy for HF, including implantable cardioverter defibrillators and cardiac resynchronization therapy, has recently been demonstrated to also result in substantial mortality reduction.[18]

The aim of this study was to evaluate the prevalence of these avoidable risk factors in a population of patients, presenting with acute decompensated heart failure who already had known depressed left ventricular systolic function (ejection fraction <40 %).

MATERIALS AND METHODS

This Observational / descriptive / cross-sectional study study was conducted in cardiology department, Sandeman Provincial Hospital Quetta over a period of 6 months, from 15th March till 14th September 2015. It was a descriptive and cross-sectional study. Patients all diagnosed cases of decompensated heart failure above the age of 18 years were included. New patients with heart failure without previous history of left ventricular failure, patients having corpulmonale or pericardial temponade and those with dementia or severe psychiatric illness were excluded. Patients history regarding precipitating factors e.g. compliance to diet and drugs, infections like respiratory tract infection (RTI) and urinary tract infection (UTI), any history of chest pain, pregnancy, palpitation, intravenous (IV) drip, intake of new drug causing myocardial depression or causing salt and water retention (e.g. calcium channel blockers, non-steroidal anti-inflammatory drugs, steroids and cyclosporine etc.) and regarding symptoms of thyrotoxicosis. Patients were regarded as "dietary non-compliant" if their daily fluid intake was equal to or more than 2.5 litres per day, or if they regularly salted their food at the table, or both. Patients who reported taking their drugs only intermittently or not at all were classified as "medication non-compliant". Set criteria for labelling the contribution of the known precipitating factors of heart failure were followed in the proforma, filled by the principal investigating physician. Investigations like ECG, X-ray chest, complete blood count, Serum urea/creatinine and electrolytes and thyroid function test when indicated, were carried out. The data was analyzed on SPSS version 16.

RESULTS

The results were analyzed and evaluated on statistical package for social sciences (SPSS) version 12. Out of one hundred and fifty patients of heart failure, 105 patients (70 %) were male and 45 (30%) were female. The mean age was 55.21±13.2 years, ranging from 20 to 80 years. 60 % of the patients were above 50 years of age (Table 1). In this study, 88 patients had heart failure due to ischemic heart disease, making 59 % of the study population, whereas in 62 patients the heart failure was secondary to diseases other than ischemic heart disease, making 41 % of the study population (Table 2). The most dominating risk factors were non-compliance to diet and drugs, found in 85(56.7%) and 56 (37.3%) cases, respectively. Cardiac arrhythmias were observed in 51 (34%) cases and 40 (27%) patients of the study population were lost to follow-up. 30 (20%) patients were observed to be taking drugs for cardiac and non-cardiac diseases, which are known to exacerbate heart failure. These drugs were in the form of non-steroidal anti-inflammatory drugs (NSAIDs), steroids, the non-dihydropyridine calcium channel blockers, cyclosporine and intravenous drips. Infections most commonly of the respiratory and urinary tract, contributed as risk factors in 17 (11%) patients. Myocardial infarction (both Q wave and non-Q wave) and anaemia, each was identified to be the precipitating factor in 16 (11%) patients of the 150 study population. 4 (2.7%) patients were found to have thyroid disorders (both hypo and hyperthyroidism), and the same number of patients developed decompensated heart failure (HF) during pregnancy. Importantly, not a single patient had vaccination against haemophilus influenza and streptococcus pneumoniae (Table 3). The ejection fraction percent (EF %) showed significant difference with arrhythmias when compared by Student's t-test with P=0.01, t= 2.80. The remaining risk factors showed non-significant results (Table: 4)

Table No.1: Age distribution in heart failure patients (n=150)

Age (years)	No.	%age
20 – 40	22	14.7
41 – 60	80	53.3
61 – 80	48	32.0

Table No.2: Frequency of causes of heart failure (n = 150)

Causes of heart failure	No.	%age
Ischemic	88	59.0
Non-ischemic	62	41.0

Table No.3: Risk factors in heart failure patients (n = 150)

Risk factors	No.	%age
Non-compliance to diet.	85	46.7
Non-compliance to drugs	56	37.3
Arrhythmias	51	34.0
Non compliance to follow-up	40	26.7
Myocardial depression, salt and water retention due to intake of new drug.	20	30
Infections	17	11.3
Myocardial Infarction	16	10.7
Anemia	16	10.7
Thyroid disorders	4	2.7
Pregnancy	4	2.7

Table No.4: Comparison of mean ejection fraction (%) with and without risk factors in heart failure patients

Risk factor	Yes	No	P value
Non-compliance to drugs	27.68±4.76	28.78±4.85	0.18
Non-compliance to diet	27.88±4.84	29.00±4.78	0.16
Infection	27.65±4.00	28.46±4.93	0.52
Myocardial infarction	29.06±3.75	28.28±4.95	0.54
Arrhythmias	26.86±4.79	29.14±4.69	0.01
Myocardial depression, salt and water retention due to intake of new drug.	29.00±4.03	28.21±5.01	0.42
Thyroid disorders	25.00±0.00	28.46±4.86	0.16
Anaemia	26.56±3.97	28.58±4.89	0.11
Pregnancy	26.20±2.50	28.40±4.80	0.37
Lack of follow-up	29.2[illegible]±4.88	28.05±4.79	0.18

DISCUSSION

In patients with stable chronic heart failure, re-admission with decompensation of heart failure relates to behavioral factors (e.g. non-compliance to diet and/or drugs or other life-style modifications), medical factors (e.g. arrhythmias, infections, ischemia, anaemia, thyroid disorders and lack of vaccination) or socio-economic factors (e.g. failing social support). Though there are a large number of studies evaluating these risk factors internationally, there is currently little information locally about the relative frequency of these precipitating factors for decompensation of heart failure.[2]

In this descriptive cross-sectional study one hundred and fifty patients suffering from decompensated HF with left ventricular systolic dysfunction (ejection fraction <40 %) were included. The mean age of the patients was 55.21±13.2 years which is in contrast to Formiga et al[19], where mean age was 76.7 years. As was expected, majority of the patients (60%) were above 50 years of age but importantly the incidence of heart failure did not increase with increasing age after 50 years. In this study 70 % patients were male and 30 % female, the predominance of male patients probably representing the high incidence of ischemic heart disease as a cause of HF in this group.

The underlying aetiology for decompensated heart failure in 59% patients was ischemic heart disease where as 41% of the study population had heart failure secondary to non-ischemic heart diseases. This is quite comparable with similar four years data of 192 patients collected by Erk[20] in which 67 % patients with systolic heart failure were male and ischemic heart disease was the leading underlying cause. In another recent study by Sarmento et al[21] reported that coronary heart disease was the etiological risk factor in 42.8 % cases of heart failure.

This study has certain limitations. The evaluation of risk factors was entirely subjective which limited our accuracy in properly estimating non-compliance to diet and medications. Similarly, sub-clinical hypothyroidism could have been missed because thyroid function tests were not carried out in all patients. Occult infections are difficult to document which can lead to underestimation of infection as a risk factor for decompensation of HF. Proper identification of these risk factors is of crucial importance in the management of decompensated HF.

In the present study non-compliance to diet and/or drug therapy was the leading risk factor for decompensation of HF, being responsible in 56.7 % and 37.3 % of cases, respectively. This is pretty much similar to the data collected in an Indian population by Joshi et al[22], where patient non-compliance with diet or drug therapy was observed in 49.6% of study population. Similarly, Hussain et al[23] reported that 44% patients of decompensated heart failure had non-compliance to diet and drugs in a Pakistani population. Schiff et al[24] studied non-compliance to medications alone and found that 57% patients reported missing or skipping medication because of various factors, particularly missed outpatient appointments. We concluded that better adherence to diet and drug was the key avoidable risk factor, highlighting the precept that better education of patients is mandatory if we want to minimize the number of hospital admissions for decompensated heart failure.

Arrhythmias contributed as risk factor in 34% cases, matching the number of patients with arrhythmias (35%) in the study of Erk,[20] but this was in contrast to 13 % cases observed by Tsuyuki et al[25] in their study.

In another study by Nieminen et al[26] cardiac arrhythmias accounted in one third of cases as the precipitating factor. We also found that 27% patients in our study were lost to follow-up to their primary physician, an important risk factor that has not been studied much before in a local population. This can also be addressed with better education of patients about the importance of regular follow-up which is proven to prevent re-hospitalization with decompensated heart failure.[27] Intake of medications known to precipitate heart failure was a significant modifiable risk factor as it was found in 20% of the cases. This is comparable to the findings of Tsuyuki et al[25] but unlike in their study, non-steroidal anti inflammatory drugs were the main drugs reported to be used by patients in this study group.[28]

Infections, predominantly of the respiratory and urinary tract were documented in 11 % patients which was in accordance with the data from Joshi et al,[22] where infections accounted as risk factor in 11.2% cases. This is also quite comparable with the studies of Hussain et al[23], Fonarow et al[29] and Opasich et al[30] showing 16%, 15.3% and 12% cases, respectively. Because pneumonia is a common precipitating factor and is associated with worse outcomes, every effort should be made to prevent pneumonia in patients with heart failure, including rigorous influenza and pneumococcal vaccination. It was also found that ischemia as a precipitating factor in the form of myocardial infarction (both ST elevated and non-ST elevated) was reported in 11% cases where as Erk[20] in his study documented more than twice this number (24%). Risk of ischemia and acute coronary syndrome may be reduced with antiplatelet agents, statin therapy, and, possibly, revascularization in eligible patients. Similar to infections and myocardial infarction, anaemia as a risk factor for decompensated heart failure is comparable in frequency to the study done by Joshi et al[22] and Hussain et al[23] who showed this to be responsible for 14.4% and 8% cases, respectively.

Thyroid disorders were more common (3%) than what Ghali et al[31] reported in their study (1%). We also found that 3% cases had pregnancy as a risk factor for decompensation of a previously stable heart failure with left ventricular dysfunction. This is in accordance with the findings of Hussain et al[23] who found pregnancy as a precipitating factor in 3% cases. In an other local study of slightly different pattern by Irum et al,[32] heart failure complicated 4.8 % pregnancies. Importantly, not a single patient in the present study population had received vaccination against haemophilus influenza and streptococcus pneumoniae, highlighting the importance of better education for our patients to prevent these possible precipitants.

When comparison of the prevalence of risk factors between male and female patients was made, it was found that non-compliance to diet and drugs was more common in male patients and so were arrhythmias and myocardial infarction. This is quite comparable to the findings of Nieminen et al.[33] Intake of drugs precipitating HF was significantly more common in females as compared to male patients, suggesting the increased use of non-steroidal anti inflammatory drugs (NSAIDs) for inflammatory arthropathies by the female patients. This suggests that physicians should educate their patients of heart failure, particularly females about the effects of the commonly used pain relieving pills. Similarly thyroid disorders were more common as risk factors in females, again reflecting their common occurrence in female patients. Males had better follow-up to their primary physicians as compared to female patients. Overall, females had more co morbidities as compared to male patients which are in accordance with a similar study in a European population by Dagres et al.[34]

The association of mean age, ejection fraction and number of hospitalization with the risk factors did not reveal significant information except arrhythmias, which showed significant difference with the mean ejection fraction (EF) with P=0.01 and t= 2.80. Larger randomized studies with bigger sample volume are recommended to better appreciate the association of these common risk factors with the mean age, ejection fraction and number of hospitalization. Similarly, comparison of these risk factors with the causes of heart failure again did not reveal significant information apart from infections which were significantly more common in patients with non-ischemic heart disease, probably explaining the common occurrence of infections in valvular heart disease.

CONCLUSION

Patients of heart failure are clinically fragile, and a variety of preventable risk factors can lead to decompensation. These precipitating factors may be identified in most patients suffering from an acute episode of decompensated heart failure. The majority of these factors appears to be preventable, and could thus be avoided with a better and more comprehensive control of the heart failure patient. Ensuring that all patients with decompensated heart failure receive vaccination for influenza and pneumococcus might also reduce the incidence of decompensation.

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

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Original Article

Myths in Dentistry

Myths in Dentistry - Perception or Truth? A Cross Sectional Survey

Mehwash Kashif[1], Muhammad Irfan Khan[2] and Abdullah Kamran[3]

ABSTRACT

Objective: To determine the knowledge, attitude and practices of people of Karachi regarding myths in dentistry.
Study Design: Observational / Descriptive / Cross sectional study.
Place and Duration of Study: This study was conducted at the OPD of Karachi Medical and Dental college and citizens of Karachi January 2015 – June 2015.
Materials and Methods: The sample size was 150. Patients were recruited through convenience sampling. Data regarding myths in dentistry was recorded on a predesigned proforma. Data was analyzed using SPSS 17.00.
Results: Results of the study shown that people with elderly age i.e. 39-50 years and with illiterate and primary level of education are most commonly involved in myths regarding dentistry. Females are the most common respondents involved in dental myths.
Conclusion: It has been concluded from the study that dental myths are common facet of our community. There is a need to carry out community awareness programmes in order to teach and guide the community for these misconceptions.
Key Words: Dentistry, dental' mythology, Oral health, belief, culture, Perception.

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INTRODUCTION

Good oral health is a characteristic for general health. It not only maintains the physical health but also improves the psychological and social wellbeing of a person. [1] The prevalence of different oral and dental diseases in Pakistani population is incredibly significant. The most common oral diseases may vary from uncomplicated dental caries up to terminal oral cancer. Studies have reported that oral cancer is the sixth most common cancer in the world[2] and it accounts for 10% of all cancers in Pakistan[3] and data from Karachi cancer registry has shown that Oral Squamous Cell Carcinoma comprises of 9.8% of all malignancies of our community.[3-6]

Myth normally arises from a traditional belief of non-scientific base, or from unqualified and untrained dental professionals called 'quacks'. Over a period of generations, such ideas become in grained in the psyche of many individuals, and pose a threat to the acceptance of scientific and modern dental treatment. In scientific terms, myth is refers to an extensive and unquestioned false perspective. Perception is a process through which an individual becomes conscious about and interpret information regarding the situation, but the course of perception is essentially subjective in nature because it is not a precise reflection of the situation. A situation can be the same for two individuals but its interpretation is different. [8]

Education plays an important role of backbone in the progress of civilized nations. The literacy rate of a country depicts its future. The overall literacy rate of Pakistan is 53% (65% for males and 40% for females which is below the optimum literacy level from a civilized nation.[9]

It has been observe that low level of education especially in females may leads to the generation of wrong perceptions and myths in life. As mothers they may leads to the progression of myths and erroneous perceptions in their offsprings. Internationally many studies have been conducted to investigate the peoples perception towards myths but scanty data is available at national level.[10,11,12,13.]

Due to dearth of data on the subject this study was planned and conducted with the objective that to evaluate the knowledge, attitude and practices of people regarding dental myths and their association with the level of education.

MATERIALS AND METHODS

The observational / descriptive / cross sectional study has been conducted from the visitors visited the OPD of Karachi Medical and Dental college and citizens of Karachi. The duration of study is six months i.e. from January 2015- June 2015. After obtaining informed

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verbal consent from the people, the sample was recruited through convenience sampling. The sample size was calculated through Raosoft software which calculated the sample size of 297 interviewee with the 5% margin of error, 95% confidence level, the population size 1300, the response distribution of 50%. We selected 300 people with equal gender distribution. i.e. 150 males and 150 females. The sample consists of 300 individuals aged 18 – 50 years. The inclusion criteria include people belonging to both genders and common people consented for the study. The exclusion criterion includes medical and dental professionals, medical and dental students, dental personnales, handicap and mentally retarded individuals and common people not consented for the study.

The investigators recorded the data in a predesigned, close-ended multiple-choice questionnaire. The questions, based on the available literature, were presented in the both vernacular to the subjects and will concentrate on the prevalence of common dental myths. In case a subject is illiterate, the proforma was filled by the researcher. The proforma consists of the demographics of individual followed by questions regarding dental myths. Data was entered and analyzed by using SPSS version 19.00. The samples were grouped on the basis of age, gender, educational status. The subjects divided into groups on the following basis:

- Age-Group 1: 18–28 years, Group 2: 29–38 years, Group 3: 39 - 50 years
- Gender-Group M: Males, Group F: Females.
- Educational status-Group a: Primary, Group b: Matric, Group c: Intermediate, Group d: Graduate. Group e: Postgraduate , Group i: Illetrate

The qualitative variables will be measured using mean ±SD while the quantitative variables will be measured in percentage.

RESULTS

Results of the study shown that people with elderly age i.e. 39-50 years and with illetrate and primary level of eductaion. Females are the most common respondents. The basic demographic of participants were tabulated in table-1. Table 2 demonstrates the relationship of educational status and dental myths and table 3, shows the relationship of age and dental myths. Figure I demonstrate the graph of patient's educational status.

Table No. I: Basic Demographic of participants

S. No.	Age	Gender	
		Males %	Females %
1	18- 28	35	73
2	29 – 38	36	33
3	39 – 50	29	43

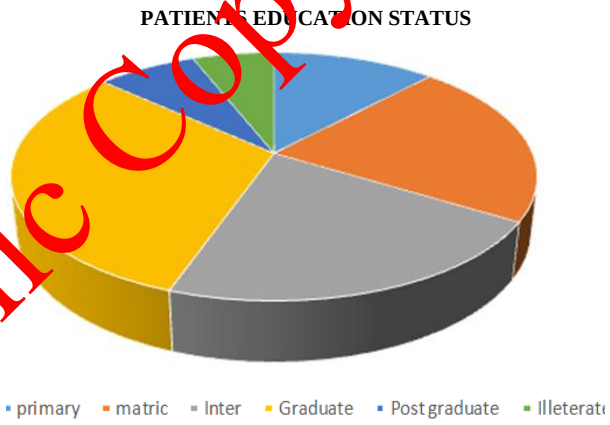

Table No.2: Relationship of Educational status and dental myths

S. No.	Educational status	Total no (n)	Extraction affects vision %	Milk teeth decay %	hereditary Cavity %	White teeth are healthy %	Oral ulcers are stomach problem %	Teething causes diarrehea %
1	Primary	36	44.4	58.3	25	72.2	63.8	75
2	Metric	65	47.6	58.4	12.3	76.9	81.5	75.3
3	Inter	65	40	43	9.2	76.9	61.5	70.7
4	Graduate	94	35.1	52.1	8.5	72.3	72.3	76.5
5	Post Graduate	22	4.5	36.3	0	59	68.1	77.2
6	Illiterate	18	38.8	55.5	16.6	83.3	88.8	61.1

Table No.3: Relationship of Age and dental myths

S. no.	Pt's age	Total no. (n)	Extraction affects vision %	Milk teeth decay %	Cavity is hereditary %	White teeth are healthy %	Oral ulcers are stomach problem %	Teething causes diarrhea %
1	18 – 28	108	33.3	47.2	13.8	69.4	60.1	65.7
2	29 – 38	69	36.2	47.8	4.2	75.3	75.3	75.3
3	39 – 50	123	43	56.9	13	77.2	79.6	80.4

DISCUSSION

Myths and wrong perceptions regarding any treatment or aspect of dentistry are very common in our society. They may arise due to low education, lack of knowledge, misinterpretation of information which is

easily available on the internet, self assumptions and lack of precision exploration before its implementation. They usually had ancestral background too. These myths if strong can constraint people in seeking oral treatments and maintenance of good oral health.

It has been concluded from the results of our study that the most common gender involved in dental myths are females. This is in consistent with the study conducted in Karachi which showed female propendrance.[1]

Our study also revealed that 39-50 years age group was most commonly involved in dental myths this could be due to increase age, strong believes on myths, lack of education, social system, strong ancestral background and lack of awareness.

The most common educational group involved in the myths is people with primary education. This revealed the role of education and knowledge. It has been in consistent with the studies conducted by Khan SA and colleagues which revealed that 30.7% are literate people in their study. [1]

The 46.3% of the people with matric qualification and age group of 39-50 years responded that removal of upper teeth affects vision. Although orbital cellulitis and facial space infections has been reported after tooth extraction. [14,15] But direct effect on vision is a non scientific logic. In a local study conducted in Karachi in 2011, revealed that 47% of the population had belief on it and it has significant association with age, gender and educational level of the individuals. [1]

Milk teeth decay need not be treated as they are going to fall off anyway it is also a misconcept and maximum people with metric qualification and 39-50 years of age people responded for it. This is in consistent with the study that was conducted in Jaipur, India and revealed that 43 % of the respondents had believe on it. [16]

My parents did not have any cavities or dental problems, so I will not either. The response distribution for this question is maximum in people with 18-28 years of age and people with primary level of education have responded for this question. This misconcept is a reflection of strong ancestral followism as every new generation has different environment, habits, dietary patterns, predisposition of diseases and lifestyle. By the advent of modern era the eatong habits are frequently shifted to processed and refined sugars and carbohydrates replacing fibrous food as compare to their previous ones.[17]

It is also a misconcept that if the tooth is white in colour, it is healthy. Tooth colour is a genetically determined and it usually reflects the color of dentine. Normal tooth colour varies from white to yellowish pale. There are many causes of tooth discoluration[18,19] but people generally have this misconcept that only teeth, which are white in colour, are healthy. The results of our study has shown that highest proportion of illiterate people and elderly age i.e. 39-59 years people gives maximum response to this question. People should aware that they must seek proper consultation for any tooth discoluration rather than making self-assumptions as this may leads to further delay diagnosis and therefore treatment.

The only cause of bad breath & oral ulcers is stomach problem. Again illiterate and elderly age group have the highest response rate for this question. Oral ulceration can be secondarily occur because of pernicious anemia, vitamin B2 deficiency and plummer vinson syndroem etc. [20] Halitosis and bad breath can be caused by variety of factors and only GIT diseases are not responsible for them.[21] People should seek care and treatment for it as once appropriate diagnosis has been made the treatment can be easily rendered. [22]

Teething will cause severe diarrhoea and fever in children. In our study elderly people and surprisingly people with postgraduate qualification gives maximum response for this question. This is in consistent with the study which revealed that 75% of patients agreed teething is responsible for fever, diarrhea and sleep disturbances. However these problems are due to systemic infections and upset.

It has been recommended that the level of education should be increased for every individual. Community awareness programmes must be planned and initiated which educates and teaches people regarding dental myths. Dentist and dental practitioners should councill the patients for their misconcepts about dental treatments. Government should discourage quackery practice and guides the citizen for their oral health through oral health programmes. Media should also play positive role in educating people regarding authentic dental treatments.

People who have low standard of living, are not well educated, should be given due attention for dental health education and awareness programs.

CONCLUSION

It has been concluded from the study that dental myths are common aspect of our community. There is a need to carry out community awareness programmes in order to teach and guide the community for these misconceptions.

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Original Article

Stapled Hemorrhoidectomy

Patients' Satisfaction after Stapled Hemorrhoidectomy Versus Doppler Guided Hemorrhoidal Artery Ligation

Ansar Latif[1], Anila Ansar[2] and Sher Afgan[1]

ABSTRACT

Objective: Assessment of the patient's satisfaction undergoing treatment for haemorrhoids, after stapled haemorrhoidectomy and haemorrhoidal artery ligation methods of surgery at Khawaja Muhammad Safdar Medical College, Sialkot, Pakistan.

Study Design: Prospective and analytic study.

Place and Duration of study: This study was conducted at the Department of Surgery, Khawaja Muhammad Safdar Medical College, Sialkot from from December 2012 to June 2015.

Materials and Methods: All patients presenting in surgical out patients department above 18 years with third degree haemorrhoids were included in the study. Data of 82 patients (stapled haemorrhoidectomy n=55 and haemorrhoidal artery ligation n=27) was collected from December 2012 to November 2015. Patients were distributed in two groups depending upon the surgical procedures carried out. Full detailed history, examination, and investigations were performed. Patients with grade III hemorrhoids underwent the RAR procedure (Recto Anal Repair) i.e. Doppler guided haemorrhoidal artery ligation (DG-HAL) combined with restoration of prolapsed hemorrhoids to their anatomical position with longitudinal sutures. Results of treatment were assessed by regular follow up. Recording of variables and feedbackof the patients with minimum 3 months follow up, was made and analysed.

Results: Out of 82 patients included in our study, Male patients were more in number in our study while 43 years came out to be, of the mean age. Something coming out from the anal canal, painful evacuation of bowels, bleeding per rectum and constipation are the chief presenting complaints.

Conclusion: Generally, patients with piles except having severe prolapsed haemorrhoids had postoperative pain, lesser complications and acceptable results in long term can be achieved, in patients undergoing Doppler Guided Haemorrhoid Artery Ligation and Recto Anal Repair. Haemorrhoid artery ligation is a procedure associated with much less pain, in comparison to the stapled haemorrhoidectomy and patients can resume normal routine job, early. Long-term complications still require to be seen and assessed by studies with longer follow up. A lot depends on treating surgeon, his experience, skill and acumen.

Keywords: Hemorrhoids, Ligation, RAR (Recto-anal repair), DG-HAL (Doppler guided Haemorrhoidal artery ligation), Stapled Haemorrhoidectomy.

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INTRODUCTION

Haemorrhoids is one of the commonest illnesses making up major work load in the surgical set up[1].The pathophysiology of this condition is uncertain. Majority of the population elder than 50 years are likely to suffer from haemorrhoids of some severity[2]. Almost all human beings will get this disease minimum once during their life[3]. Classifying haemorrhoids: Stage I Haemorrhoids presenting with bleeding only, Stage II Haemorrhoids that prolapse and reduce at own, Stage III Haemorrhoids which prolapse and require reduction and Stage IV Prolapsed haemorrhoids that cannot be reduced.Depending upon presenting complaints, varied methods of treatment like Baron's band ligation, Cryotherapy, Electro cautery and Injection of Sclerozing Agents and ultimately Surgery. Surgery remains the acceptable final treatment of grade III piles[4]. Each method ofhaemorrhoidectomy has its merits and demerits as well as method-specific complications, including anal canal strictures, sensory loss, and sphincter damage resulting in incontinence[5]. Conventional open and closed haemorrhoidectomy is being replaced by newer techniques with less complications and recurrence is almost negligible, but the patients havepainful defecation after surgery and delayed return to normal daily activities[6]. Invention and

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use of circular stapling gun for treating haemorrhoids has good results as regards to postoperative pain, lesser hospital stay and resuming daily routine[7].

Haemorrhoidal artery ligation is also gaining popularity with even more advantages but requires specialised equipment of Doppler sensors to exactly locate the site and depth of feeding arteries[8,9]. First introduced by Morinaga et al. in 90s', is a procedure that ligates and contracts haemorrhoid tissue after indicating the upper rectal artery branch supplying the haemorrhoid with the help of Doppler signal and monitor[10].

International studies are there analysing merits and demerits of these methods of treatment but not much work has been done in Pakistan. The present study was a prospective analysis of the outcome of haemorrhoidectomies by stapled method and Doppler guided haemorrhoidal artery ligation, in Department of Surgery, Allama Iqbal Memorial Teaching Hospital affiliated with Government Khawaja Muhammad Safdar Medical College, Sialkot. A comparison of stapled haemorrhoidectomy with HAL and RAR (recto anal repair)as regards duration of surgery, blood loss, pain after the procedure, early and delayed morbidity, hospital stay, time required to return to normal activities, and the cost of the surgical procedure.

MATERIALS AND METHODS

Prospective study based on a treatment of 82Patients who were followed up for at least 3 months. Amongst these 55 patients opted for haemorrhoidectomy by stapled method and 27 patientsunderwent Haemorrhoidal artery ligation with Recto Anal Repair. This analysis was not randomized, details of the procedures were told to the patients and choice of operating technique done by the patients according to affordability and wishes. Preoperative antibiotics were given to all the patients. This analysis was not randomized, details of the procedures were told to the patients and choice of operating technique done by the patients according to affordability and wishes. Preoperative antibiotics were given to all the patients.

All the surgeries were done using general and spinal anaesthesia in lithotomy position. A specialized Anoscope with Doppler sensor was used and introduced to anal canal along with a specially designed sleeve. The sensor is required to be placed about 3-5 cm from upper dentate line to indicate the rectal arteries. The exact site and depth of the arteries were confirmed using Doppler ultrasound and displayed on the monitor. Then a double stitch is applied with Vicryl 2/0 at the identified spot.After application of ligature, it was checked by loss of signals on Doppler sensor and the knot tightened using a knot pusher.

Postoperative pain was assessed by grading as no pain, pain requiring no treatment, treatment with oral analgesics and treatment with intravenous analgesia. Recurrence of disease, morbidity data,Duration of hospitalization, pain in postoperative period, duration of operating time and time taken for resuming daily activities was recorded. Every patient was assessed in person. The assessment of result was recorded on a proforma, inclusive of symptomatology as pain and discomfort, itching, bleeding per rectum, urgency and incontinence and patient's opinion of outcome grading as poor, fair, good or excellent.

The patients having grade III haemorrhoids were included. Symptomatic haemorrhoidal disease with prolapsing haemorrhoids, reducible manually and no history of faecal incontinence prior to enrolment. Patients with recurrent haemorrhoids, diabetes, grade I and II as well as having less than 3 months follow up were excluded from the study. Similarly, Patients with co-existing medical problems, perianal sepsis, inflammatory bowel disease, colorectal tumours, pre-existing sphincter injury; Pregnancy and patients unfit for general or spinal anaesthesia were excluded as well as patients currently taking certain medication like antiplatelet drugs.

The results of the treatment in this study was shown as mean ± standard deviation. The analysis of statistics was done on programme of SPSS version 21.

RESULTS

In time period of 2 years and 11 months, the patients of 3rd degree piles with varied presentations were admitted and operated: with conventional open and closed haemorrhoidectomy in surgical department of Allama Iqbal Memorial Teaching Hospital affiliated with Khawaja Muhammad Safdar Medical College Sialkot, Pakistan. Total of 779 haemorrhoidectomies were carried out, of which 102 patients opted for new techniques. Only 82 patients fulfilled the inclusion criteria of this study as regards grade III and follow up after treatment. The general data of our patients in the study is shown in Table I.

Table No.I: General data (n=82)

Age	20-40 years: 26(31.70%) 40-60 years: 48(58.53%) >60 years: 8(9.75%)
Sex (m : f)	(59:23) (70.8%:29.2%)
Presenting complaints	Bleeding 42(64.6%) Something coming out of anus: 21(32.3%) Painful defecation: 18 (27.7%) Constipation: 6(9.2%) Perianal itching: 11(16.9%) Weakness: 4 (6.2%)
Degree of haemorrhoids	3rd degree- 82 (100%)
Stapled haemorrhoidectomy	55 (69.2%)
Haemorrhoidal artery Ligation	27 (30.8%)

The differential data collected in the two groups is highlighted in Table 2.

Table No.2: Morbidity data

		Stapled Hemorr-hoidectomy group (n=55)(100%)	Hemorrhoidal artery ligation group (n=27) (100%)
Operating time		35 – 90 mins (mean 51 mins)	35 – 65 mins(mean 39 mins)
Postope-rative pain	No pain Pain but no treatment Pain requiring oral analgesia Pain requiring intravenous analgesia	19(34.54%) 15(27.27%) 16(29.09%) 5(9.09%)	12(44.44 %) 8(29.62 %) 5(18.5%) 2(7.40%)
First defecation after surgery		Average time 18 hrs	Average time 16 hrs
Early complicati ons	Urine retention	3(5.45%)	0
	Secondary bleeding	2(3.63%)	1(3.70%)
	Incontinence	1(1.81%)	0
	Wound infection	5(9.09%)	1(3.70%)
	Others	0	0
Late complicati ons	Anal stenosis	0	0
	Anal incontinence	1(1.81%)	0
	Stricture	0	0
	Recurrence	4(7.27%)	1(3.70%)
	Others	0	0

The Recto Anal Repair procedure was performed in 35 minutes time (25 – 75 minutes) calculated from induction of anaesthesia and shifting back to surgical postoperative wardfrom the operation theatre. On average 5, (4 – 8) ligatures / number of Sensored arteries were done for HAL, the commonest site being 3 and 11 o' clock position in supine patient.Recurrence of clinical complaints were bleeding in 6 (7.31%) patients, itching in 5 (4.1%) and pain in (3.3%). Complications of haemorrhoidectomy were urgency of stools in 2(3.65%), incontinence to flatus 2(3.65%) and persistent pain 1(1.81%).

For assessment of patient's satisfaction, following parameters were recorded. Table 3.

One of the 27 patients (3%), 73-year-old male, reported occasional incontinence problems at the follow up, Check-up 3 months postoperative (incontinence to flatus, off and on soiling of undergarments) having complaints started 30 days after operation.

During the follow up one year after Recto Anal Repair, there was one new patient of prolapsed haemorrhoidsi.e. recurrence.Not a single case of persistent bleeding per rectum was reported and patient's opinion of satisfaction assessment questionnaire came out to be excellent in majority 95%,in stapled group and 98% in HAL group.

Table No.3: Patients parameters

	Stapled Hemorrhoidectomy group	Hemorrhoidal artery ligation group
Expenses of Surgery	37000/= (± 7000)	42000/=(± 9000)
Hospital stay	2.5 days	1.5 days
Return to work	4-7 days(mean 5.3)	2-5 days(mean 3.1days)
Recommendation for surgery for recurrence and for other patients with same complaints	95%	98%

DISCUSSION

Most of our patients were in the group ranging from 41-60 years while above 60 years were less. Reason being that older age group is still convinced of conventional techniques while the age group of 41-60 years because of better communication and access to modern technologies could easily be counselled for treatment and expenses to be borne.

Our patients were mostly male as expected but too less number of female patients in our study can be explained on local cultural and religious grounds; disliking of female patients to be treated by male surgeons.

Operating time in DG HAL group is relatively less as compared to SH group as more dissection is involved. However this was not a major factor for patients' satisfaction

The time of surgery was quite short in the method of DG HAL patients (mean 38.75 minutes) versus the stapling technique i.e. (mean 50.75 minutes) in our study.

Bickchandani et al.[11], in his study Comparison of Open Haemorrhoidectomy with stapling method published the finding of lesser blood loss and shorter duration of operation time in Stapled Haemorrhoidectomy. Other studies by Gravieet al.[12] and Mehigan et al.[13] came out with similar findings. The problem of pain in SH (Stapled Haemorrhoidectomy) group was more in this procedure.

Hospital stay in our study was on average remained 3.5 ±1.5 days in the two groups which was comparable to the studies of Bikhchandani et al.[11] , and Shalaby et al.[14] The patient's main concern was early return to normal work without complications, and that was 4-7 days and 7-12 days for stapled haemorrhoidectomy and

haemorrhoidal artery ligation respectively. These findings were not much different as shown in the above mentioned studies.

In injury of coming back to activities of day to day life;Mean value, 2.3 ± 2.0 days following operation. Cost because of equipment involved in HAL and its disposable sensors, the expense borne by the patients in HAL group is relatively high that is average PKR 42000/- while PKR 37000/- in Stapled haemorrhoidectomy. These can be compared with other studies which show the cost in their local currencies.

The judgement by the patients about their surgical outcome was declared , poor in 6% (n= 5) , fair in 5% (n=4) , good in 11% (n=9) and excellent by 79.4% (n = 64).

Regarding the inquiry for opting surgery for second time; the reply was "yes" in 94.841% in stapled group and 98.02% in HAL group: similarly recommendation of the same procedure for other patients having same disease.

Retropneumoperitoneum and pneumomediastinum which has been reported in some studies and having grave effects were not encountered in our patients. Major postoperative complications like, sepsis, perforation of rectum or Fournier's gangrene were not encountered in our patients. Recent onset pain inAnorectum was reported by 2 patients. Reason being the purse string suture located near the dentate line, thus touching the sensible Anoderm, might be a reasonable explanation for anal pain. Gencosmanogluet al.[15] and Carapeti et al.[16] i.e., had results which are comparable to our patients. You and Colleagues [16] showed that the pain after surgery was reportedly less in patients with closed haemorrhoidectomy. Arbman et al. did not find any difference among the results of two methods of haemorrhoidectomy. Post-operative Complications like acute intestinal obstruction , rectal perforation or rectovaginal fistula after stapling method reported in literature were not encountered in our study[13,14]. These complications happened due to inadequate experience and can be overcome once the learning of the technique is matured. We were fortunate for not having such complications.

In the stapling method group, one patient had recurrence of haemorrhoids and one patient had incontinence to flatus. A long-term follow-up study by Ganioet al.[17]in his study has shown no differences between the outcome of both the surgical approaches. While, Van de Stadt et al. found a higher incidence of recurrence in prolapse after heamorrhoidectomy by stapling technique.

In contrast, Van de Stadtet al.[18] revealed a higher risk of reprolapsing piles requiring surgery after stapled Anopexy.

Skin tags after surgery were found in 13% (n=11) of the patients.

Smyth et al. found incidence of residual skin tags in 45% of their patients after stapled technique. Most of the patients were completely symptom free and no further procedure was required. Our patients in the study were not at all concerned about these tags.

The early complications were minor.Cheetham et al.[20], showed 31% patients to have in their study of stapled haemorrhoidectomy, found 31% of patients to have faecal incontinence of minor grade and Postoperative pain persisting for 15 months. Reportedly the cause was not defined speculating that incorporation of muscle in the doughnut mightOr it could be because of close placement of purse string suture to dentate line causing sensitive skin and muscle impingement.

Studies by Bickchandaniet al.[11], Shalaby et al.[14] and Mehigan et al.[13]showed almost same complications in open and stapled haemorrhoidectomy. Molloy and Kinsmore[21] highlighted a patient of retroperitoneal sepsis following stapling procedure and suggest routine use of antibiotic prophylaxis. All our patients had prophylactic antibiotics and no sepsis was reported.

Mean ligations of haemorrhoidal artery and Recto Anal Repair shown were 6 times. Duration of surgical procedure came to be mean 35 minutes. Almost similar operating times and number of times the arteries ligated.

Similarly, in other studies by Senagore AJ et al[22] and Nisar PJ[23] et al, Mean number of ligations were 5-10. This number was lesser to the number of Recto Anal Repairs done in this study.

CONCLUSION

The circular stapling technique offers a much less painful haemorrhoidectomy and is associated with an earlier return to normal life. Stapling method of hemorrhoidectomy is a new and reliable surgical technique for treating grade III and grade IV hemorrhoids. Patients have less postoperative pain, short hospital stay, little time away from routine life, morbidity similar to the conventional surgery, and patients having better satisfaction having no perianal wound. Hemorrhoidal artery ligation under Doppler control is a new technique, its cost remains relatively high in our setting which limit the availability of this technology to the public. However, more trials with longer follow up are essential to study any long-term complications.

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

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