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Original Articles

Editorial

Degenerative Diseases of the Brain: On the Rise

Mohsin Masud Jan
Editor

What do we understand by the term degenerative diseases of the brain? The first and foremost word that comes to mind is Dementia. First, let's take a look at what exactly is dementia? Dementia is not a specific disease. It's an overall term that describes a wide range of symptoms associated with a decline in memory or other thinking skills severe enough to reduce a person's ability to perform everyday activities. Alzheimer's disease accounts for 60 to 80 percent of cases. Vascular dementia, which occurs after a stroke, is the second most common dementia type. But there are many other conditions that can cause symptoms of dementia, including some that are reversible, such as thyroid problems and vitamin deficiencies.

Dementia is often incorrectly referred to as "senility" or "senile dementia," which reflects the formerly widespread but incorrect belief that serious mental decline is a normal part of aging.

While symptoms of dementia can vary greatly, at least two of the following core mental functions must be significantly impaired to be considered dementia:

- Memory
- Communication and language
- Ability to focus and pay attention
- Reasoning and judgment
- Visual perception

People with dementia may have problems with short-term memory, keeping track of a purse or wallet, paying bills, planning and preparing meals, remembering appointments or traveling out of the neighborhood. Many dementias are progressive, meaning symptoms start out slowly and gradually get worse.

Now, with that being taken care of, let us take a look at the most common cause of dementia, Alzheimer's. Alzheimer's is the leading cause of dementia worldwide, and as of late, cases of early onset Alzheimer's have been on the rise. Alzheimer's is not a normal part of aging. The greatest known risk factor is increasing age, and the majority of people with Alzheimer's are 65 and older. But Alzheimer's is not just a disease of old age. Approximately 200,000 Americans under the age of 65 have younger-onset Alzheimer's disease (also known as early-onset Alzheimer's). Alzheimer's worsens over time. Alzheimer's is a progressive disease, where dementia symptoms gradually worsen over a number of years. In its early stages, memory loss is mild, but with late-stage Alzheimer's, individuals lose the ability to carry on a conversation and respond to their environment. Those with Alzheimer's live an average of eight years after their symptoms become noticeable to others, but survival can range from four to 20 years, depending on age and other health conditions. Alzheimer's has no current cure, but treatments for symptoms are available and research continues. Although current Alzheimer's treatments cannot stop Alzheimer's from progressing, they can temporarily slow the worsening of dementia symptoms and improve quality of life for those with Alzheimer's and their caregivers. Today, there is a worldwide effort under way to find better ways to treat the disease, delay its onset, and prevent it from developing.

As of right now, a mere handful of risk factors are recognised when it comes to Alzheimer's, namely, age, family history and genetics, all of which are not readily modifiable. But there are some things that you can do to try to decrease the risk of developing the disease if you happen to have a genetic or family background of Alzheimer's.

1. Head injury: There may be a strong link between serious head injury and future risk of Alzheimer's, especially when trauma occurs repeatedly or involves loss of consciousness. Protect your brain by buckling your seat belt, wearing your helmet when participating in sports, and "fall-proofing" your home.
2. Heart-head connection: Some of the strongest evidence links brain health to heart health. This connection makes sense, because the brain is nourished by one of the body's richest networks of blood vessels, and the heart is responsible for pumping blood through these blood vessels to the brain. The risk of developing Alzheimer's or vascular dementia appears to be increased by many conditions that damage the heart and blood vessels. These include heart disease, diabetes, stroke, high blood pressure and high cholesterol. Work with your doctor to monitor your heart health and treat any problems that arise.
3. Overall healthy aging: One promising line of research suggests that strategies for overall healthy aging may help keep the brain healthy and may even reduce the risk of developing Alzheimer's. These measures include eating a healthy diet, staying socially active, avoiding tobacco and excess alcohol, and exercising both the body and mind.

So, in the end, the lesson to take away from this is, that regardless of having a family history of Alzheimer's, living an overall healthy lifestyle, might just do the trick and keep Alzheimer's away.

Original Article

Correlation of Mesiodistal width of Maxillary Central Incisor with Inner Canthal Distance using Decreasing Function of Golden Ratio

Muhammad Saad Mateen Munshi[1], Khurram Nadeem[2] and Fahd Mehtab-ud-Din[3]

ABSTRACT

Objective: To determine correlation between Mesiodistal width of Maxillary central incisor and golden ratio of inner canthal distance among dentate patients.

Study Design: Cross-sectional study.

Place and Duration of Study: This study was conducted at the Department of Prosthodontics, Faryal Dental College, Sheikhupura from 1st October 2016 to 2nd October 2017.

Materials and Methods: Five hundred and fifty dentate Pakistani subjects with age ranging from 18 to 35 years, having no dental or facial deformations were analyzed. The central maxillary incisors were measured mesiodistally between the interproximal contact points and inner canthal distance by the help of veriner calipers. The width of the central incisor was predicted by multiplying the inner canthal distance with 0.618 (a decreasing function value of the golden ratio) and was then divided by 2.

Results: The statistically significant result (P-value<0.05) of this study proved that there is weak correlation between the observed mesiodistal width of central maxillary incisors and calculated central maxillary incisor width when the inner canthal distance was subjected to golden ratio.

Conclusion: The use of decreasing value of golden ratio of Inner Canthal Distance was not a reliable predictor to select maxillary central incisor width for edentulous patients.

Key Words: Esthetics, incisors, edentulous, inner canthal distance, golden ratio

Citation of articles: Munshi MSM, Nadeem K, Din FM. Correlation of Mesiodistal width of Maxillary Central Incisor with Inner Canthal Distance using Decreasing Function of Golden Ratio. Med Forum 2017;28(12):2-5.

INTRODUCTION

One of the primary objectives of prosthodontists is to achieve optimal esthetics without compromising function. Face is the most visible part of the body and smile plays a significant role in boosting self-confidence and self-esteem. The loss of anterior teeth often leads to a psychological trauma to the patient as it affects esthetics and thus self-esteem. Appropriate tooth selection and placement by using the art of dentogenics for creating an illusion of natural teeth has a positive effect on patient's self-esteem and quality of life.[1]

The recent development in computation techniques has led to more predictable and esthetically pleasing results. Towards this end, type and dimensions of the maxillary anterior teeth are necessary for both dental and facial esthetics. The central maxillary incisors due to its strategic dentolabial position in the arch makes them more noticeable when viewed from front. Schillingburg et al[2] showed that the combined width of maxillary central incisors, lateral incisors and canines accounted for 37%, 31% and 32% respectively.

On the basis of facial anthropology, different anthropometric measurements have been recommended to predict the mesiodistal width of the central maxillary incisors in edentulous patients. These include the intercomissural width[3], bizygomatic width[4-6], interalar width7 and interpupillary distance[8]. Likewise, inner (medial) canthal distance of the eyes has also been suggested as one of the anthropometric feature to predict the width of the central maxillary incisors[9, 10]. By the age of five years the inner canthal distance matures upto 93% [8]. Maturity of ICD is reached between eight and eleven years and no changes in measurements take place after the age of 16 years[4, 8]. Normally ICD varies from 28 to 35 mm[8]. No differences related to sex, race (black or white), or age have been reported making it a reliable anatomical dimension for selection of maxillary central incisor widh.[11]

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At the point when the extent or proportion of a smaller to larger part is the same as the proportion of the larger part to the whole, it is called as golden ratio or a Fibonacci series. On account of their vast significance in geometry and design and their manifestations in nature, these proportions are called as golden proportion or on the other hand golden ratio. The golden proportion is said to play an imperative part in the smile design theory. Some sections of the face have bee accounted for to show golden proportion.

In the literature, various investigators have tried to find out ratios between the different anthropometric parameters and central maxillary incisors width[10]. However, facial anthropometric parameters have not been assessed with golden ratio[12] to establish whether any working relationship exists with the central maxillary incisor width in our population. In golden ratio for any decreasing function, the number is multiplied by 0.618, and for any increasing function, it is multiplied by 1.618.[10]

The goal of this study is to find out whether a correlation exists between mean mesiodistal width of maxillary central incisor and inner canthal distance when ICD is multiplied to decreasing function of golden ratio and to evaluate its significance in predicting mesiodistal width of maxillary central incisor in edentate patients.

MATERIALS AND METHODS

This was a cross-sectional study conducted at department of Prosthodontics, Faryal Dental College, from 1st October 2016 to 2nd October 2017. The sample size was calculated using WHO sample size calculator. Taking mean =28.69 and standard deviation=1.784 of inner canthal distance[10] with 0.15 margin of error and 95% confidence level, the calculated sample size was 550 cases. The non-probability purposive sampling technique was used. All patients of age ranging from 18 to 30 years of either gender were included in the study. Subjects treated orthodontically, with missing maxillary anterior teeth, maxillary anterior teeth interproximal spacing and crowding, anterior teeth restored/ crown and bridge work done, caries or severe attrition in maxillary anterior teeth and congenital or acquired orofacial anomalies, orbital disease, facial trauma or facial surgery subjects were excluded from the study.

The mesiodistal width of maxillary central incisors were determined with Digital Vernier Callipers (Miltex Instrument Co, Viernheim, Germany) measuring to an accuracy of tenth of a millimeter. The interproximal contacts were used as reference points. The measurements were made with the pointed members of the gauge held parallel to the incisal edges and perpendicular to the facial surface of the tooth. Five readings were taken and then the averages of these value were recorded. The average width of a single maxillary central incisor (MCIW) was determine by adding the measurements of both the central maxillary incisors at the interproximal contact points and then dividing it by 2. The inner canthal distance was determined by supporting the subject's head in an upright position and setting the digital vernier caliper against the forehead and delicately contacting the angles of the medial palpebral crevices of the eyes. The average was calculated after measuring the distance between the angles of the medical canthus five times for each subject.

SPSS version 20 was used to analyze data. Mean and SD were calculated for quantitative variables. Frequency and Percentages were calculated for qualitative variables. Pearson's correlation coefficient was calculated. P-value ≤ 0.05 was taken as significant.

RESULTS

Five hundred and fifty subjects fulfilling the inclusion criteria were included in this study. The mean age was 24.68±3.57 years. The mean of combined width of central incisors, mean mesiodistal width of maxillary central incisor, inner canthal distance & golden ratio of ICD were calculated as 17.12±1.14 mm, 8.58±0.47 mm, 31.35±1.88 mm & 9.68±0.58 mm (Table 1). Out of 550 patients, 374 (68%) of the patients included in the study were males and 176 (32%) were females (Fig 1).

The correlation between golden ratio of ICD and MCIW values for all subjects was 0.217. A positive correlation was found when for the golden ratio of inner canthal distance and MCIW variables from Pearson correlation coefficients (r) as presented in Figure 2. The relationship was not strong but significant (P<0.05).

The mean of MCIW and ICD values were recorded for descriptive statistics with respect to gender and age. Correlation was positive and significant (r =0.298 p=0.01) for males while correlation was positive but it is not significant (r= 0.075, p=0.32) for females. However weak positive correlation was also presented with respect to age groups. (Table 2)

Table No. 1. Descriptive statistics of quantitative variables

Variables	Mean±SD
Age	24.68±3.57
Combined width of central incisors	17.12±1.14
Mean mesiodistal width of maxillary central Incisors	8.58±0.47
Inner canthal distance	31.35±1.88
(ICD/2) x 0.618 (Golden ratio of ICD)	9.68±0.58

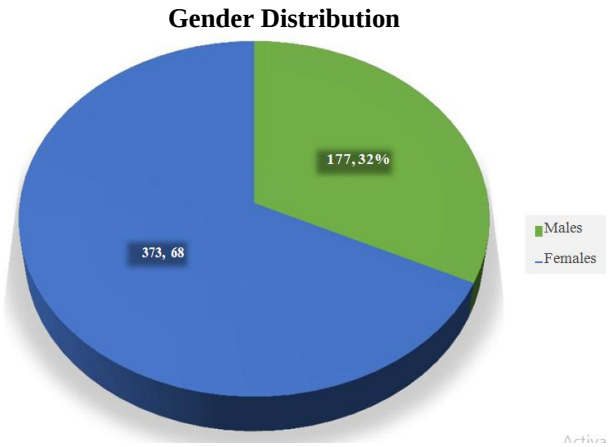

Figure 1: Frequency distribution of gender

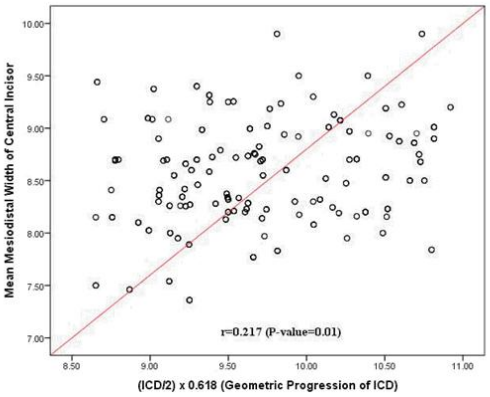

Figure 2: Correlation between mean mesiodistal width of maxillary central incisor and golden ratio of inner canthal distance

Table No. 2. Correlation between mean mesiodistal width of central maxillary incisor and golden ratio with respect to gender and age

Variables	MCIW (Mean±SD)	Golden ratio of ICD (Mean±SD)	Correlation between MCIW and golden ratio of ICD (r)	P-value
Gender				
Male (n=373)	8.56±0.46	9.72±0.57	0.298	0.01
Female (n=177)	8.60±0.49	9.60±0.58	0.075	0.32
Age Groups				
18-25 years (n=357)	8.58±0.48	9.66±0.57	0.196	0.01
26-33 years (n=193)	8.57±0.45	9.73±0.59	0.264	0.01

DISCUSSION

In the present study, the mean mesiodistal width of the central incisors is in agreement with the findings of Scandrett et al[13] but is less than the values reported by Woodhead[14] and Cesario et al.[8] When the subjects were separated by gender, a higher mean mesiodistal width of central incisor was found for females than for males. Variation in the mesiodistal width of central incisors based on gender has also been reported by Al-Wazzan[9], Abdullah MA[10], Garn et al[15], Sanin and Savara[16]; and Lavelle[17], however all of these studies showed a higher mean central incisor width of males compared to that of females which the present study does not support. To some extent, the variations may be explained by differences in measuring techniques and in the ethnicities of the populations studied.

The mean inner canthal distance (ICD) of subjects in the present study was almost similar to Freihofer[18], but was less to the values reported by Abdullah et at[19] and Murphy and Laskin[20], and greater than the values reported by Laestadius et al[12]. There was a significant difference between the mean ICD measurements in relation to sex. The males had a significantly higher mean value of ICD measurements than females. This finding is in accordance with the study carried out by Abdullah MA[10] & K.V. Arun Kumar et al[22]. However, the study carried out by Laestadius et al[21] showed no significant difference in the mean values of ICD when males was compared to females.

In earlier research, inner canthal distance has been studied to a lesser extent in relation to central incisor width. In present study, the correlation between inner canthal distance subjected to decreasing function of golden ratio and central incisor width was found to be weak. The weak relationship between inner canthal distance and central incisor width in males was significant (P<0.05), whereas in female no meaningful relationship was found between these distances (P>0.05). Moreover, the weak positive correlation was found between inner canthal distance and central incisor width with respect to change in age (P<0.05), suggesting that its increase is less age-dependent.

These finding is not in accordance with Abdullah MA[10], George and Bhat[23], Poonam et al.[24] who found that there was a relationship between inner canthal distance and central incisor width when subjecting it to geometric progression. This may be due to the ethnic variation between the populations.

CONCLUSION

Analysis of measurements of inner canthal distance and mesiodistal central incisor done on 550 subjects shows that mean central incisor width was significantly lower in males as compared to females whereas inner canthal distance was significantly lower for females than for males in our population. The results of our study suggests that inner canthal distance in terms of golden ratio may not be a dependable predictor for the selection of central maxillary incisor width for edentulous patients in our population.

Author's Contribution:

Concept & Design of Study:	Muhammad Saad Mateen Munshi
Drafting:	Khurram Nadeem and Fahd Mehtab-ud-Din
Data Analysis:	Khurram Nadeem and Fahd Mehtab-ud-Din
Revisiting Critically:	Muhammad Saad Mateen Munshi, Khurram Nadeem
Final Approval of version:	Muhammad Saad Mateen Munshi

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Original Article

Vitamin D Deficiency

Frequency of Vitamin D Deficiency and its Severity Grades Among Cirrhotic Patients Due to Hepatitis C

Momin Khan, Abdul Jabbar and Bacha Amin Khan

ABSTRACT

Objective: To determine the frequency of vitamin D deficiency and its severity grades among cirrhotic patients due to hepatitis C.

Study Design: Descriptive / cross-sectional study.

Place and Duration of Study: This study was conducted at the Department of Medicine, Saidu Teaching Hospital Swat from 01-01-2016 to 30-12-2016.

Materials and Methods: In this study a total of 210 patients were observed. Patients with history of osteomalacia, primary hyperparathyroidism, malignancy or bone metastatic diseases, patients on drugs like vitamin D replacement therapy, phenytoin, thiazide diuretics, Calcium containing antacids and glucocorticoids were excluded. They were admitted in Medical Department of Saidu Teaching Hospital Swat for further evaluation. Patients who were fulfilling the inclusion criteria had included in the study. From all patients, included in the study, blood were obtained and was sent to laboratory for detection of serum 25-hydroxyvitamin D (25OHD) deficiency and once detected was categorized as mild, moderate and severe. All the laboratory investigations were done in the same hospital under the supervision of a pathologist having at least 5 years of experience.

Results: In this study mean age was 50 years with standard deviation ± 1.33. Fifty eight percent patients were male, 42% patients were female. Vitamin D deficiency was found in 92% patients while 8% patients had normal vitamin D level.

Conclusion: We conclude that frequency of vitamin D deficiency was 92% patients presenting with hepatitis C.

Key Words: Vitamin D deficiency, cirrhotic, hepatitis.

Citation of articles: Khan M, Jabbar A, Khan BA. Frequency of Vitamin D Deficiency and its Severity Grades Among Cirrhotic Patients Due to Hepatitis C. Med Forum 2017;28(12):6-9.

INTRODUCTION

Cirrhosis is a scarring of the liver that lead to the formation of fibrous (scar) tissue associated with diffuse destruction of the normal liver architecture. As a consequence this will lead to derangement of the liver functions in a progressive fashion. Cirrhosis occurs due to any long standing injury to the liver. Liver plays a vital role in the metabolism of vitamin D as Vitamin D3 is hydroxylated by hepatic 25 hydroxylase to convert it into 25-hydroxyvitamin D3, the major circulating form of vitamin D3.As liver functions are impaired in cirrhosis, this will results in disturbance of the hydroxylation step of vitamin D metabolism leading to vitamin D deficiency in cirrhosis.

Vitamin D is important in calcium and phosphorus homeostasis and promoting bone mineralization[1]. Recently vitamin D3 deficiency is significantly recognized in chronic liver disease and cirrhotic patients[2,3].

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According to one study published in the United States, up to 92% chronic liver disease and cirrhotic patients have some degree of vitamin D deficiency[4]. In the hepatitis C cirrhosis group, 16.3% (7/43) had mild, 48.8% (21/43) had moderate, and 30.2% (13/43) had severe vitamin D deficiency[4]. It is now proved by one study that vitamin D deficiency is related with the degree of liver dysfunction rather than etiology[5]. One study conducted on HCV-HIV co-infected patients shows that low serum 25(OH) D3 correlates with the severity of liver fibrosis rather virological response to therapy or severity of immunodeficiency[3]. Low vitamin D is linked with severe fibrosis and low sustained virological response (SVR) in genotype 1 chronic hepatitis C patients[6].

Vitamin D deficiency is implicated in the pathogenesis of Osteopenia and Osteoporosis. There is one study published about frequencies of Osteoporosis in cirrhotic patients due to Hepatitis B and C in Peshawar tertiary care hospital[7]. Osteoporosis was found in 26% of subjects and Osteopenia in 42%, While 32% of subjects had BMD in normal age[7].

As vitamin D deficiency is increasingly identified in chronic liver disease and cirrhosis, I choose this topic for my research work because by this I will establish burden of severity of vitamin D deficiency problem in

local cirrhotic patients due to hepatitis C in our set of population and the result of the study can be used to recommend future guidelines for planning supplements of active form of vitamin D3 therapy (1, 25(OH) Vitamin D3) in this group of patients.

MATERIALS AND METHODS

This study was conducted at Department of Medicine, Saidu Teaching Hospital Swat. Study design was descriptive, cross-sectional study and the duration of the study was one years, from 01-01-2016 to 30-12-2016. All patients with liver cirrhosis due to hepatitis C and male and female above 20 years were included while patient who are in hepatic encephalopathy on clinical assessment, patients who have systemic diseases e.g. multiple myeloma, sarcoidosis, Tuberculosis (Based on medical records) which can influence vitamin D levels in a patient. Patients with history of osteomalacia, primary hyperparathyroidism, malignancy or bone metastatic diseases, patients on drugs like vitamin D replacement therapy, phenytoin, thiazidediuretics, Calcium containing antacids and glucocorticoids were excluded from this study. They were admitted in Medical Department of Saidu Teaching Hospital Swat for further evaluation. Patients who were fulfilling the inclusion criteria had included in the study. An informed written consent was taken from patients or relatives of the patients. All the investigations were done in the same laboratory.

RESULTS

In this study age distribution among 210 patients was analyzed as 4(2%) patients were in age ranged < 30 years, 21(10%) patients were in age ranged 31-40 years, 88(42%) patients were in age ranged 41-50 years, 70(33%) patients were in age ranged 51-60 years and 27(13%) patients were < 60 years. Mean age was 50± 1.33 years . Gender distribution among 210 patients was analyzed as 122(58%) patients were male, 88(42%) patients were female. Vitamin D level among 210 patients was analyzed as the vitamin D level was normal in 17(8%) patients while vitamin D was low in 193(92%) patients. Vitamin D deficiency among 210 patients was analyzed as the vitamin D deficiency was found in 193(92%) patients while 17(8%) patients had normal vitamin D level. Severity of vitamin D deficiency among 193 patients was analyzed as 48(25%) patients had mild deficiency of vitamin D, 97(50%) patients had moderate deficiency of vitamin D and 48(25%) patients had severe deficiency of vitamin D (Table No.1).

Association of severity of vitamin D deficiency among age distribution was analyzed as among 193 cases of vitamin D deficiency 48 patients had mild deficiency of vitamin D, in which 4 patients were in age range 31-40 years, 19 patients were in age range 41-50 years, 18 patients were in age range 51-60 years and 7 patients were in age > 60 years. 97 patients had moderate deficiency of vitamin D in which 8 patients were in age range 31-40 years, 42 patients were in age range 41-50 years, 35 patients were in age range 51-60 years and 12 patients were in age > 60 years. 48 patients had severe deficiency of vitamin D in which 3 patients were in age range 31-40 years, 19 patients were in age range 41-50 years, 18 patients were in age range 51-60 years and 8 patients were in age > 60 years. (Table No 2). Association of severity of vitamin D deficiency among gender distribution was analyzed as among 193 cases of vitamin D deficiency 48 patients had mild deficiency of vitamin D, in which 27 patients were male and 21 patients were female. 97 patients had moderate deficiency of vitamin D in which 60 patients were male and 37 patients were female. 48 patients had severe deficiency of vitamin D in which 23 patients were male and 25 patients were female (Table No 3).

Table No.1. Demographic variable of patients

Variable	No.Patients	Percentage
Age Distribution		
• < 30 years	4	2%
• 31-40 years	21	10%
• 41-50 years	88	42%
• 51-60 years	70	33%
• > 60 years	27	13%
Gender Distribution		
• Male	122	58%
• Female	88	42%
Vitamin D Level		
• Normal	17	8%
• Low vit. D Level	193	92%
Vitamin D Deficiency		
• Yes	193	92%
• No	17	8%
Severity Of Vitamin D Deficiency		
• Mild	48	25%
• Moderate	97	50%
• Severe	48	25%

Table No. 2. Association of severity of vitamin d deficiency in age distribution (n=193)

Severity /Age	31-40 years	41-50 years	51-60 years	>60 years	Total
Mild	4	19	18	7	48
Moderate	8	42	35	12	97
Severe	3	19	18	8	48
Total	**15**	**80**	**71**	**27**	**193**

Chi square test was applied in which P value was 0.591

Table No. 3. Association of severity of vitamin d deficiency in gender distribution (n=193)

Severity /Gender	Male	Female	Total
Mild	27	21	48
Moderate	60	37	97
Severe	23	25	48

DISCUSSION

Cirrhosis is a scarring of the liver that lead to the formation of fibrous (scar) tissue associated with diffuse destruction of the normal liver architecture. As a consequence this will lead to derangement of the liver functions in a progressive fashion. Cirrhosis occurs due to any long standing injury to the liver. Liver plays a vital role in the metabolism of vitamin D as Vitamin D3 is hydroxylated by hepatic 25 hydroxylase to convert it into 25-hydroxyvitamin D3, the major circulating form of vitamin D3.As liver functions are impaired in cirrhosis, this will results in disturbance of the hydroxylation step of vitamin D metabolism leading to vitamin D deficiency in cirrhosis.

It is a developing country of Pakistan, and the literacy rate is also low, which often raises information about pathogenicity, proper ways and diagnosis and treatment procedures. HCV infection is therefore an economic burden for Pakistani residents, and in particular for the KPK. Vitamin D deficiency is common (92%) among patients with chronic liver disease, with at least one third of them suffering from vitamin deficiency D. We found similar results in our study, which found a deficiency of vitamin D in 92% of patients.

As in our study 193(92%) patients in which 48(25%) patients had mild deficiency of vitamin D, 97(50%) patients had moderate deficiency of vitamin D and 48(25%) patients had severe deficiency of vitamin D. similar results were found in another study done by Arteh J et al[8] in which 109/118 (92.4%) had some degree of vitamin D deficiency. In the hepatitis C cirrhosis group associated with 16.3% mild, 48.8% moderate, and 30.2% (13/43) were severe vitamin D deficiency. Severe vitamin D deficiency (<7 ng/ml) was more common among patients with cirrhosis compared with non-cirrhotic (29.5% versus 14.1%, P value = 0.05). Female gender, African American race, and cirrhosis were independent predictors of severe vitamin D deficiency in chronic liver disease.

A lower serum 25 (OH) D level was previously reported in different populations in terms of the cause and severity of chronic liver disease [9,10]. We confirmed the reduction of 25 (OH) D to a homogeneous cohort for patients with G1 CHC, with low prevalence of Fibrosis F4. Although the significant trend in 25 (OH) D was found to be reduced with increased fibrosis levels, the subgroup of patients with light fibrosis (F1) also observed a significant reduction and it is unlikely that low levels of 25 (OH) D completely explained by decreased liver function.

Our study shows that a low level of 25 (OH) D is involved regardless of the gender of women and the intensity of necroinflammatory activity. Although the study did not confirm the correlation between the female sex and the lower level of 25 (OH) D, due to the decrease observed in women over 55 years, but not in men of the same age group, and due to the significant interaction between gender and age , we can imagine that hormonal changes in women after birth can modify the vitamin D status [11,12]. Our results highlight the inverse relationship between 25 (OH) D and the intensity of necroinflammatory activity. The lack of this relationship can be attributed to differences in middle age, alcohol consumption and the incidence of obesity and diabetes. In any case, we have declared a significant effect of metabolic changes on severe fibrosis of ferritin, a distance marker and metabolic syndrome[13].

It is possible that a reduced level of 25 (OH) D may promote the promotion of fibrosi itself. Experimentally different models show that vitamin D, through interaction with the vitamin D receptor, protects oxidative stress[14], can influence the migration, proliferation, and gene expression of fibroblasts,[15,16] and reduces the inflammatory and fibrogenic activity of liver stellate cells.[17,18] However, further potential cohort studies will be necessary to establish a link between the belief about vitamin D deficiency and fibrosis in patients with CHC.

Another interesting outcome of this study is the evidence that serum 25 (OH) D levels have a negative independent risk factor for SVR. Again, this observation will have to be needed in many different cohorts of patients, but it is supported by Experimental Data that contributes to the role of vitamin D in modifying the immune response,[17,18] and by recent clinical data[19] reporting higher early virological response rate in CHC treated with standard of care plus vitamin D, compared with those treated with standard of care only. Finally, in line with data from the literature, we found that steatosis[18] and lower cholesterol levels, a known surrogate marker of fibrosis severity,[13] were independently associated with lower SVR rate. We did not find any association between IR and SVR, in keeping the conflicting data reported in the literature on the role of IR as a predictor of SVR.

CONCLUSION

Our study concludes that the frequency of vitamin D deficiency was 92% patients presenting with hepatitis C.

Momin Khan, Abdul Jabbar and Bacha Amin Khan

Author's Contribution:

Concept & Design of Study:	Momin Khan, Abdul Jabbar
Drafting:	Abdul Jabbar, Bacha Amin Khan
Data Analysis:	Abdul Jabbar, Bacha Amin Khan
Revisiting Critically:	Momin Khan, Bacha Amin Khan
Final Approval of version:	Momin Khan

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

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Original Article

Different Tea Effects on Periodontium Among Dental Student in Dental College: A Cross Sectional Study

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ABSTRACT

Objectives: This study examined the effects of black tea and green tea on teeth and it's Periodontium among dental students at Liaquat College of Medicine & Dentistry (LCMD) Karachi, Pakistan.

Study Design: Prospective / descriptive / cross-sectional study

Place and Duration of Study: This study was conducted at the Department of Community Dentistry and Periodontology, Liaquat College of Medicine & Dentistry (LCMD) Karachi from November 2016 to January 2017.

Materials and Methods: Total of 240 subjects that were consulted in the survey, 218 (90.5%) fulfilled the inclusion criteria and were included in the study. To access the reason of taking black tea and green tea and their effects on oral health we used the Community Periodontal Index Treatment Need (CPITN) index and Plaque Index to analyze the participants.

Results: Results have shown that most of the female participants drinking green tea as compare to male participants. The most common reason of drinking black tea is Addiction on the other hand health conscious is the key reason of drinking green tea. End of the study we found health gums of those participants who taking green tea ($x2 = 36.57$, $df= 6$, $p<0.001$) while those participants who taking black tea have more plaque accumulation ($x2 = 30.98$, $df= 6$, $p<0.001$).

Conclusion: The study concludes that green tea have some positive effects on Periodontium and helps to prevent plaque deposition.

Key Words: Green Tea, Black Tea, Periodontium, Dental student

Citation of articles: Nadeem M, Zareef U, Raja IM. Different Tea Effects on Periodontium Among Dental Student in Dental College: A Cross Sectional Study. Med Forum 2017;28(12):10-14.

INTRODUCTION

Through the centuries, tea has progressed from a common everyday beverage to a medicinal powerhouse that is consumed all around the world. Green tea started appearing in Chinese literature and legend as early as 3000 BCE. According to legend, the discovery of tea as accidental, credit being given either to a man named Shien Non Shei or the Emperor Shen Nung. Both ways, green tea soon became popular trend among wealthy Chinese nobles. No after thousands of years, numerous preparations of this beverage are available commonly worldwide. ,An approximate of 165 million cups of tea are consumed everyday in Great Britain alone. Not only is tea good in taste the high levels of antioxidants in it seem to offer a variety of health benefits.[1,2]

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There are a variety of different types of tea available on the market, like green, black, white, herbal, and oolong. Green tea, extracted from the leaves of the Camellia sinensis plant, is unfermented; the freshly picked up tea-leaf is steam blasted in drums with holes in them or cooked in iron pans, denaturing the oxidizing enzymes present in the leaves. In contrast, black tea is entirely fermented. Other types of tea, like oolong and longing, are fermented partially with varying degrees of processing. White tea is different from green tea with regards to its stage of harvesting, as white tea is picked prior to its leaves being fully opened. Herbal tea is not really tea at all; rather, it consists of an herbal infusion of dried flowers, leaves, seeds, or roots concocted by pouring hot water over the plant ingredients and letting them steep.[3]

Gingivitis and periodontitis, as multifactorial diseases, are mainly caused by an interaction between invasions of virulent bacteria and host immune response of varied degrees. Plaque induced gingivitis being the most common form of gingivitis is induced by microbial plaque accumulation containing more than 300 types of bacterial species.[4,5]

MATERIALS AND METHODS

Free dental checkups ere organized by The Department of Community Dentistry and Periodontology of the

Liaquat College of Medicine & Dentistry in Karachi, Pakistan among dental students at LCMD. The examination was done at the Darul Sehat hospital for the duration of November 2016 to January 2017. The dental students come from all area of Karachi and Pakistan providing opportunity for carrying out this cross-sectional study. The exercise was restricted to intraoral examination including advice to the participants on how to improve and maintain their oral health but did not involve acute consultations of pain or infections.. Participants were also counselled on the presence of plaque and/or need for dental scaling.

Study population

A total of 240 subjects between the ages 19-27 years that came for check-ups were invited to take part in the study. Exclusion criteria included the following: self-reported diabetes, self-reported hypertension, self-reported complains of bleeding gums, subjects that have received radiation therapy, subjects with clinical signs of oral carcinoma, and history of pan and/or betel nut consumption. From the group of selected subjects, 5 presented with diabetes or hypertension, and 14 were excluded due to pan and/or betel nut consumption. A total of 3 individuals were unwilling to participate in the study thus leaving 218 (90.5%) volunteers. The variables investigated included the type of tea taken (black or green tea), the duration of green tea consumption in years (< 5 years, 5 to 9 years, 10 to 14 years and >14 years), and the reason of drinking tea. A subject was labelled a tea drinker if she/he had taken at least one cup every day. No attempts were made to recognize ex-tea drinkers.

Sample Size: The sample size that was estimated for the study (n=218) was originally calculated considering a precision of 5%, a 95% level of the confidence interval, and assuming a 50% prevalence in the underlying referral population.

Ethical Considerations: The study practice was approved by the Department of Research and Ethics of the Liaquat College of Medicine & Dentistry Karachi and a written informed consent was taken by each participant.

Variables: All participants filled a questionnaire that included information on age, gender, smoking status (current smoker/no smoker); the duration of smoking in years (< 5yrs, 5-9 yrs, 10-14 yrs and > 14 yrs); and the type of cigarettes smoked (with or without filter).

Clinical outcome: A trained final year dental student (AA) and a dentist (MN) carried out all the clinical examinations. Information on tea habits was not disclosed to the examiners. Each participant was clinically examined for the presence of plaque on the tooth surface: 1) No plaque on tooth surface; 2) plaque present less than 1/3 surface of tooth; 3) plaque present 1/3 surface of tooth; and 3) plaque present more than 2/3 surface of tooth; and gum status: 1) healthy gums; 2) bleeding gums; 3) calculus present surrounding gums and 4) periodontal pocketing present. For the sake of our present analysis, the site that was most affected was taken into account at individual level.

Statistical Analysis: χ^2 statistics were used to compare overall differences between groups, the differences between proportions and the equivalent 95% confidence intervals for the differences between groups..

RESULTS

The study group comprised 118 green tea drinker and 58 black tea drinker and 42 are those who don't like to drink tea at all. We examined plaque index and CPITN index of all participants. According to the following study most of the females like to drink green tea (106 out of 174) on the other hand most of the males like to drink black tea (31 out of 44) (figure 1)

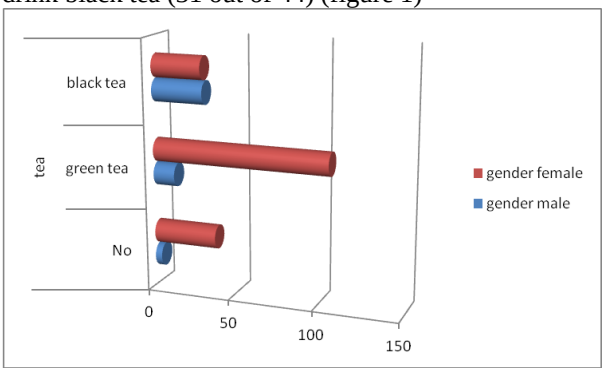
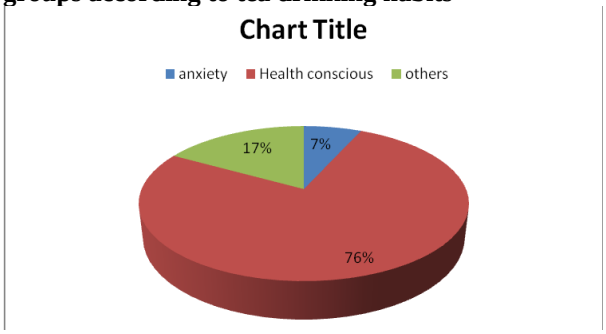
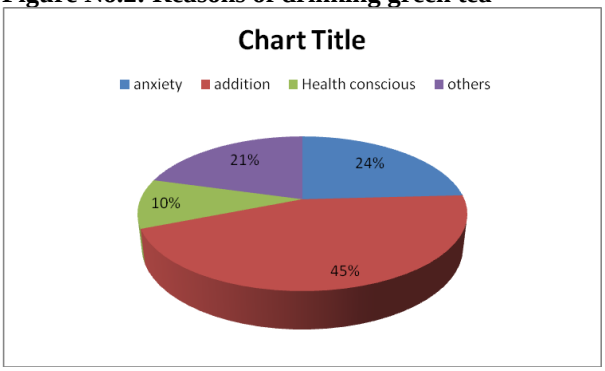


Figure No.1: Distribution of Different Genders groups according to tea drinking habits



(SD= 0.67, SE= 0.06, mean= 3.03, Median= 3.00)

Figure No.2: Reasons of drinking green tea



(SD= 1.056, SE= 0.14, mean= 2., Median= 2.00)

Figure No.3: Reasons of drinking black tea

Table No.1: Periodontal health status according to habit of drinking tea

		CPITN				
		healthy	bleeding	calculus	pocket	Total
tea	No	13	10	13	6	42
	green tea	79	28	7	4	118
	black tea	19	18	14	7	58
Total		111	56	34	17	218

(x2 = 36.57, df= 6, p<0.001)

Table No.2: Plaque accumulation on tooth surface according to plaque index:

		Plaqueindex				
		no	1/3	> 1/3	> 2/3	Total
tea	No	14	13	10	5	42
	green tea	76	27	9	6	118
	black tea	15	27	10	6	58
Total		105	67	29	17	218

(x2 = 30.98, df= 6, p<0.001)

Table No.3: Periodontal health status according to the duration of green tea habit

		CPITN				
		healthy	bleeding	Calculus	pocket	Total
Duration green	< 5	12	11	6	3	32
	5 - 9	35	10	0	0	45
	10 -14	32	7	1	1	41
Total		79	28	7	4	118

(x2 = 25.42, df= 6, p<0.001)

Table No.4: Accumulation of plaque according to the duration of green tea habit

		plaque				
		no	1/3	> 1/3	> 2/3	Total
Duration green	< 5	9	12	7	4	32
	5 - 9	33	9	2	1	45
	10 - 14	34	6	0	1	41
Total		76	27	9	6	118

(x2 = 25.42, df= 6, p<0.001)

Periodontal health status according to habit of drinking tea: Among tea drinker, according to CPITN index green tea drinkers have more health gums (66.95%), while black tea drinkers have as compare to green tea drinker has more bleeding gums (31.03%). (x2 = 36.57, df= 6, p<0.001) (Table 1).

Plaque accumulation on tooth surface according to plaque index: According to plaque index, in green tea drinkers the highest numbers of participants have no plaque (72.38 %) while in black tea drinkers the highest number of participants have plaque present on 1/3 tooth surface (40.30%). The absence of plaque was significantly associated with the drinking habit of green tea (x2 = 30.98, df= 6, p<0.001) (Table 2).

Reason of drinking green tea and black tea: According to my study most of the participants are drinking green tea because they are health conscious (76.30%) on the other hand the mean reason of drinking black tea is addiction (44.80%). (Figure 2 and 3)

Periodontal health status according to duration of drinking green tea: According to CPITN index, the highest number participants who have healthy gum are those who had drink green tea between 10 to 14 years (78.05%). Similarly second highest are those who drink green tea between 5 to 9 years (77.78%). (x2 = 25.42, df= 6, p<0.001) (Table 3).

Plaque accumulation of tooth surfaces according to duration of drinking green tea: According to plaque index, the highest numbers of participants who have no plaque accumulation are those who drink green tea between 10 to 14 years (82.93%). Similarly second highest are between 5 to 9 years (73.33%) (x2 = 25.42, df= 6, p<0.001) (Table 4).

DISCUSSION

Liaquat College of Medicine & Dentistry and Darul Sehat hospital is situated in south Karachi at a central location which covers rural and urban population of gulshan town, the hospital has a well established dental program for more than 10 years with well-resourced dental OPD's.[6] This research was carried out to assess and analyze the role of tea, reason of taking tea and their effects on oral health, we analyzed the Community Periodontal Index Treatment Need (CPITN) index and Plaque Index on participants. Oxidative stress has an important role in the pathogenesis of periodontal disease, as well as in many other disorders.[7]

Tea originated in China probably, as long ago as 2700 BC. Drinking water, boiled for reasons of sanitation, was made more pleasant by the addition of leaves from the tea plant. In present times, tea, in any form, is, with the exception of water, the world's most commonly consumed beverage; more than two billion cups are consumed daily. For thousands of years, tea has anecdotally been considered to have therapeutic properties; this has been sufficiently confirmed in recent years by an accelerating research effort.

The chemical composition of green tea is complex and partly defined. The most abundant components in green tea are polyphenols, in particular flavonoids such as the catechins, catechin gallates and roanthocyanidins. The

fresh leaves contain caffeine (approximately 3.5% of the total dry weight, or about 50 mg/cup when brewed), theobromine (0.15–0.2%), theophylline (0.02–0.04%) and other methylxanthines, lignin (6.5%), organic acids (1.5%), chlorophyll (0.5%) and free amino acids (1–5.5%), including the unique amino acid theanine (4%); numerous 'flavour compounds' are also present but in much lower amounts.[9]

Bacterial biofilm formation in the marginal gingiva and periodontal pockets is important in the pathogenesis of periodontal disease. Previous in vitro studies have shown that green tea catechin inhibits the growth of Porphyromonas gingivalis, Prevotella intermedia, and Prevotella nigrescens and the adherence of P. gingivalis onto human buccal epithelial cells.[10,11,17] In addition, green tea catechins with the steric structures of 3-galloyl radial, EGCg, (-)-epicatechin gallate (ECg), and (-)-gallocatechin gallate, which are the major tea polyphenols, inhibit the production of toxic end products of P. gingivalis.[12-15] These reports of the inhibitory effects of catechin contained in green tea on periodontal pathogens may provide the source for the beneficial effect of the daily consumption of green tea on periodontal health.

Periodontal disease is a contagious disease involving gingival inflammation and the destruction of periodontal tissue. Periodontal pathogens, such as P. gingivalis and Aggregatibacter actinomycetemcomitans (previouslyActinobacillus actinomycetemcomitans), produce matrix metalloproteinases (MMPs) and display collagenase activity.[13-18]

We carried out a inclusive health examination of participants and examined the relationship between the daily intake of green tea / black tea and periodontal disease. The daily intake of green tea was appreciably associated with indices of periodontal disease, including PD, clinical AL, and BOP, such that the more regularly the subjects drank green tea, the more improved was their periodontal condition.

CONCLUSION

Summing up, the present record and study have showed that the health conscious is the main reason of taking green tea in Pakistani population. Green tea takers presented less plaque accumulation as compare to black tea takers and the relationship suggested a dose-response effects.

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Original Article

Rifaximin VS Placebo to Prevent Hepatic Encephalopathy

Rifaximin versus Placebo Preventing the Recurrence of Clinically Overt Hepatic Encephalopathy in Patients having Cirrhosis of Liver

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ABSTRACT

Objective: This study was aimed to evaluate the efficacy of Rifaximin in preventing the recurrence of overt hepatic encephalopathy in comparison to placebo in outpatients with recent history of overt hepatic encephalopathy two or more episodes in the past six months.

Study Design: Randomised controlled trial.

Place and Duration of Study: This study was conducted at the Department of Medicine, Mardan Medical Complex, Mardan from Jan 2016 to June 2016.

Materials and Methods: Adult patients having cirrhosis of liver and with history of two or more episodes of acute hepatic encephalopathy in the past 6 months were randomized into either the Rifaximin or placebo group. Rifaximin or placebo was given 550mg twice daily for 6 months or till the recurrence of acute attack of hepatic encephalopathy. The study participants were followed weekly for first two weeks then 2 weekly till the end of therapy. The efficacy end point was the development of breakthrough hepatic encephalopathy episode.

Results: A total of 96 patients were enrolled in the study after fulfilling the inclusion criteria, they were randomized into either of the two groups with 1:1ratio. Patients in the Rifaximin group had lesser recurrence of the episodes of hepatic encephalopathy (17.77%) as compared to the placebo group (37.20%) and the difference was found to be statistically significant (p value = 0.002).

Conclusion: This placebo controlled randomized trial has shown that the Rifaximin therapy is more effective than placebo in preventing hepatic encephalopathy recurrence.

Key Words: Rifaximin, Lactulose, Hepatic Encephalopathy

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INTRODUCTION

Hepatic encephalopathy (HE) is a serious neuropsychiatric complication usually seen in decompensated chronic liver disease but can also be a feature of acute liver disease.[1] The clinical spectrum of this disease comprises of different neuropsychiatric abnormalities affecting the patient's quality of life and repeated episodes of the disease have a worse effect on the socioeconomic aspect of the patient's lives.[2] HE is broadly classified as overt and minimal. The overt HE (OHE) is a condition that encompasses the neurological and neuropsychiatric manifestations detectable at bedside by clinical tests.

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Whereas minimal HE (MHE) is a variant of the disease in which the patient is clinically normal and a battery of psychometric tests is used to diagnose it.[3] With cirrhosis of liver patients eventually have HE in about 50% of the patients.[4] In all the patients with one episode of OHE there is a 40% cumulative risk of OHE recurrence within 1 year and patients having recurrent bouts of OHE have a 40% risk of having another episode of OHE within 6 months even if they are on lactulose treatment.[5] Cirrhotic patients having HE have bad prognosis as compared to the patients having no HE, even when the patients have same Model for End-Stage Liver Disease (MELD) Score.[6]

The pathogenesis of the HE is not fully understood but the role of increased ammonia in the blood is the dominant theory among others like inflammation and hyponatremia.[7] The first and the most important step in the management of HE is the correction of the precipitating factors followed by measures to lower the ammonia levels in blood. Ammonia levels are lowered either by preventing its absorption from the gut by non-absorbable disaccharides, such as lactulose or by

changing the ammonia forming flora of gut by using an antibiotic like Rifaximin.[8]

Rifaximin is a minimally absorbed oral antibiotic with few adverse effects. In the management of HE the Rifaximin has been compared with other agents like lactulose, other antibiotics and placebo, and results showed that its effect was either same or better than the other agents.[10]

This study was aimed at evaluating the efficacy of Rifaximin in preventing the recurrence of OHE in comparison to placebo in outpatients with recent history of OHE two or more episodes in the past six months.

MATERIALS AND METHODS

This double blind placebo controlled randomised trial was conducted in the department of medicine, Mardan Medical Complex, Mardan from January 2016 to June 2016. Cirrhotic patients secondary to any etiology, of any age and either gender who have at least two episodes of OHE in the past six months with score of 2 or more on Conn score were enrolled in the study. The admitted patients with second episode of OHE in the last six months were also enrolled in the study at discharge when their episode was treated and were in remission. Patients with following conditions were excluded from the study, chronic renal insufficiency, respiratory insufficiency, electrolytes abnormalities (Serum sodium < 125mEq/L, serum Calcium > 5mEq/L, serum potassium < 2.5mEq/L), active spontaneous bacterial peritonitis, hepatocellular carcinoma, expectation of liver transplant < 1 month and patients with placement of transjugular intrahepatic portosystemic shunt.

After taking the informed consent from all the participants they were randomized by simple lottery method with 1: 1 ratio into either placebo or Rifaximin group 550mg twice daily for six months or till the recurrence of OHE. Detailed history and clinical examination were performed and data were recorded on a proforma. The Conn score was used to establish the remission of the HE. Conn scores are defined as follows: 0; no personality or behavioral abnormality detected, 1; trivial lack of awareness, euphoria or anxiety, shortened attention span, or impairment of ability to add or subtract, 2; lethargy, disorientation with respect to time, obvious personality change, or inappropriate behaviour, 3: somnolence or semi stupor, responsiveness to stimuli, confusion, gross disorientation, or bizarre behaviour, and 4; coma.[11] Use of lactulose was allowed to the participants during the study period. The study participants were followed weekly for first two weeks then fortnightly till the end of therapy. On each follow up visit compliance of the drug was checked, Conn score was calculated and adverse events noted if any. The efficacy end point was the development of breakthrough HE episode.

Statistical Package for Social Sciences (SPSS) version 19 was used to analyze the study data. Study results were stratified for gender, MELD score and previous episodes of HE. T-test and chi-square tests were used to determine the statistical difference between the two groups.

RESULTS

A total of 96 patients were enrolled in the study after fulfilling the inclusion criteria. They were randomized into either of the two groups with 1:1 ratio. The drop-outs in the Rifaximin group were 3 while in placebo group were 5. One patient in each group died due to disease progression and rest of them were lost to follow up. Both the groups were comparable with respect to the baseline characteristics (table 1). The study drug was stopped when the breakthrough episode of HE was documented. The study population was predominantly younger than 65 years and having hepatitis C as the most common cause of cirrhosis of liver. Patients in both the groups used lactulose along with the study drugs.

Table No.1: Baseline characteristics of the patients according to study groups

Characteristic	Rifaximin Group (N = 45)	Placebo Group (N = 43)
Age (years)		
Mean ± SD	46.73±2.35	44.28±3.61
<65	34	36
≥ 65	11	7
Gender		
Male	24 (53.33 %)	22 (51.16%)
Female	21 (46.66%)	21 (48.83%)
No of HE episodes in the past 6 months		
2	26(57.77%)	23(53.48%)
>2	19(42.22%)	20 (46.51%)
Cause of Cirrhosis		
Hepatitis C	27 (60%)	30 (69.76%)
Hepatitis B	13 (28.88%)	11 (25.58%)
Ethanol	3 (6.66%)	1 (2.32%)
Others	2 (4.44%)	1 (2.32%)
MELD Score		
≤ 10	6 (13.33%)	4(9.30%)
10-18	25 (55.55%)	23(53.48%)
19-24	14 (31.11%)	16(37.20%)
Mean ± SD	17.52 ±3.61	15.76 ± 2.84

Breakthrough episodes of the HE were reported in 8 patients (17.77%) in Rifaximin group and 16 patients (37.20%) in placebo group (Figure 1). The difference has a statistical significance with p value of 0.002. The ability of the Rifaximin to reduce the recurrence of HE was consistent in all the subgroups especially in patients younger than 65 years and in patients having MELD score range of 10-18, as shown in the table 2.

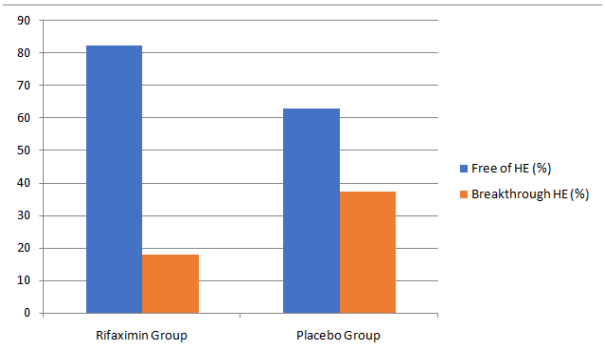

Figure No.1: Breakthrough Episodes of HE in the both Groups

The adverse events reported by the study population were similar in both the groups, Rifaximin group (53.61%) and placebo group (51.43%). The adverse events were mild including nausea, vomiting, fatigue, abdominal pain (spontaneous bacterial peritonitis was ruled out) and infections (respiratory and urinary tract infections). The study drug continued with the management of adverse events and the patients fully recovered from it.

Total of two patients died in the study population, one in each group. The patient in the Rifaximin had acute upper gastrointestinal bleed from esophageal varices, the endoscopic band ligation of the esophageal varices was done but the patient died within 18 hours of the index bleed. The patient in the placebo group had worsening of the ascites and developed type 1 hepatorenal syndrome, with serum creatinine of 4.3 mg/dl. The spontaneous bacterial peritonitis was ruled out, the patient was managed conservatively but couldn't recover.

Table No.2: Subgroup analysis of the patients free of HE

Characteristics	Rifaximin Group (n=37)	Placebo Group (n=27)	p value
Age (years)			
<65	31	20	<0.001
≥ 65	6	7	0.03
Gender			
Male	20	16	0.008
Female	17	11	0.006
MELD Score			
≤10	4	2	0.21
10-18	22	15	<0.001
19-24	11	10	0.33
No: of encephalopathy Episodes in the past			
2	23	17	0.006
>2	14	10	0.019

DISCUSSION

Hepatic encephalopathy is one of the complications of the cirrhosis of liver which has a negative impact on the patient's quality of life. One of the primary objectives of the therapy in these patients is to reduce the recurrent episodes of the HE and as a result decrease the need for repeated hospitalizations and improve patient's quality of life.[12,13] The results of our study demonstrated that Rifaximin use for 6 months, in cirrhotic patients having 2 or more episodes of HE in the last 6 months, reduces the risk of breakthrough episode of HE. This reduced risk of recurrence of HE was also observed within different subgroups of study population, especially in patients younger than 65 and having MELD score of 10-18, further emphasizing on the importance of long term use of Rifaximin for cirrhotic patients who are in remission of HE. Different trials documented the successful response of Rifaximin in the treatment of acute OHE.[14-16.]

This study was different as it was conducted on cirrhotic patients when they were in remission of HE instead of patients with acute OHE. A randomized placebo controlled trial conducted in United States also checked the response of the Rifaximin in preventing the recurrence of HE and the results showed that the Rifaximin has a protective role against HE recurrence, which is consistent with our study results.[10] That study was conducted on the patients with different ethnic groups differing from our study population in many aspects including the gut flora. Rifaximin being the antibiotic mainly acting via altering the gut flora of the patients. The patients in Bass et al study were having alcohol as the predominate etiology for liver cirrhosis while in our study the most common causation for the cirrhosis was viral hepatitis either Hepatitus C or B. Despite these differences in the characteristics of the study population, both the studies concluded that Rifaximin is effective in reducing the risk of recurrence of HE. There were studies in the past which used Rifaximin for the prevention of HE but either for a shorter duration of 21 days or as an intermittent therapy of 10-15 days a month for 6 months.[17-19]

A randomized open labeled trial from New Dehli, India compared lactulose with placebo for the prevention of HE and found that lactulose was effective in preventing the recurrence of HE.[5] Bacterial infections are common in decompensated cirrhotic patients and are most important precipitating factor for the development of HE.[20] Lactulose reduces the pH of the colon by the production of organic acids. This lowered pH of the colon helps the growth of acid resistant non-urease producing bacteria whereas preventing the growth of urease-producing organisms in the colon hence the ammonia production is reduced in the colonic lumen.[21] The Sharma et al trial showed that bacterial infections were reported more in the placebo arm of the study population as compared to the lactulose, signifying that lactulose helps in reducing the chances of bacterial infections in cirrhotics.[20] The addition of an antibiotic such as Rifaximin to lactulose will have a synergistic effect against the bacterial infections and prevention of the HE in patients with liver cirrhosis. As in our study the concomitant use of the lactulose was allowed to all the patients in both the groups, but lesser breakthrough episodes of the OHE occurrence in the Rifaximin group signifies that the combination of Rifaximin and

lactulose is superior to the lactulose alone in the prevention of recurrent attacks of HE. However to further evaluate this; head on randomized controlled trials are needed with larger sample sizes.

The frequency of reported general adverse events and infections were similar in both the groups (53.61% vs 51.43%). Mostly the adverse events were mild and didn't require withholding the study drug. Patients fully recovered after conservative management. This was consistent with previous trials.[10, 22]

CONCLUSION

The results of this randomized placebo-controlled trial show that, for patients having cirrhosis of liver with previous episodes of hepatic encephalopathy, the Rifaximin therapy is more effective than placebo in preventing hepatic encephalopathy recurrence.

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Original Article

Estimation of Plasma Fibrinogen Level in Smokers and Non-Smokers and Its Correlation with Duration of Smoking: A Comparative Study

Naila Aslam, Muhammad Khalid, Farhat Rehman and Fazal Rahim

ABSTRACT

Objective: The aim of present study is to estimate plasma fibrinogen level in smokers & non-smokers in order to provide and validate the evidence for high fibrinogen level in smokers as a risk factor for cardiovascular disease.
Study Design: Cross-sectional study
Place and Duration of Study: This study was conducted at the Govt. Lady Reading Hospital, Peshawar, from September 2016 to May 2017.
Materials and Methods: Subjects included 250 healthy male smokers and 250 healthy male non-smokers as control, selected randomly from general population of Peshawar. Smokers were divided into light, moderate & heavy smokers groups and also on the basis of duration of smoking. Fibrinogen level of whole sample was measured using coagulation analyzer Sysmex 530. The results were analyzed using SPSS 16.
Results: Out of 250 smokers, 94 (37.6%) were light smokers, 71 (28.4%) were moderate smokers and 85 (34%) were heavy smokers. 43 (17.2%) smokers were smoking for the last 5 years, 64 (25.6%) were smoking for 5 to 10 years and 143 (57.2%) were smokers for more than 10 years. Increased Fibrinogen level was noted with increasing intensity of smoking. Increased duration of smoking also increased the plasma fibrinogen in light and moderate smokers, while in heavy smokers smoking was the only dominant factor affecting the plasma fibrinogen.
Conclusion: Smoking was found to be a dominant determinant of plasma fibrinogen level in smokers who were otherwise healthy. The plasma fibrinogen was also found to be positively correlated with intensity and duration of smoking.

Key Words: Fibrinogen, smoking, cardiovascular disease.

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INTRODUCTION

Tobacco smoking is the inhalation of smoke from leaves of tobacco plant, usually in Cigarettes form[1]. Tobacco has been smoked in one form or another since 2000 BC. People often smoke, casually for pleasure, habitually to satisfy nicotine addiction or in response to social pressure[1].

Tobacco smoking is major health problem across the world and studies have shown direct relationship between smoking and different diseases e.g coronary artery disease(CAD), lung and bladder cancer, emphysema, neonatal mortality and peripheral vascular disease. Cigarette smoking is 1st modifiable and second major risk factor for cardiovascular disease e.g. aneurysms, coronary heart diseases (CHDs), stroke and peripheral vascular diseases [2].

Almost 50% of high risk of cardiovascular diseases in smokers is mediated through the effect of smoking on plasma fibrinogen which is raised in smokers as compared to non-smokers. Interlukein-6 level is increased by cigarette smoke in smokers by stimulation of macrophages in the lungs, which is mediated by increasing CD4O ligand (CD4OL) expression on platelets and CD4O expression on monocytes. Interleukein-6 when reaches liver, stimulates increased synthesis of fibrinogen by hepatocytes through inducing the binding of nuclear transcriptional factors to interleukein-6 responsive element of fibrinogen gene[3]. Fibrinogen formed in liver is an acute phase reactant later converted to fibrin[4]. Studies showed an important association between cardiovascular diseases and increased fibrinogen level. Plasma fibrinogen is also associated with the risk of COPD, its progression, and mortality even independent of other risk factors[5].

Recently, in addition to traditional risk factors for cardiovascular diseases a lot of attention has been paid to these newly identifiable risk factors for CVD whose presence may denote even greater risk than from

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summation of the traditional risk factor[6,7]. In men, incidence of Myocardial infarction (MI) is 6 times greater in those with high cholesterol and high fibrinogen level compared to those who had high cholesterol and low fibrinogen level[8,9].

The aim of our present study is to evaluate the plasma fibrinogen level in smokers in order to provide and validate the evidence for high fibrinogen level in smokers as a risk factor for cardiovascular disease in them, to compare fibrinogen levels among smokers and non-smokers and also to compare fibrinogen levels among smokers with respect to smoking status and duration.

MATERIALS AND METHODS

This cross sectional study was conducted at district Peshawar, from January 2017 to July 2017. Sample of 250 healthy male smokers as cases and 250 healthy male non-smokers as controls were taken. The smokers and controls were well matched according to age (Both the groups ranged from 25 years to 55 years of age). All these subjects were included on their own written informed consent after explaining the purpose of conducting this research.

An individual was labeled as smoker who smoked minimum of 5 cigarettes a day for at least past 5 years with no abstention from smoking in the past 1 to 2 weeks because abstention from smoking for a period of 1-2 weeks causes a significant fall in plasma fibrinogen level. On the other hand, the controls (non-smokers) were those individuals (in the same age group as smokers) who were neither active smokers (lifelong non-smokers), nor passive smokers. The smokers were divided into three different groups based on the number of cigarette they smoked per day viz. (i) Light smokers (who smoked 5 cigarettes per day) (ii) Moderate smokers (who smoked 6-10 cigarettes per day) and (iii) Heavy smokers (>10 cigarettes per day)[14,15]. Smokers were also divided in to three groups on the basis of duration of smoking as: (i) Those smoking for the last 5 years (ii) for 5-10 years and (iii) Those smoking for more than 10 years. Those subjects having any history of coagulation or bleeding disorder, history of cardiovascular disease diabetes, chronic chest, anyone with BMI more than 25 or having history of mental illness were excluded from the study. Moreover, subjects who have received blood transfusion within last four weeks or having history of using steroid or barbiturates and those who were ex-smokers were also excluded from the study.

The laboratory work of the study was conducted at the hematology section of Pathology department of Government Lady Reading Hospital, Peshawar. The fibrinogen level assessment was done applying Clauss principle and using coagulation analyzer Sysmex 530 and thrombin reagent. The results were analyzed using SPSS Version 16. Continuous numerical variables were presented as means ± SD. To check the significant differences between the means of healthy controls and that of smokers, independent two samples t-test was applied.

RESULTS

Out of 250 smokers, 94 (37.6%) were light smokers, 71 (28.4%) were moderate smokers and 85 (34%) were heavy smokers. 43 (17.2%) smokers were smoking for the last 5 years, 64 (25.6%) were smoking for more than 5 to 10 years and 143 (57.2%) were smokers for more than 10 years. Among those 43 smokers who were smoking for the last 5 years; 25 (58.1%) were light smokers; 10 (23.2%) were moderate smokers and 8 (18.6%) were heavy smokers. Among those 64 smokers who were smoking for 5-10 years; 26 (40.6%) were light smokers; 18 (28.1%) were moderate smokers and 20 (31.2%) were heavy smokers. Among those 143 (30.06%) smokers who were smoking for more than 10 years; 43(30.06%) were light smokers; 43 (30.06%) were moderate smokers and 57 (39.8%) were heavy smokers. The results are shown in Table No.1& Table No.2:

Table.No.1 Shows the comparison of mean plasma fibrinogen (mpf)level of light, moderate and heavy smokers withmpf level of controls . It was seen that the mpf level of light smokers,253.87 mg/dl ± 45.68 is significantly different from mpf level of controls,233.67mg/dl± 55.57 (p-value< .002) when compared. The mpf level of moderate smokers 316.71 mg/dl ± 57.51 was highly significantly different from mpf level of controls(p-value< .001)when compared .Similarly the mpf level of heavy smokers,407.45 mg/dl ± 80.12 was also highly significantly different from mpf level of controls showing a p-value of <0.001.

Table.No. 2 Shows comparison of mpf level of smokers of same smoking status among themselves regarding different duration since smoking, using t-test .It shows that among the light smokers ,when the mpf level of those smoking since 5 years(group 1),219.05 mg/dl ±36.73 were compared with mean fibrinogen level, 257.68 mg/dl ± 42.06 of those smoking since 5 to10years(group 2) ,the difference was highly significant(p-value<0.001).Similarly when the former group was compared with the mpf level,271 .48 mg/dl ±41.74 of group which was smoking since >10 years(group 3), again the difference was highly significant (p-value< 0.00 1).But when the mpf level of the those smoking since 5 to 10 years(group 2) was compared with the group smoking since >10 years(group 3) ,the difference was not significant(p-value<0. 192)

Among the moderate smokers, when the plasma fibrinogen level 269.7 1 mg/dl ±48.28 of (group 1) was compared with the mpf level, 295.52 mg/dl ± 52.02 of (group 2) ,the difference was found not to be

significant(p-value< 0.209).The comparison of former group with the mean fibrinogen level, 336.29 mg/dl ±52.98 of (group 3), however, showed significant difference(p-value< 0.00 1).Similarly when the plasma fibrinogen level of (group 2) was compared with (group 3) ,the difference was highly significant(p-value< 0.00 8)

Among the heavy smokers ,the comparison of mpf level 395.22 mg/dl ± 82.99 of (group 1) with mean fibrinogen level 400.22 mg/dl ± 81.25 of (group 2) showed non significant difference(p-value< 0.88).Similarly when the former group was compared with mpf level 411.70 mg/dl ± 80.44 of(group 3),the difference was non significant(p-value< 0.591).There was also non significant difference (p-value< 0.586) between the group 2 & group 3 in the mpf level.

Table No. 1: Comparison of mean plasma fibrinogen level in smokers and control

Smoking status	Smokers		Controls		*t*-ratio	P-value
	Mean	SD^{+}	Mean	SD		
Light	253.87 (94)	45.68	233.67 (250)	55.57	3.147**	<0.002
Moderate	316.71 (71)	57.51	233.67 (250)	55.57	1l.026**	<0.001
Heavy	407.45 (85)	80.12	233.67 (250)	55.57	2.208**	<0.001

The values in brackets are the number of respondents in a group; SD represents standard deviation; ** significant at 1 % level of significance

Table No. 2: Comparison of Mean Plasma Fibrinogen Level In Different Groups of Smokers of Same Smoking Status With Respect To Duration of Smoking

Light Smokers							
Group	Mean	SD	Group	Mean	SD	*t*-ratio	p-value
1	219.05(25)	36.73	2	257.68(25)	42.06	-3.458**	<0.00 1
1	219.05(25)	36.73	3	271.48(44)	41.74	-5.23 **	<0.001
2	257.68(25)	42.06	3	271.48(44)	41.74	1317 ^{NS}	<0.192
Moderate Smokers							
1	269.71(10)	48.28	2	295.52(18)	52.02	- l.290^{NS}	<0.209
1	269.71(10)	48.28	3	336.29(43)	52.98	- 3.63**	<0.001
2	295.52(18)	52.02	3	336.29(43)	52.98	- 2.755**	<0.008
Heavy smokers							
1	395.22(8)	82.99	2	400.22(20)	81.25	-0.146^{NS}	<0.88
1	395.22(8)	82.99	3	411.70(57)	80.44	-0.4l ^{NS}	<0.591
2	400.22(20)	81.25	3	411.70(57)	80.44	0547^{NS}	<0.586

Shows the number of respondents in the corresponding group. SD sand for standard deviation ** indicates significant at 1% level of significance; NS stands for non significant. 1, 2 and 3 denotes the duration groups (5 years), (5-l0 years) and (>l0 years)

DISCUSSION

The present study was aimed to identify and confirm one of the most important risk factor i.e. high fibrinogen level in smokers of our population. In this cross section population based study, we were able to demonstrate dose effect of fibrinogen from cigarette smoking and also its correlation with duration of smoking.

In a study, almost 50% of cardiovascular risk attributable to smoking was mediated through an increase in fibrinogen level requiring the need for such studies to identify and validate the role of high fibrinogen level in smokers of general population[10-12]. A study was conducted in Dow Medical College Karachi. This study compared the patients with ischemic heart disease to the healthy controls. Patients were sub grouped into smokers and non-smokers and the results showed that fibrinogen levels of smokers differed significantly from non-smoking healthy controls as well as non-smoker patients[13,14]. Another previous study conducted on smokers' fibrinogen level, in which smokers were divided into light and heavier smokers; fibrinogen levels were found higher in heavier smokers as compared to lighter smokers[15].

We compared our results to all these studies and found that the result of present study are exactly consistent with these previous studies, showing that fibrinogen levels are consistently higher in all three categories of smokers as compared to non-smokers showing a P-value <0.002, 0.001 and 0.001 in light, moderate and heavy smokers respectively as compared to non-smokers control. Also in our study, when light smokers were compared to moderate and heavy; the difference found in mean plasma fibrinogen level was highly significant (p-value 0.001) in both. Similarly comparison of moderate smokers to heavy smokers with regard to the mean fibrinogen level also showed highly significant difference (p-value 0.00 1) which is consistent with previous studies i.e showing positive relation of fibrinogen level to the increasing number of cigarettes

smoked. These findings are consistent with the study done by Robert.S. Rosenson in 2005[16].

The present investigation shows that difference in duration since smoking doesn't influence mean plasma fibrinogen level except in light smokers where comparison of mean fibrinogen level of subjects smoking since 5 years showed significant difference when compared with fibrinogen level of subjects smoking for 5-10 years and to subjects smoking since >10 years. It also shows variable results in three categories of smoking status with respect to duration since smoking. Among light smokers, comparison of mean fibrinogen level of subjects smoking since 5 years to mean fibrinogen of subjects smoking for >5-10 years showed significant difference. Similarly comparison of mean fibrinogen level of subjects smoking for 5 years and subjects having history of smoking since>10 years also showed significant difference. However, comparison of smokers with habit extending over 5 to 10 years with the ones with>10 years history showed no significant difference. The reason might be that most probably the 5 years duration is not too much to influence the fibrinogen level. While the 10 years duration is enough to affect fibrinogen level even within the same smoking status.

Among the heavy smokers, none of the duration differed from other significantly probably because with heavy smoking, the intensity of smoking is dominant factor determining the fibrinogen level, irrespective of duration of smoking. So in this respect our study is exactly consistent with the previous studies where they found duration not to be associated positively to fibrinogen if the smoking intensity is the same[15]. The ultimate conclusion of duration comparison in our study shows that duration does affect the fibrinogen level in light and moderate smokers to some extent but there is no effect of duration since smoking upon fibrinogen level in heavy smokers group.

CONCLUSION

On the basis of present study, we conclude that among the smokers the concentration of fibrinogen increases as the intensity & duration of smoking increases thus reflecting the high risk of cardiovascular disease in heavy smokers as compared to moderate smokers and more risk in moderate as compared to light smokers.

Author's Contribution:

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Original Article

Reproductive Tract Infections

Frequency and Microbiological Profile of Reproductive Tract Infections in Women using Intra-Uterine Devices as a Mode of Contraception

Muhammad Usman Anjum[1], Sidra Farooq[3], Rana Tauqir Ullah Khan[2], and Nazia Shams[1]

ABSTRACT

Objective: To determine the frequency and etiological agents responsible for reproductive tract infections in women using intra-uterine devices as a mode of contraception

Study Design: Descriptive study

Place and Duration of Study: This study was conducted at the Department of Pathology, Frontier Medical & Dental College, Abbottabad and Obstet. & Gynae, Benazir Bhutto Shaheed Teaching Hospital, Abbottabad from December 2016 to June 2017.

Materials and Methods: Total of 203 female patients who have chosen IUD as a method of contraception were included in the study. High vaginal and endocervical swabs were taken and sent for microbiological analysis from patients who presented with clinical features of reproductive tract infection.

Results: Mean age of study participants was 32.61±5.49 years and mean duration of the next visit after IUD insertion was 24.30±6.90 days. Sixty patients presented with RTI and 32 of these patients presented within three weeks of insertion of IUDs. The incidence of RTIs was 29.56% and commonest isolates were Ureaplasmaurealyticum, Escherichia coli and Gardnerellavaginalis.

Conclusion: All women who opt for IUD as a mode of contraception must be screened for Ureaplasmaurealyticum and other microbes prior to IUD insertion to avoid infections by these organisms later. Longitudinal studies with longer follow up periods should be conducted to accurately determine the frequency of RTIs as well as microbiological agents responsible for these infections.

Key Words: Infections, contraceptive, intra-uterine device

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INTRODUCTION

Reproductive tract infections (RTIs) are characterized by the infection of genital or reproductive tract in sexually active women of reproductive age group.[1] They are ranked fifth among infectious diseases as a cause of soliciting medical care among adults and about 1/3rd of these infections occur in people of less than 25 years of age worldwide.[2] A patient suffering from RTI can present with different symptoms i.e. vaginal discharge, backache, genital ulcers, itching etc.[1] There are numerous risk factors which predispose women of reproductive age to acquire RTIs. These risk factors include menstruation, vaginal contraceptives, pregnancy and child-birth.[3]

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Intrauterine devices (IUDs) are commonly used and preferred mode of contraception with a prevalence rate of 15%.[4] They offer long-term contraception and they are also cost effective and well-tolerated.[5, 6]IUDs are being used by more than 80 million women globally as a mode of contraception and their efficacy parallels that of tubal sterilization.[6, 7]But, they have not gained much popularity in certain geographical areas due to the anticipated risk of pelvic inflammatory disease (PID) which in turn can lead to various complications e.g. ectopic pregnancy and infertility. It is believed that presence of IUD in uterine cavity predisposes host to infections and thus, PID.[7] Micro-organisms, which are part of normal flora of female genital tract, are pushed up while placement of IUDs specifically by their tail. Hence, placement and presence of IUD may lead to bacterial contamination of endometrial cavity which in turn leads to PID.[6]

This study is carried out with the aim of determining the rate of RTIs as well as the etiological agents responsible for RTIs among females using IUD as a contraceptive method.

MATERIALS AND METHODS

This study was conducted at the Department of Pathology, Frontier Medical & Dental College,

Abbottabad and Obstet. & Gynae, Benazir Bhutto Shaheed Teaching Hospital, Abbottabad from December 2016 to June 2017. This was a descriptive study with consecutive non-probability sampling.

All patients between the ages of 18 – 50 years and who preferred IUD as a contraceptive method were included in the study. Pregnant women or those with anatomical gynecological defects or gynecological malignancies were excluded from the study.

About 203 patients who fulfilled the inclusion criteria were included in the study. Detailed history and examination was carried out by an experienced gynecologist. IUD was inserted using sterile technique. Afterwards, patients were advised follow up after one month. They were advised to report back immediately in case of lower abdominal pain, vaginal spotting and discharge. In patients suspected of RTIs, high vaginal and endocervical swabs were taken and sent for microbiological examination. Bacterial isolates were identified using standard laboratory techniques.[8] All the details regarding study participants were recorded in a proforma.

Data was stored and processed using SPSS version 21. Numerical variables like age and duration were represented as mean and standard deviation while categorical variables were represented as frequencies and percentages. Chi square test, with p value of less than 5 taken as significant, was used to study the relationship among different variables.

RESULTS

The mean age of 203 study participants was 32.61±5.49 years (range: 24 – 42 years). Mean duration of the next visit after IUD insertion was 24.30±6.90 days (range: 12 – 35 days).

Sixty patients, (29.56%), were diagnosed with genital tract infection, Table 1.

Table No. 1. Genital tract infections in study participants, (n=203)

Genital Tract Infection	Number	Percentage
Present	60	29.56%
Absent	143	70.44%
Total	203	100%

Table No. 2. Stratification of RTIs according to age and duration after insertion of IUD, (n=60)

Duration of IUD insertion	Genital tract infection		P value
	Present	Absent	
≤ 21 days	32	40	0.001*
22 - 42 days	28	103	
Total	60	143	
Age of patients			
24 – 33 years	34	73	0.46
34 – 43 years	26	70	
Total	60	143	

* P-value < 0.05

It was observed that most of genital infections were observed in younger patients between the ages of 24 – 33 years and the patients who developed these infections presented earlier usually in first three weeks after IUD insertion, Table 2.

Majority of patients, 20 (9.85%), were suffering from Ureaplasmaurealyticum infection followed by Escherichia coli infection in 16 (7.88%) patients. Whereas each of Gardnerellavaginalis and Neisseria gonorrhoeae were responsible for infection in 8 (3.94%) patients each, Table 3.

Table No. 3. Micro-organisms responsible for RTIs, (n=60)

Causative organism	Number of patients	%age
Ureaplasmaurealyticum	20	9.85%
Escherichia coli	16	7.88%
Neisseria gonorrhoeae	08	3.94%
Gardnerellavaginalis	08	3.94%
Mycoplasma hominis	04	1.97%
Chlamydia trachomatis	04	1.97%
Total	60	29.55%

DISCUSSION

Reproductive tract infections pose a significant public health threat and are second most common reason for healthy life loss among females of reproductive age group in developing countries.[9] It is estimated that more than 200 million women suffer from RTIs each year in developing countries.[10] RTIs occurring secondary to contraceptives lead to ectopic pregnancy, infertility and pelvic inflammatory disease which in turn lead to higher morbidity and mortality in mothers and their neonates.[8] There is a significant loss of economic productivity secondary to morbidity related to RTIs.[9]

In our study, sixty patients, (29.56%), were diagnosed with RTIs. Most of the patients, 56.67%, who were suffering from RTIs were between the ages of 24 – 33 years. Similar to our study, Ferraz et al have reported the prevalence of these infections to be 29.1% among their Brazilian patients.[11] Likewise, Egbe et al have found that the frequency of RTIs was 36.90% among their Nigerian subjects while majority of their patients, (68.18%), were between the ages of 26 – 30 years.[8] In another study conducted in Turkey by Deveer et al, the rate of RTIs was reported to be 55.9%.[5] The difference in reported rate of RTIs among different studies could be due to the variation in the rate and acceptability of IUD as a contraceptive method in different countries. Majority of our patients, 53.33%, suffering from RTIs presented within first three weeks after insertion of IUD.It is also reported that there is a higher risk of developing RTIs within first few weeks of contraceptive use especially IUDs.[6, 12]

Ureaplasmaurealyticum was the most common isolate found in our patients followed by Escherichia coliand

Neisseria gonorrhoeae. Deveer et al have found that the most common isolate was Ureaplasmaurealyticum followed by Mycoplasma hominis and Escherichia coli in their study.[5] Likewise, Kaliterna et al have reported that the most common isolates among IUD users were Ureaplasmaurealyticum and Escherichia coliin their Croatian subjects.[13] The higher incidence of Ureaplasmaurealyticum may be due to the fact that these micro-organisms are part of normal flora of female genital tract and therefore, they reach uterine cavity by the tail of IUD while insertion of IUDs.

CONCLUSION

The prevalence of RTIs was 29.56% with Ureaplasmaurealyticum and Escherichia coli as the most common isolates. Most of the patients presented within first three weeks after insertion of IUD. All women who opt for IUD as a mode of contraception must be screened for Ureaplasmaurealyticum and other microbes prior to IUD insertion to avoid infections by these organisms later. Longitudinal studies with longer follow up periods should be conducted to accurately determine the frequency of RTIs as well as microbiological agents responsible for these infections.

Author's Contribution:

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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

Congenital Clasped Thumb

Management Issues with Congenital Flexion-Adduction Deformity of the Thumb (Congenital Clasped Thumb) A Single Center Experience

Maryam Noor[1], Mirza Shehab Afzal Beg[1], Syed Sheeraz ur Rahman[2] and Batool Urooj Rajput[2]

ABSTRACT

Objective: To describe the pattern of extensor mechanism deformity and associated first web space contractures in patients with congenital clasped thumb and their outcomes.
Study Design: Retrospective case series.
Place and Duration of Study: This study was conducted at the Department of Plastic and Reconstructive Surgery, Liaquat National Hopsital, Karachi including data of the patients from 1997 to 2016.
Materials and Methods: 12 patients (20 thumbs) with clasped thumb are reported who underwent treatment. The series is divided into two groups according to the Weckesser classification. In the first group, the prominent pathological feature was hypoplasia /absence of the extensor tendons. The second group, the arthrogryphotic type, had hypoplasia/absence of extensor mechanism along with contracture of the intrinsic muscles of the thumb and shortening of the skin. Instability of the Metacarpo-phalangeal joint and adduction contracture of the first ray were found in 2 hands of the second group. Splinting only was adopted in 7 thumbs and surgical treatment was performed on 13 thumbs, with an average follow –up of 24 months.
Results: Conservative treatment is effective in type I cases when presented early. All patients were satisfied with the results of surgical treatment employed for type-II deformity.
Conclusion: Isolated clasped thumb deformities that lacked the extensor mechanism and failed to respond to conservative treatment with splinting, EIP tendon transfer and correction of first web space contracture with Z-plasty was found to be a successful and acceptable reconstructive option.
Key Words: Clapsed thumb, Weckesser classification, Splinting, Tendon transfer.

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INTRODUCTION

Congenital clasped thumb is progressive flexion and adduction deformity that is associated with a wide array of congenital anomalies, although it may also be present as an isolated abnormality[1]. This rare disease is characterized by deficiency of extensor pollicis brevis (EPB) or longus (EPL) or both and sometimes Abductor Pollicis longus (APL) due to functional or structural causes. The deformity is usually accompanied with a variable degree of narrowing and contracture of the first web space[4,5]. There is association of this disease with other generalized musculo-skeletal malformations, commonly; arthrogryposis, digitotalar dysmorphism and Freeman–Sheldon syndrome[6].

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The diagnosis is usually made if clasping persists and normal independent function of thumb does not develop by the age 3 to 4 months. It is often confused with trigger finger deformity because of fixed flexion found in thumb especially if the underlying pathology includes absence of EPL. Diagnosis can be made by passively correcting the flexion deformity which can be seen in case of congenital clasped thumb while difficult passive Interphalangeal joint extension and clicking sound is observed in trigger thumb.[7]
Several treatment options are available for congenital clasped thumb but choice depends on the type of deformity present. Conservative treatment with splinting has been successful but operative intervention is required for cases that developed web space contractures secondarily in neglected cases. Tendon transfers are useful in cases with deficient extensor mechanism[8].

MATERIALS AND METHODS

The study was conducted at department of Plastic and reconstructive surgery, Liaquat National Hopsital,

Karachi Including data of the patients from 1997 to 2016.

Inclusion Criteria:

- Irrespective of race and gender, patients age of 5 and 36 months were included in the study.
- Patients with type-I and type-II deformity with unilateral or bilateral hand involvement.

Exclusion Criteria:

- Patients with type-III and type-IV deformity
- Patients previously operated for same deformity.

The patients were enrolled by using a preformed following proforma after taking informed consent from parents or care taker of the patient by primary investigator:-

Proforma

A. Sr.No._____ B. Case Number:_____
C. Age: _____ (months)
D. Gender 1. Male 2. Female
E. Site: 1. Unilateral a. Right b. Left
2. Bilateral
F. Type of deformity: 1. Type-I 2. Type-II
G. Treatment: 1. Surgical 2. Non-surgical
H. Outcome: 1. Excellent 2. Good
3. Fair 4. Poor
I. Over all outcome: 1. Improved 2.Not improved

Data was entered and analyzed by using statistical software SPSS version 23.

They were exposed to thorough assessment, including recording of the family history, pregnancy history and full clinical assessment by experienced pediatrician and echocardiography was done when recommended to rule out associated anomalies.

To assess the type of deformity (according to Weckesser et al classification), every patient was subjected to detailed clinical and radiographic examination by an experienced hand surgeon.

Operational Definitions: The deformed thumbs were classified according to Weckesser et al classification in to 4 types:

Type 1	Supple and normal sized thumb with absent or hypoplastic extensor mechanism. The thumb could be passively abducted and extended against the resistance of thumb flexors
Type 2	Complex with additional findings of joint contracture, first web space contracture, Thenar muscles and collateral ligament abnormality. The thumb could not be passively extended and abducted.
Type 3	Hypoplastic Thumb with deficient tendons and muscles.
Type 4	Clasped thumbs associated with Arthrogryposis and its associated syndromes. The extensor mechanism may have little or no abnormality.

Simplified Gilbert's Chart

Function of thumb	Excellent	Good	Fair	Poor
Abduction	40◦ - 45◦	30◦ - 40◦	10◦ - 30◦	< 10◦
Opposition	With little	With ring	With middle	none

Treatment Protocols: All procedures were performed by the same hand surgeon.

- **Non-Operative Treatment:**

Full time splinting of thumb in extension and abduction for 6 months with plaster cast changed every 6 weeks to allow for growth of the hand. This was followed by night splinting for further 6 months after achieving active extension of the thumb. [Figure 2: Non-operative: splinting of thumb in extension and abduction]

- **Operative treatment:**

Reconstructive options for every case were different based on the underlying deformity found, i.e. degree of narrowing of the first web, stability of the metacarpophalangeal (MP) joint and muscle deficiency.[Figure 3: Operative release of webspace with z-plasty5]

The surgical treatment mainly aimed at widening the narrowing of the first web space, including the deep tight structures. The web space narrowing was released in almost all case by a simple Z-plasty except in one where a dorsal rotational advancement flap was used due to severe web space narrowing. Through the skin incision designed to widen the web space, the dissection was deepened to the underlying fascia over the thenar muscles, protecting the flexor tendons and the neurovascular bundle to the index finger. The tight structures were identified and released. The origin of adductor pollicis muscle was released from the third metacarpus in one patient. The thumb was then manipulated into extension and abduction after achieving full release and held in position by 2 crossed k-wires across the web space. One wire passed longitudinally through the thumb, transfixing and holding all joints in extension and wide abduction. A second k-wire passed transversely through the metacarpal, transfixing it to the index metacarpal.

Active extension of the first MP joint was restored by tendon transfer. The preferred tendon was EIP (Extensor indicis) and if that was found to be deficient, a slip of FDS (Flexor digitorum superficialis) was used and transferred to the remnants of vestigial extensor mechanism. EIP tendon was found through a mini incision at second MCP joint from the dorsum of the hand and tenotomized, pulled to wrist level, and then transferred to thumb with a subcutaneous tunnel and attached to the proximal phalanx base.

- **Post-Operative Management:**

An above-elbow splint was applied immediately. The k-wires were removed after 6 weeks of surgery. The

position of thumb in extension was maintained in a night splint for at least 6 months post-operatively, active use of thumb was encouraged during day time.
The assessment of results was done using the following criteria:

Cosmetic appearance: First web space was deepened by a simple z-plasty improving the appearance of hand.

- The modified dorsal rotational advancement flap allowed maximal degree of widening of the web space

Function of Thumb:

- Simplified Gilbert's method was used to assess the functional outcome.

RESULTS

12 patients were studied, out of which 4 (33.3%) had unilateral and 8 (66.7%) had bilateral thumb involvement. Hence, a total of 20 clasped thumbs (subjects) were included. There were 7(58%) males [3 (25%) unilateral, 4 (33.3%) bilateral] and 5(41%) females [1 (8.3%) unilateral, 4 (33.3%) bilateral]. Table
Mean age was 17.9 (± 10.02) months (range: 5 to 36 months) at presentation. All cases presented with the main finding of lack of active extension of the thumb.
20 thumbs were treated. Non-operative treatment was carried out in 7 (35%) thumbs [5 (25%) type-I, 2 (10%) type-II] who presented before the age of 12 months. Operative treatment was done in 13 (65%) thumbs, [all type-II] who presented later than 12 months of age or which had not responded to non-operative treatment.
There was improvement in all the operated thumbs. Outcome was excellent in 5 (25%) and good in 6 (30%) thumbs, and were able to pick up a pen, a key and grasp a ball with full active extension at all joints of thumb.
Non-operative treatment was successful in all type-I thumbs i.e. 5 (25%), outcome was excellent in 3 and good in 2 thumbs. They were able to pick up a pen, a key and grasp a ball with full active extension at all joints of thumb. The outcome was poor all type-II thumbs i.e. 2 (10%) [1 fair, 1 poor), requiring surgical intervention later. Figure 1.

Table No.1: Patients ratio with regard to unilateral and bilateral.

	Unilateral	Bilateral	Total
Male	3 (25%)	4 (33.3%)	7 (58.3%)
Female	1 (8.3%)	4 (33.3%)	5 (41.7%)
Total	4 (33.3%)	8 (66.7%)	12 (100.%)

According to our results, out of all type-II thumbs that were treated surgically, the failure rate was around 15%. While all type –II thumbs treated with splinting only showed no improvement.

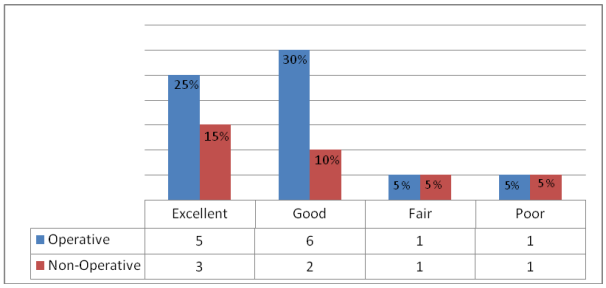

Figure No.1: Patients operative and non-operative results.

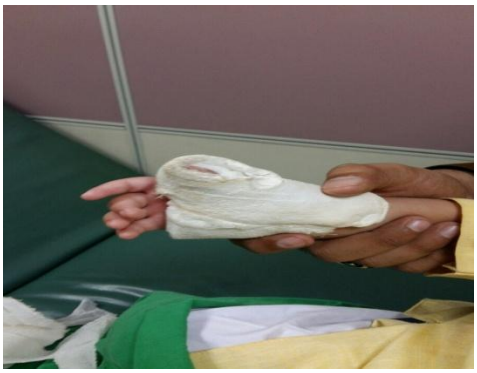

Figure No. 2: Non-operative: splinting of thumb in extension and abduction

Figure No.3: Operative release of webspace with z-plasty

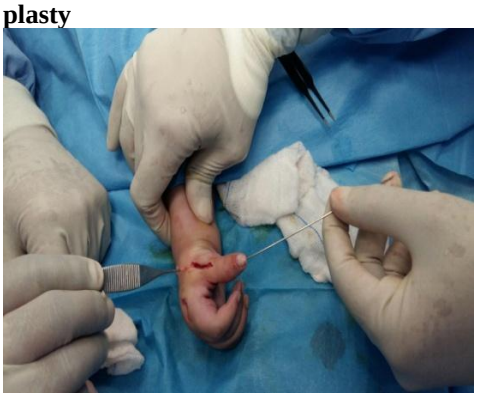

Figure No.4: EIP tendon re-routed for transfer

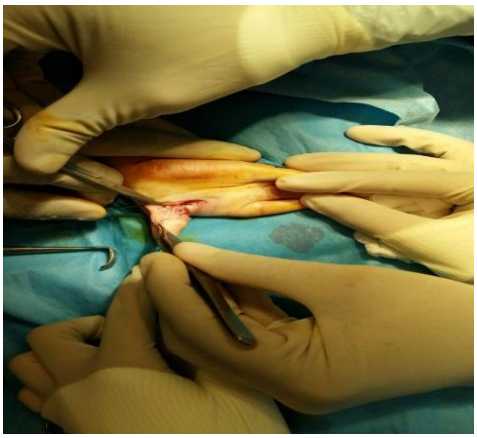

Figure No.5: EIP attached to proximal phalynx base and thumb in abduction & extension

DISCUSSION

As early as 1846, Tamplin described a case of adducted thumb deformity. This deformity is sometimes referred to as Thumb- Clutched hand, but a better term is a congenital clasped thumb.[1,3,5]

The congenital clasped thumb is associated with various well defined syndromes, it may also present as an isolated abnormality. With regards to the possible predisposing factors, the incidence of positive consanguinity ranges from 10% - 60%and positive family history is 32.5%, as reported by Tsuyuguchi et al and Ghani et al. the high incidence of bilateral cases strongly suggest the genetic predisposition as an important causative factor and this is in accordance with the literature. However, the exact cause remains known to date. Similar findings were noted in our study with positive consanguinity and family history in about one-fourth of our cases.[3,9]

With regards to the gender predilection of the disease, a male predominance was seen in our study which is similar to the ratio of 2.5:1 as reported by Ghani et al and Lin et al. however, it differs from the 1 : 1 ratio reported by Tsuyuguchi et al[10]. This difference may be due to the fact that clasped thumb is associated with various syndromes that have varied modes of inheritance and also to the small number of reports in the literature that document the gender predisposition of the affected cases.

It is a syndrome characterized by loss of active extension of thumb due to absence of the extensor mechanism i.e. EPB / EPL alone or both[1,5]. Several Classification systems exist to categorize congenital clasped thumb. The first classification system however was designed by Weckesser et al in 1968 and in 1985 Tsuyugushi et al classified congenital clasped thumb in to three types. McCarroll and Tsuyugushi's classifications are amongst the most commonly used [2]. Weckesser, Reed and Heiple called it a syndrome and divided it into 4 groups. In Group 1, the thumb was deficient in extension only[2,10]. In Group 2, flexion contractures accompany deficient extension. In Group 3, the thumb is hypoplastic with deficient tendons and muscles. Group 4 consists of the few remaining cases that do not fit in first 3 groups (i.e. Arthrogryposis and its associated syndromes like MASA). Literature supports that group 2 cases appear three times as frequently as group 1, while group 3 and 4 are five times less frequent than group 2. McCarroll simply categorized this deformity into flexible and complex types.

Diagnosis is usually difficult during early weeks of life, an infant frequently clutches the thumb and releases it intermittently in spontaneous motion. However, by 3 or 4 months of life, the normal child ceases to clasp his thumb under his fingers. If clasping persists and normal independent action of thumb does not develop, the syndrome of congenital clasped thumb is present. For the reason of fixated deformity of the thumb, this condition is usually confused with trigger thumb[11]. Ruland and Slake reported that flexion deformity in clasped thumb syndrome may be confused with trigger thumb and thus may lead to unnecessary releasing surgeries. This approach aggravates symptoms instead of relieving them[7].

Characteristically, the first metacarpal is held in adduction and proximal phalanx becomes flexed and partially subluxated[5]. Ulnar deviation of the rest of the hand is another common feature. The thumb flexes at the interphalangeal joint when the Extensor Pollicis Longus is absent. The thumb flexes at MP joint and drops to the palm when the Extensor Pollicis Brevis becomes ineffective. When the Abductor Pollicis Longus fails to function, the whole thumb lies against the palm and touches the ulnar border of the hand[1,12,13].

Treatment of congenital clasped thumb depends on the disease stage, age at presentation and associated pathologies. The treatment protocol employed in our series was similar to that followed by Weckesser et al and McCarroll who divided the clasped thumb into two types (supple and complex) The supple deformity was treated with splinting initially with operative intervention in terms of tendon transfer used for cases that failed to respond to conservative management[2,3]. The fixed flexion deformity of the complex type was treated with reconstruction of web space contracture, lax ligaments and hypoplastic or absent extensor mechanism of thumb as appropriate.

There may be no universal criteria for the evaluation of the results due to the inability in assessing the thumb function at that young age. Some authors used the degree of active extension of first MP joint as the reference for evaluation[4,8-14]. Tsuyuguchi et al added the degree of active radial abduction of the Trapeziometacarpal joint to their system of evaluation. Lipskeir and Weizenbluth added width of the first web space to their scoring system and mentioned that active extension of the first MP joint is the most important factor. For our study simplified Gilbert's method was used that focuses on the degree of abduction and opposition of the thumb[1-4, 8, 11, 19, 20].

In this study we noted that the underlying pathology in each case was different and the severity of the disease

with the appropriate treatment offered was dependent mainly on the age of the patient at the time of presentation. In our study, type 1 cases treated with splinting achieved excellent to good results in 5 out of the 7 cases with poor outcome in only 2 thumbs. Almost all type 2 cases given the option of surgical intervention in terms of Tendon transfer showed excellent results with only 2 cases required repeat intervention. The results of our study are consistent with those seen in the literature. Tsuyuguchi et al reported that good results were achieved with type 1 and type 2 cases with conservative methods. In type 2 and type 3, cases in whom conservative treatment is ineffective surgical treatment produces good results[3,9,14]. Ghani et al, Lin et al and Medina et al reported that conservative treatment was effective for patients under 1 – 2 years of age but patients who have skin contractures, absence or weakness of extensor mechanism of thumb and patients with severe hypoplasia or agenesis of thumb, yield better results with surgery.

CONCLUSION

Congenital clasped thumb is a rare but progressive flexion-adduction deformity. If diagnosed timely, proper planning of the treatment according to the degree of severity and type of deformity can restore hand to its full functional capability.

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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

Prevalence of Toxoplasma Gondii Infection in Females with Bad Obstetric History in Mardan District

Farhat Rehman, Naila Aslam and Fazal Rahim

ABSTRACT

Objective: Toxoplasma gondii infection is a potential threat in pregnant women leading to abortion, intrauterine fetal death and congenital toxoplasmosis in newborns. The study was conducted to determine the prevalence of Toxoplasma gondii infection among pregnant women with history of recurrent pregnancy loss.

Study Design: Cross sectional study.

Place and Duration of Study: This study was conducted at the Gynaecology and Obstetric outdoor department of Mardan Medical Complex and Teaching Hospital, Mardan from October 2016 to April 2017.

Materials and Methods: The study included 360 women of child bearing age from urban and rural areas of Mardan district. Study group comprised of 180 females with recurrent pregnancy loss. The control group included 180 females of approximately the same age and parity. After informed written consent, the obtained sera were examined for Toxoplasma IgM and IgG antibodies by using Enzyme Linked Immunosorbent Assay. Toxo IgM and IgG index of 1 or greater were considered as positive for infection with the protozoan.

Results: The study group showed 6.9% (n=25) seropositivity for Toxo IgM antibodies, IgG antibodies were 15% (n=54), while, 1.9% (n=7) females showed both IgM and IgG antibodies in their serum. Over all seroprevelance was 40.5% among study group as compared to 7.2% among the controls. The incidence of infection was observed as increasing with advancing maternal age. High incidence of both IgM and IgG antibodies was found among women between 31 to 35 years age group.

Conclusion: The seroprevelance is much high as has been reported from other parts of the country. Therefore, it is now the time for further in depth studies regarding this hidden problem which is a potential risk for recurrent fetal loss in pregnant women.

Key Words: Toxoplasma gondii, IgM, IgG, antibodies, ELISA

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INTRODUCTION

Toxoplasma gondii is an obligate intra cellular protozoan belonging to phylum Apicomplexan. It can infect all nucleated cells in various warm blooded animals[1]. Humans are prone to toxoplasmosis by consuming infected meat of the animals or by ingesting its cysts found in the soil, contaminated food and water[2]. Newborns get infected from their mothers by vertical transmission through placenta [3]. This may lead to various complications in fetus including abortion, hydrocephalus, premature births, intrauterine growth retardation, still birth, retinal damage and brain calcification [2,3,4]. The fetal manifestations are related to the time when the infection is contacted. The earlier a mother is infected the worst will be the manifestations in the developing fetus[4,5]. Immuno compromised individuals are more prone to infection specially HIV infected persons.[5,6]

Various studies are conducted worldwide including Pakistan regarding this hidden public health problem especially affecting pregnant women.[7]The infection is usually asymptomatic in healthy individuals. The prevalence rate varies widely. In well developed countries like USA it is 10% among pregnant females.[8] Other countries like Brazil, Thailand, China, Japan, India and Iran shows a much higher rate of 50-80%[8,9,10]. The prevalence rate of Toxoplasmosis among pregnant women in Pakistan also varies. In Punjab it was found to be 63%. In Azad Kashmir 48% and in Khyber Pukhtunkhwa it was found 38% in recent past studies[11]. The diagnosis of the disease requires serological tests to determine anti toxoplasma antibodies including IgM, IgG and IgA. Females with positive IgM antibodies require caution and further serological tests to confirm acute infection. In pregnant females amniocentesis is required to confirm the diagnosis by doing PCR or animal inoculation to detect the infection[12]. Keeping in view the previous studies regarding its prevalence rate

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and its complications in pregnant women and newborns, the study was conducted to determine the seroprevelance among women with previous history of recurrent pregnancy loss in Mardan district.

MATERIALS AND METHODS

Study area and population: The study was conducted at Gynaecology and Obstetric outdoor department of Mardan Medical Complex and Teaching Hospital, from October 2016 to April 2017. It included 360 pregnant women from various rural and urban areas of district Mardan. Study group included 180 females with previous history of recurrent pregnancy loss. Control group included 180 females with no such history of pregnancy loss. An informed written consent was taken and all personal, clinical information and obstetrical data were recorded.

Inclusion/exclusion criteria

The study group included females of child bearing age having previous history of two or more than two pregnancy loss like abortions, still birth, perinatal/ neonatal death. The control group included females of approximately the same age with no such history of recurrent pregnancy loss. Exclusion criteria included primigravida, pregnancy induced hypertension, gestational diabetes, RH incompatibility and history of recent vaccination.

Sample collection: Observing strict aseptic technique 4 ml of blood from cubital vein was collected and was immediately centrifuged at 4000 revolutions per minute for 7 minutes. The clear transparent serum was transferred to gel tube bearing serial number, date and name of person. It was kept at -20C^{o} in freezer for future serological analysis.

Serological Methods: The collected samples were screened for specific Toxo IgM and Toxo IgG antibodies by using Enzyme Linked Immunosorbent Assay (ELISA) Kit (BioCheck USA).

Interpretation of Test: . Toxo IgM and IgG index less than 0.9 (<321IU/ml) was considered as negative. While Ig index equal or between 0.9-0.99 were considered equivocal. Toxo IgM and Toxo IgG index 1.0 and above (321≥ IU/ml) were considered as positive. Calculations were made by absorbance of each tested sample including negative and positive controls.

Statisticalanalysis: Biostatistical analysis was done by using SPSS version 20(SPSS Inc. Chicago, IL, USA).

RESULTS

Table 1 shows Seroposivity of *Toxoplasma gondii* in study and control groups. Females with bad obstetric history (BOH study group) show overall 40.5 % (n-73) positive cases as compared to 7.2 % (n-13) in control group. In BOH study group IgG antibodies were positive in 43 females (23.9 %), while 11 cases (6.1 %) were found positive in controls. IgM antibodies which depict recent infection were positive in 23 (12.8 %) females of the study group. In the control group only 2(1.11%) cases were found positive with IgM antibodies. Both IgG, IgM positive in study group were 7 (3.88%) females while none was positive in control group. Over all seropositivity in both groups was 47.7 %.Using Pearson chi-square test highly Significant difference was found for the seropositivity between the females of BOH study group and controls with p-value = 0.000.

Table No. 1. Seroprevelance of Toxoplasma gondii in study and control groups

Group	Number of cases	IgG positive	IgM positive	Both IgG IgM positive	Total positive cases	P-value
Study	180	43 (23.9 %)	23 (12.8 %)	7 (3.8%)	73 (40.5 %)	0.000
Control	180	11 (6.1%)	2 (1.1%)	0	13 (7.2%)	
Total	360	54 (15%)	25 (6.9%)	7 (1.9%)	86 (23.89%)	

Table No. 2. Advancing maternal age and seropositivity Toxo IgM antibodies in study group

Age in years	IgM Negative	IgM Positive	Total
≤ 25 yrs %age	5 100%	0 0%	5 100%
26—30 %age	48 90.5%	5 9.4%	53 100%
31—35 %age	57 83.7%	11 16.2%	68 100%
≥ 36 yrs %age	47 87.0%	7 13.0%	54 100%
Total %age	157 87.32	23 12.8%	180 100%

Table 2 shows the relationship between advancing maternal age and its effects on IgM seroprevelance. Females with age ≤ 25 were 5 and all were IgM negative (100%). Females aged 26—30 years included 53, out of them 48 (90.6%) were IgM negative while 05 (9.4%) were IgM positive. Third group included females between age 31—35 years, there were 68 females, among them 57 (83.8%) were IgM negative and 11 (16.2%) were IgM positive. The forth group comprised of females aged 36 years and above. It included 54 females and among them 47(87%) were IgM negative where as 7(13%) females were found IgM positive. The above data showed that the seroprevelance increased with advancing maternal age.

Maximum numbers of IgM seropositive females were 31 to 35 years age.

DISCUSSION

Toxoplasmosis is a zoonotic disease which is distributed worldwide. Its prevalence in third world countries is high due to their low socioeconomic status and lack of education among females .It is estimated to have affected one third of the world population[2.] . People living in rural areas are at a greater risk. This is due to abundance of the feline (cat) which serve as intermediate host for the parasite. Poor hygienic conditions and consuming contaminated food add to the risk [8,9] . Toxoplasmosis gained attention when it was found in patients with AIDS, and those receiving immuno suppressive therapy causing serious manifestations like meningitis, and focal calcifications in brain [9].Its effects in pregnant females are drastic if the disease is contracted in early trimester[8,9]. It includes abortion in early trimester or may result in congenital toxoplasmosis in newborn. This is due to vertical transmission to fetus from an infected mother.[12,13] The present study shows that females with recurrent pregnancy loss (study group) were having an overall 40.5 % (n-73) seropositive as compared to 7.2 % (n-13) in the control group (Table 1). In the study group IgG antibodies were positive among 43 females (23.9 %), which signify previous infection, while 11 cases (6.1 %) were positive in controls. IgM antibodies which show recent infection were positive in 23 (12.8 %) females of the study group as compared to only 2 (1.11%) in controls. Both IgG, IgM positive in study group were 7 (3.88%) females while none was positive in control group (Table 1). These results are higher as compared to the study conducted by Shahid *et al* in Kohat in 2011[7], which demonstrated an overall 14.4% seroprevelance in pregnant women; this difference could be due to random collection of their samples from pregnant females irrespective of their past history of pregnancy wastage. The prevalence rate in our study is consistent with the studies in neighboring Asian countries. According to a study conducted in India in 2005 found prevalence rate of 45% among pregnant females in New Delhi while in another study conducted at Andra Pradesh in 2012 showed 49.52% prevalence among women with bad obstetric history while the control group had rate of 12.38%.[10,14] Similar study in China conducted by Zhou in 2011 shows 12.3% prevalence rate.[15] Makiko *et al* in2012 in their study showed an overall 10.3% prevalence rate in developed country like Japan.[9,15] The seroprevelance rate was found high among mother of older age group as shown in Table 2. Females between age 31—35 years, were n=68 among them 57 (83.8%) were IgM negative and 11 (16.2%) were IgM positive. Females aged 36 years and above included 54 females, among them 47(87%) were IgM negative where as 7(13%) females were found IgM positive. As compare to young mothers older age group females are more prone to transfer the disease to their newborns. These findings are consistent with other studies conducted in the region. A study by Borkakoty *et al* in Asam India in 2007[16] and by M D Sarkar *et al* 2012[10,16] in Andra Pradesh India, also reported high prevalence rate of 60.7% with advancing maternal age and had found an increase prevalence of toxoplasma infection in mothers of older age group[10,16].These findings can be attributed to the fact that with advancing maternal age the mothers are more exposed to environmental sources of infection. Low immunity state along with anemia due to repeated pregnancies is also contributing factors [17]. These facts may be explained on the basis of low socioeconomic conditions of the general population in the region and poor public health measures taken by the authorities towards provision of clean and safe environment.[18,19] Which increases exposure to the cysts found in raw or under cooked meat and in contaminated water, soil and food.

CONCLUSION

This study shows a high seroprevelance of toxoplasmosis in females of child bearing age. On the basis of the study conducted in this part of Khyber Pukhtonkhwa, further studies are recommended in future in other parts of the country as well. Effective measures are needed to reduce recurrent pregnancy loss and congenital anomalies in newborns. Primary preventive measures are advised to be taken by health surveillance authorities to focus on families specially females from rural areas. It is required to educate them regarding strict personal hygiene, contact and handling of cattles and pets like cats and dogs around them. This will reduce the chances of *Toxoplasma gondii* infection in them.

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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

Liver Injuries

Evaluation of Liver Injuries in DHQ Teaching Hospital Bannu

Ajmal Shah Bukhari[1], Shabir Hussain[2] and Mir Hamza[3]

ABSTRACT

Objective: To determine the major injury patterns, outcomes and management options of liver trauma in a tertiary care setup in District Headquarter Teaching Hospital Bannu, Pakistan.

Study Design: Retrospective / clinical study

Place and Duration of Study: This study was conducted at the Department of Surgery, District Headquarter Teaching Hospital Bannu from 1st January 2015 till 31st December 2016.

Materials and Methods: It was carried out consisted of 60 patients with liver trauma, 57 males and 3 female, with the mean age 31.46 years. Data regarding age, sex, mode and type of injuries were taken and analyzed. Inclusion criteria included age group equals or more than 13 years of age with diagnosis of liver trauma, patients penetrating and non-penetrating traumatic injury to liver, patients with blunt and sharp injury to liver. Exclusion criteria included all the patients' less than 13 years of age, patients with pre-existing liver disease i.e. cirrhosis, tumors, hepatitis etc, Patients who have previously undergone hepatic surgery.

Results: The incidence of liver trauma due to non-penetrating injuries was 46(76.6%) while due to penetrating injuries 14 (23.3%), In all cases of blunt injuries,40 patients(86.9%) were due to road traffic accidents, and 6 patients(13.0%) were due to assaults. 16 patients who were haemodynamically stable, were managed Medically with strict vital monitoring, input/output charting and repeated examinations.44 patients who were haemodynamically unstable despite aggressive resuscitation and were managed surgically. 9 patients (20%) were treated by simple suture, 15 patients (34%) were treated by suture and perihepaticpacking,and20 patients (45%) were treated by perihepatic packing. Patient who underwent perihepatic packing were re explored after 48 hours. abdomen was washed, drains were put in and abdomen was closed permanently.

Conclusion: Non-penetrating liver injuries are most common (77.0%) in our population especially due to road traffic accidents (67.0%). Surgical management has a provital role in saving life where the patient is haemodynamically unstable.

Key Words: Liver Injury

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INTRODUCTION

Liver trauma has the potential for extensive injuries which must be carefully visualized and investigated to ensure proper management. There have been significant developments as well as changes in the management of liver trauma since last 30 years.[1] Although it is certain that most penetrating injuries require intervention, there is no absolute decision regarding the management of blunt injuries. Earlier as two decades back most blunt injuries were treated surgically to ensure homeostasis and prevent the risk of biliary leaks and sepsis. In majority of cases, the injured liver cease to hemorrhage without any intervention and a conservative approach is relatively safe in haemodynamically stable patients. Severe hepatic injuries in unstable patients require intervention and several techniques have been designed to stop hemorrhage and repair extensive parenchymal damage.

Trauma is one of the leading causes of mortality worldwide for all age groups.[1] The liver is the largest solid abdominal organ and involves majority of metabolic functions of the body.[2] Despite the relative protection by overlying ribs, it is susceptible to compressive forces by means of blunt trauma that can injure the soft parenchyma.[3,4] Motor vehicle accidents are one of the most frequent causes of traumatic hepatic injury[4]. Major liver trauma is frequently associated with coagulopathy.[5] The developments in diagnosis, resuscitation and advent of new surgical technique have opened a new chapter in the management of liver injuries. In the past decades the use of CT SCAN has changed the diagnostic and therapeutic approach to such injuries completely,[6] decreasing the options for surgical intervention.

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MATERIALS AND METHODS

This is a retrospective clinical study that was carried out in the Department of Surgery DHQ Teaching Hospital Bannu Pakistan from 1st January 2015 to 31st December 2016. It included 60 cases of liver trauma, due to both penetrating and non-penetrating injuries, on the basis of clinical features and fulfilling inclusion criteria, admitted though accident and emergency department. This study included adult patients both male and female. Clinical data regarding age, sex, mode and type of injuries were taken and recorded. After initial resuscitation, clinical evaluation and thorough examination, those patients who were haemodynamically stable, were admitted to the ward and managed conservatively. Ultrasound or CT SCAN was done in all cases managed conservatively. Patients, who were haemodynamically unstable, managed surgically according to grading of liver injury. Resuscitation, treatment options and outcome were recorded on a Performa, which was specifically generated for the purpose.

Inclusion criteria included age group equals or more than 13 years of age with diagnosis of liver trauma, all the patients with penetrating and non-penetrating injury to liver, all the patients with blunt and sharp injury to liver. Exclusion criteria included all patients' less than13 years of age, patients with pre-existing liver disease i.e. cirrhosis, tumors, hepatitis etc and patients who have previously undergone hepatic surgery.

RESULTS

Table No.1: Mode of Injury

Number of cases	Penetrating Injury	Blunt Trama
Total 60	14 (23%)	46 (76%)

Table No.2: Type of Treatment

Number of cases	Conservative treatment	Surgical Treatment
60	16 (26.6%)	44 (73%)

Table No.3: Type of Surgical Management

Number of cases	**Primary suturing + perihepatic packing** with topical haemostatic agents	**Primary Suturing**	**Perihepatic Packing**
44	15(34%)	9 (20%)	20 (45%)

The incidence of liver trauma due to non-penetrating injuries was 46(76.6%) while due to penetrating injuries 14 (23.3%), In all cases of blunt injuries,40 patients(86.9%) were due to road traffic accidents, and 6 patients(13.0%) were due to assaults. 16 patients who were haemodynamically stable, were managed Medically with strict vital monitoring, input/output charting and repeated examinations.44 patients who were haemodynamically unstable despite aggressive resuscitation and were managed surgically. 9 patients (20%) were treated by simple suture, 15 patients (34%) were treated by suture and perihepaticpacking,and20 patients (45%) were treated by perihepatic packing. Patient who underwent perihepatic packing were re explored after 48 hours. abdomen was washed, drains were put in and abdomen was closed permanently.

Table No.4: Post Opp Complication

No. of cases	**Chest Complication (pneumonia, dry cough, productive cough,)**	**Jaundice**	**Wound infection**	**Burst abdomen**	**Biliary Fistula**
	30 (50%)	4 (6.6%)	9 (15%)	2 (3.3%)	3 (5%)

Table No.5: Types of injuries

Mode of injure	No of patient	Percentage
Solitary liver injury	20	45%
Associated extra hepatic injury	24	55%

DISCUSSION

One of the largest solid organ in the body is liver. Although it lies in a safe area of the body, but because of its large size, it makes it an inescapable victim of injury when the abdomen encounters like some traumatic assault. The exact incidence of liver injury is difficult to estimate due to lack of trauma registry in our country, but surely, it is high among our population. The same has been reported not only in our study, but other published local studies from different parts of the country.[7-9] In the current study we observed predominant involvement of males. More frequent involvement of males has also been reported in some other studies in the context of trauma in general as well as liver injuries.[7,8-10] The males are more prone to injury because they are more involved in driving, traveling and other outdoor and high-risk activities and because of that they are more frequent victims of assaults such as firearm injuries and stabs resulting from fights and brawls.

In our study, out of 60 patients, 57 patients were male and 03 were female with a male to female ratio of 19:1, this shows high male to female ratio compared to other studies because females are mostly non-Ambulant. A study conducted in Qatar by Faramawy et al, demonstrated male to female ratio of 11.6:1.[11] The reason for this high percentage of male preponderance is that males are more exposed and projected to trauma than females mainly due to male dominated society and outdoor activities. Similarly, in another study conducted in Saudi Arabia by Barrimahet et al, showed almost twice the number of male to female having road traffic

accidents (major cause of traumatic liver injury) in that year.

Our study found more frequent involvement of the younger population. The same has been found in other studies as well[12-14]. It is also reported that involvement of younger males Predominantly, reflects the socio-economic implications in such injuries. In our study the predominant mechanism of liver injury was blunt, particularly RTAs. Firearm injuries as the predominant mechanism of injury is also reported in Russia and Peshawar[14,15]. As Hemodynamic compromise ended with resuscitation and emergency exploratory laparatomy, becuase unacceptable delay in transportation, patients with life-threatening injuries of higher grade mostly die on the spot or on route to hospital[16]. In our study, in majority of patients we did perihepatic packing and suture hepatorrhaphy procedures. This is an agreement to other reported studies[13-19]. In fact, perihepatic packing has been great efficacy particularly in patients having liver trauma, and in conditions where blood is not available or in the cases where there is those massive transfusion requirement.

In our study, We strictly followed the policy of putting no more than six abdominal sponges around the liver, so as to avoid the complications of iatrogenic abdominal compartment syndrome. besides this, a variety of other procedures have been employed for liver injury by various researchers with reasonable good success rates. For instance, application of topical haemostatic agents, hepato-omentorrhaphy, tractotomy with finger fracture, extensive hepatorrhaphy, resectional debridement with selective vascular ligation, intra hepatic balloon, angio embolisation, venovenous bypass, and hepatic transplant etc.[20-23] Grade of liver injury, expertise of the surgeon, preference of individual surgeon and institutional practices are the different factors which effect the haemostatic measure. Hence, standardization as well as comparison of the surgical procedures reported by various researchers is difficult to made.

In our study 47 patients (78%) presented with blunt trauma and 13 patients (21.6%) presented as penetrating while in other study 87 patients with hepatic injuries from January 1995 to December 1999. Out of which, 76% of them had sustained blunt trauma while, 24% had penetrating trauma[24].

In the present study 60 patients were included , out of which 20(45%) patients were with hepatic trauma alone and 24 (55%) patients were of liver trauma with associated injuries while in another study the associated complication were 62 (54.86%) patients had associated injuries[5]. in another study from LRH Peshawar the isolated liver injury were 32.5% while associated liver injuries were 67.5%.

In our study 28% patients were found to be haemodynamically stable, and managed medically with strict vital monitoring, input/output charting and repeated examination to assess the conditions. 73% patients were haemodynamically unstable despite aggressive resuscitation and therefore were managed surgically. The choice of different surgical options for securing homeostasis in liver trauma depended on type and mode of injury, grade of liver injury and surgeon own discretion. Most of liver injuries required simple suture ligation. Simple suture ligation was done in 9 patients (20%), 20 patients were managed by perihepatic packing and 15 patients were managed by perihepatic packing and suturing. while in another study the primary suturing was in done 23% patient while perihepatic packing was done in 45% patient[25].

There were 40% patients in shock at the time of presentation with increase respiratory rate, pulse rate and decrease blood pressure. These patients were aggressively resuscitated with crystalloids, colloids and blood products, and shifted to emergency operation theatre for surgery.

The medical management has been time tested for haemodynamically stable patients of blunt injuries of liver. However, in penetrating injuries, especially in firearm injuries, but still exploratory laparotomy has the choice of management for many years[17]. This method has been objected in current studies that support selective medical treatment in haemodynamically stable cases without associated abdominal injuries. haemodynamically stable Penetrating injured patients having no signs of peritonitis, are recommended to undergo a contrast enhanced CT scan of the abdomen. If any signs shows on ultrasonography like hollow viscous perforation or evolving hemodynamic instability, exploratory laparotomy is option for treatment. The grade of the hepatic injury is not contraindicated for conservative management[17,18.

Given the evidence base, we should evolve regulations and measures to prevent RTAs, thereby reducing the frequency of liver trauma. As majority of our patients have hemodynamic compromise and present late, morbidity and mortality rate can be decreased in our set ups due to good Advance life care trauma support. Public awareness on the issue is imperative.

in our study the chest complication is 49% , while in the study of Imran Ahmad was 44.26%,[26] burst abdomen in our study was 3.3% while it was reported as 1.76% in the study, in our study billiry fistula was reported in 5% patients while in study of LRH Peshawar it has been reported 5% of bile leak. wound infection was reported in our study is 3.3% while reported 10% in LRH Peshawar study. It shows that the results of our study are almost similar to the other reported findings in a periphery teaching Hospital.

CONCLUSION

In conclusion, non-penetrating liver injuries are most common (78.1%) due to road traffic accident and assault. Hemorrhage is the leading cause of death in liver trauma. In haemodynamically stable patients, non-operative management is safe and rewarding. Surgical intervention was found to be life saving in thermodynamically unstable patients.

The common surgical procedure offered is perihepatic packing and mattress suturing.

Author's Contribution:

Concept & Design of Study:	Ajmal Shah Bukhari
Drafting:	Shabir Hussain and Mir Hamza
Data Analysis:	Shabir Hussain and Mir Hamza
Revisiting Critically:	Ajmal Shah Bukhari, Shabir Hussain and Mir Hamza
Final Approval of version:	Ajmal Shah Bukhari

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

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Original Article

Frequency of Gynecological Malignancies Treatment and Outcome at Bolan Medical Hospital Quetta

Gynecological Malignancies Treatment and Outcome

Iffat Usmani, Hanana Hameed and Fozia Jan

ABSTRACT

Objective: To determine the frequency, treatment and outcome of different genital tract malignancies in the province of Balochistan.

Study Design: Descriptive / cross-sectional study

Place and Duration of Study: This study was conducted at the Department of Obstetrics and Gynecology, Bolan Medical Complex, Quetta from Jan, 2009 to Dec. 2015.

Materials and Methods: A total of (5060) patients were admitted in BMCH during the period of 7 years and all the patients with genital tract malignancies confirmed on Histopathology report were included. Relevant data regarding history was obtained and physical examination was performed on all patients and investigations were done for all the patients. Surgical procedures were performed where needed and specimens were sent for histopathology. Clinical & surgical staging was done according to the FIGO classification.

Results: A total of 5,060 patients were admitted and after examination a total of 105 patients had gynecological malignancies. Carcinoma of the ovary was the most common (42%), followed by Cervical Cancer (25%) and Uterine Cancer (17%). Choriocarcinoma was seen in (7.6%), while vulvae & vaginal cancer (6.6%). The mean age was 50 years. The lowest parity was seen in ovarian cancers (21%), whereas cervical & uterine cancers were seen in multipara (31%). Ovarian cancers mostly presented with abdominal mass (34%), abdominal pain (24%), weight loss (25%) & anorexia (20%). While uterine & cervical cancers were usually presented with irregular vaginal bleeding (24%), postmenopausal bleeding (16%) & vaginal discharge (16%). 65% patient presented in stage iii & iv. Serous cystadenocarcinoma was the commonest ovarian malignancy (40%), while most common cervical cancer was squamous cell carcinoma (85%) & endometroid endometrial carcinoma (55%) was the most common uterine carcinoma.

Conclusion: Major gynecological malignancy encountered in our study was Ovarian Cancer in advanced stages. Patient education is essential for early diagnosis and treatment of ovarian cancer.

Key Words: Gynecological Malignancies, Ovarian Cancer, Cervical Cancer, Uterine Cancer.

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INTRODUCTION

Cancer is an abnormal proliferation of cells of the body which predominantly affects the aging person. It is a global challenging health problem and gynecological cancer contributes to a huge burden of the morbidity and mortality around the world. A study on global cancer statistics by the international agency for research on cancer indicates that gynecological cancer accounts for 5.1 million estimated new cases, 2.9 million cancer deaths and 13 million [5 years] prevalent cancer cases among the women in the world.[1]

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Cervical Cancer is the most common form of cancer and in women in developing countries and third most common worldwide. The current coverage for Cervical Cancer Screening in Pakistan is only 1.9% and that's the reason for the growing incidence of cervical cancer.[2] According to GLOBOCAN (WHO Project for Cancer related research in Pakistan) incidence of cervical cancer is 19.6%/100,000 in 2008 as compared to less than 9.1/100,000 in 2002. Data on screening in the past 5 years for Cervical Dysplasia coverage in developed countries is 85% whereas for under developed is 5%[3]. The incidence of cervical cancer in the developed countries has fallen due to widespread coverage of cervical screening.[1,4]

Ovarian Cancer causes the most deaths than any other cancer of female reproductive tract globally. An overall 5 years survival of only 30% in the United Kingdom[5]. It can occur at any age, even in childhood, but is most common after menopause. More than 60% of women present with cancer in stage III and stage IV disease, when it has already spread beyond the ovaries.[6]

Prognosis of ovarian cancer is stage dependent 92% at stage I & 5% at stage IV

Incidence of Endometrial Cancer is four folds higher in developed countries. The overall 5 year survival, because of early diagnosis and management for endometrial cancer, is 70%, We rarely come across Vulval and vaginal cancers in our region.

This study was carried out to determine the clinical presentation of gynecological malignancies and their occurrence in relation to age, parity, presenting symptoms, histopathological type and stage of the disease. In order to reduce morbidity and mortality from gynecological cancers, strategies are needed to be devised upon the findings for the better screening, diagnosis and timely management.

MATERIALS AND METHODS

This cross sectional descriptive study was conducted in Bolan Medical Complex Hospital Quetta from January 2009 to December 2015. All the patients who came for diagnosis and treatment of genital tract malignancies were enrolled. Patients having benign tumors were not included in the study. All relevant data regarding the age, parity, presenting symptoms, clinical examination, investigations , surgical procedures, staging (clinical and surgical) according to FIGO classification of tumors and different histopathalogical type of cancer were entered on a predesigned performa. Patient were referred to oncology department of BMCH and CINAR hospital Quetta for chemo and radio therapy according to stage of disease and histopathalogical reports.

RESULTS

There were 5060 gynecological admissions during the study period from the January, 2009 – December, 2015, out of which 105 cases of gynecological malignancies were reported and treated in our center.

The frequency of gynecological malignancies was 2% in our study. The ovarian cancer was most common, occurring in 45/105 (42%) women, followed by cervical cancer in 27/105 (25%). The incidence of endometrial cancer was 18/105 [17%], choriocarcinoma 8/105 cancer [7.6%] and 7 cases of vulval and vaginal cancer (6.6%).

The mean age was 50 years. The largest number of gynecological malignancies occurred in 5th – 6th decade of life. The youngest was an adolescent girl, who presented with abdominal mass and pain, diagnosed as choriocarcinoma of the ovary.

The highest parity was seen in women with uterine and cervical cancer (31%) and the lowest in those with ovarian cancer (21%). Vulvul and Choriocarcinoma were also seen in parous women.

Ovarian malignancies mostly presented with abdominal mass (34%), abdominal pain (24%), weight loss (25%) & anorexia (20%), while uterine and cervical malignancies commonly presented with post-menopousal bleeding (16%) & irregular vaginal bleeding (24%) & discharge (16%).

Vulvar cancer presented with vulval ulcer & swelling(3%). Choriocarcinoma mainly presented with irregular vaginal bleeding.

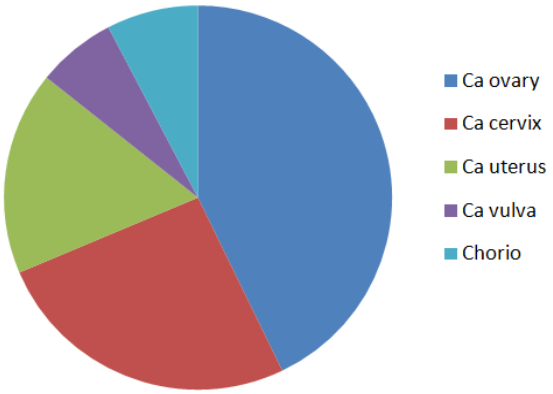

Figure No.1: Frequency of Gynecological Malignancies

Table No.1: Age of Distribution of Gynecological Malignancies

Age Range (years)	Uterus N=18	Ovary N=45	Cervix 27=n	Vulva 7=n	Chorio-carcinoma N=8	%tage N=105
Less than 40	-	16	-	1	4	20%
40-49	2	9	5	2	3	20%
50-59	6	10	11	1	1	27.6%
60 and above	10	10	11	3	-	32%

Among the patients with malignancies 68/105 (64%) of cases presented at stage III & IV.

Table No.2: The stage of presentation of different gynecological malignancies

Stage	Ovarian	Uterine	Cervical	Vulval	%age
Borderline	4	-	-	-	3.8%
Stage 1	-	4	1	-	4.7%%
Stage 2	5	9	3	3	19%
Stage 3	19	3	12	1	33%
Stage 4	17	2	11	3	31%

Table No.3: Distribution with respect to parity among the women with gynecological malignancies

Diagnosis	Para 0	Para 1	Para 2-4	Para >5	%age
Uterine cancer	1	-	2	15	17%
Cervical cancer	3	-	6	18	25%
Ovarian cancer	18	5	1o	12	42%
Vulval/ vaginal cancer	3	-	1	3	6.6%
Choriocar-cinoma		1	2	5	7.6%

Table No.4: Clinical presentation of different gynecological malignancies

Presenting Symptoms	Ovarian	uterine	Cervical	Vulval	Choriocarcinoma	Percentage
Irregular bleeding	2	5	12	1	8	24%
PMB	3	8	8	-	-	16%
PCB	-	-	6	-	-	5%
Vaginal discharge/Itching	-	3	8	2	-	16%
Abdominal Mass	32	3	-	-	4	34%
Abdominal Pain	18	2	6	-	2	24%
Ulcer / swelling	-	-	-	4	-	3%
Weight loss	20	-	7	-	-	25%
Dyspareunia	-	-	8	-	3	10%
Anorexia	15	-	6	-	3	20%

Table No.5: Histopathological type of gynecological malignancies

Histopathological types	Ovarian	Uterine	Cervical	Vulval	Percentage
Serous cyst adenocarcinoma	18				40%
Mucinous cyst adenocarcinoma	7				15.5%
Papillary cell adenocarcinoma	2				4%
Dysgerminoma	6				13.3%
sertoli leydig cell tumor	1				2%
Endometroid carcinoma	1	10			55%
Granulosa cell tumor	2				4.4%
Squamous cell carcinoma			23	5	852%
Struma ovarii	1				2%
Adenocarcinoma			2	2	8.8%
Adenosquamous carcinoma			2		7.4%
Immature Teratoma	3				6.6%
Germ cell tumor	3				6.6%
Carcinosarcoma		1			5.5%
Borderline tumor	4				8.8%
Choriocarcinoma	1	8			16%
Leiomyosarcoma		1			5.5%
Invasive mole		1			3.5%

DISCUSSION

The distribution of gynecological malignancies varies in different geographical areas of the world. The frequency of gynecological malignancies is 2% in our studies, which correlates with that reported by Ashraf T(1.8%) but is higher in comparison to 0.32% by Mohyuddin et al &0.92% by Akhtar et al[7,8,9]. This can be attributed as tertiary care hospital, receiving patients from all over Balochistan, border areas of Sindh and Afghanistan. However, Okeke TC reported a high incidence of (10%) in Nigeria with majority of patients having cervical cancer.[19]

In our study ovarian cancer was found to be most common gynecological malignancy (42%), followed by cervical cancer (25%) and endometrial cancer (17%), as observed in other studies carried out in Pakistan[11,12, 15], while the international studies showed that cervical cancer was the most common.[4,5,10,14] This difference is due to Islamic State of Pakistan where Islam restricts extra martial sexual relation. Epithelial Ovarian cancers were most common among post menopausal women whereas germ cell tumors were most commonly seen in children and adolescents. This correlates with some national and international studies[7,9,13,16]. Ovarian Cancers were common in nulliparious woman. Most of the patients had ovarian carcinoma presenting with abdominal mass, abdominal pain, weight loss & anorexia which is similar to the result reported by junejo et al[16]. Surface epithelial tumor formed the main histopathological group in our study, similar to other national and international studies[8,9,12,15]. Among the epithelial ovarian cancer Serous cyst adeno-carcinoma was the commonest cancer (40%) followed by mucinous cyst adenocarcinoma (13%) whereas Ahmed et al also found mucinous cyst adenocarcinoma to be the commonest variety.[13]

Our study revealed that cervical cancer was the second commonest site among gynecological malignancies similar to other national studies.[7,8,10,12] While studies from Bangladesh, India and Africa showed cervical cancer occupied the top most position[2,4,10,15]. The peak incidence of cervical cancer in this study was at 50-70 years of age, which coincide with result reported by other national studies[9,11]. Cervical cancer mostly presented with irregular vaginal bleeding &

postmenopausal bleeding with foul smelling vaginal discharge. The Squamous cell carcinoma (85%) was the commonest type of cervical cancer in our study, followed by adenocarcinoma (8.8%) which is similar to other studies.[2,10,11,17,15]

The third most common malignancy was endometrial cancer in our study, similar with other studies[1,7,15, 16,17]. Comparatively the incidence rate of this malignancy is lower in Asia and Africa than that of in industrialized countries[1,7,8,15]. Like other studies, the main histopathological type of endometrial cancer was endometroid carcinoma (55%).

Prevalence of choriocarcinoma in our study was 7.6%, which is very similar to other studies conducted in this region[7,20]. With the help of health education about early symptoms of disease and simple diagnostic test like ultrasound pelvis, beta HCG &chest X-ray, curative rate for choriocarcinoma can be increased up to 100%.

In our study 2-3rd of all genital tract malignancies presented at stage III and IV, except endometrial carcinoma which presented in early stage. Late presentation poses a surgical challenge and results in poor treatment outcome. In fact, 16% of cases in this study were inoperable at presentation.

In this study we found ovarian tumors to be the major type of gynecological malignancy. Greater awareness of the symptoms of ovarian cancer might lead to earlier diagnosis and treatment and thus possibly improve the prognosis**.**

CONCLUSION

Screening and regular gynecological examination and well defined follow up surveillance system can change the disease morbidity and mortality.

Patient education is essential for early diagnosis and treatment which would improve the survival rate.

Every patient with Cancer requires proper clinical evaluation, surgical staging and optimal therapeutic approach.

Author's Contribution:

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Revisiting Critically:	Iffat Usmani, Hanana Hameed and Fozia Jan
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Original Article

Role of Membrane Sweeping for Prevention of Post-Term Pregnancy

Hina Zubair, Saima Perveen, and Maryam Zubair

ABSTRACT

Objective: To assess the role of membrane sweeping for prevention of post term pregnancy at 38-40 wks of pregnancy**.**

Study Design:

Place and Duration of Study: This study was conducted at the Department of Obstetrics and Gynaecology, Divisional Headquarter Hospital, Mirpur Azad Kashmir for a period of six months from 1st May 2016 to 31st December 2016.

Materials and Methods: A randomized control trial carried on 120 pregnant females. The females were randomized into two groups each having 60 participants. Group A was Membrane Stripping group while no sweeping of membrane was done in group B. Stripping was done, between 38 to 40 weeks of gestation, every 48 hours till labor initiated, or upto a maximum of 41 weeks of pregnancy.

Results: Out of total 120 females sharing similar gestational age (38-40 weeks), membrane stripping was performed in 60 females of group A while in control group (group B) no intervention was made. All females were age matched (25-35 years) with a mean age of 29.38±2.96 in group A and a mean age of e 28.33±2.94 in group B. Fifty one (85%) females from group A and 40 (66.7%) females from group B underwent natural onset of effort before 41 wks, while 9 females from group A and 20 females from group B did not undergo natural onset of labor before 41 wks. The variance was statistically significant ($P< 0.05$).

Conclusion: Stripping of membranes is an effective and safe technique to minimize the rate of post term pregnancies. There is a need of trials on larger populations with a higher prevalence of post term pregnancies. This would help in evaluating efficacy of membrane stripping in decreasing rate of long gestations.

Key Words: Post term pregnancy, Sweeping of membranes, and labor induction.

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INTRODUCTION

A post term pregnancy, also called as prolonged gestation, is the one that has extended more than 42 weeks. The incidence of stillbirth or infant death (4-7 deaths per 1000 deliveries) is increased in post term. Almost 10% of total pregnancies result in post term. Post term child can develop respiratory problems due to ingestion of meconium while there are also increased risks for mother; such as complications during labor, a rise in injury to the perineum (like labia, vagina, and rectum), and an increased rate of cesarean with its related risks of infection, bleeding and trauma to adjacent organs[1-4]

Stripping of the membranes are a quite simple method usually achieved as a day case and doesn't need hospitalization[5] to reduce incidence of post term pregnancy[6].

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Stripping of the fetal membranes means digital separation of the membranes by finger from the lower uterine segment and the wall of the cervix[7]. There is a significant potential change for the prostaglandin production in late gestation period and gives evidence to fact that amniotomy and digital stripping of membrane often starts the labor[8]. Membrane sweeping causes the cervix to produces the endogenous prostaglandins, needs enough dilation of the cervix so that obstetrician finger can pass through it. While intervals natural onset of labor may be delayed by the sweeping of the membranes[7, 9-10]

Although it is effective in bringing on labor but causes some discomfort, bleeding and irregular uterine contractions. Risk of this technique has not been conclusively determined but is likely to be minimal in the absence of placenta praevia[5]. Results on the trials on the effectiveness have been inconsistent due to methodological differences between studies[11, 12.] A study mentioned that spontaneous onset of labor <41 weeks occurred in 95.89% in patients in which sweeping was done and 81.16% in control group**.**

MATERIALS AND METHODS

This randomized control trial conducted in Department of Obstetrics and Gynaecology, Divisional Headquarter

Hospital, Mirpur Azad Kashmir for a period of six months from 1st May 2016 to 31st December 2016. After acquiring ethical approval and informed consent 120 pregnant females were included in the study at 38-40 weeks of gestation through non probability purposive sampling technique. Pregnant females (25-35 years of age) with intact membranes at 38-40 weeks of gestation according to last menstrual period were included in the study. The Parity was considered up to para 4 with a bishop score of more than 5. Singleton pregnancy (confirmed by USG) with cephalic presentation (confirmed by USG) and estimated fetal weight 2.5-4 Kg (estimated by USG) were also considered for inclusion criteria. Those females who were having pregnancy related complication or medical disorders i.e. PIH (Diastolic B.P at least 90mm Hg or systolic B.P at least 140 mm Hg recorded on at least two occasions 6 hours or more apart), pre-eclampsia (development of HTN, protein uria or both after 20 week gestation in a female with previously normal B.P where protein uria was measured by dip stick method), essential HTN (persistent HTN before 20 weeks of gestation in absence of hydatidiform mole or persistent HTN beyond 6 weeks post partum), GDM (carbohydrate intolerance of variable severity first diagnosed during pregnancy – diagnosed by GTT) were excluded from the study. Pregnant females with contraindication to vaginal delivery i.e. placenta previa (confirmed by USG), breech presentation (confirmed by USG), CPD (estimated on pelvic examination), transverse lie (confirmed by USG), closed cervical os on vaginal examination and previous caesarean delivery were also excluded from the study.

Patients were randomized in two groups by lottery method. Membrane sweeping was only performed in group 'A'. Sweeping was carried out by maximum separating the lower membranes from its cervical attachments with the examination finger of the researcher. Membrane sweeping was performed after every 48 hours for a week till labor starts. The patients were instructed for labor symptoms like PV leaking, bleeding, labor pains, discomfort, PV spotting. Patients were labeled to have spontaneous onset of labor when there is repeatedly contractions of enough frequency, strength and interval leading to advanced cervical effacement and opening so admitted. Those who fail to go in labor by 41 week were managed according to hospital protocol. The study data was analyzed using SPSS version 15.0. Descriptive statistics of socio-demographic variables were computed. Numerical variables like age of the patients, gestational age was presented as mean and standard deviation. Outcome variable i.e onset of labor in two groups and parity was compared by using Chi-square test. P value equal or less than 0.05 was considered as significant.

RESULTS

The study included total 120 females both nulliparous and multiparous at 38-40 weeks of gestation. Maternal age of cases (mean age 29.38±2.96) designated as group 'A' while, that of controls (mean age 28.33±2.94) designated as group 'B'. Both were in similar age group [25-35 years] (Table 1). In membrane sweeping group (A), 26 females were nulliparous while 34 were multiparous. Similarly in control group (B), 31 were nulliparous and 29 were multiparous. Majority of females in group A and B were multiparous. Most of the pregnant females were having 39th week of their gestation. Fifty one (85%) females from group A and 40 (66.7%) females from group B underwent natural onset of labor before 41 weeks, while 9 females from group A and 20 females from group B did not undergo natural onset of labor before 41 weeks(Table 2). The difference between the two groups was statistically significant (P< 0.05). Those females, who did not go into labor by 41 weeks, were induced by formal methods.

Table No.1:Distribution of Age in group A and B

Age	Group A (n=60)		Group B (n=60)	
	No.	%	No.	%
25 – 27	25	41.7	25	41.7
28 – 30	24	40.0	24	40.0)
31 – 33	5	8.3	6	10.0)
34 – 35	6	10.0	5	8.3
Mean±SD	29.38±2.96		28.33±2.94	

Table No. 2: Distribution of gestation age in both groups

Group	Group A (n=60)		Group B (n 60)		Total	
	No.	%	No.	%	No.	%
Labor Onset before 41 weeks						
Yes	51	85.0	40	66.7	91	75.8
No	9	15.0	20	33.3	29	24.5

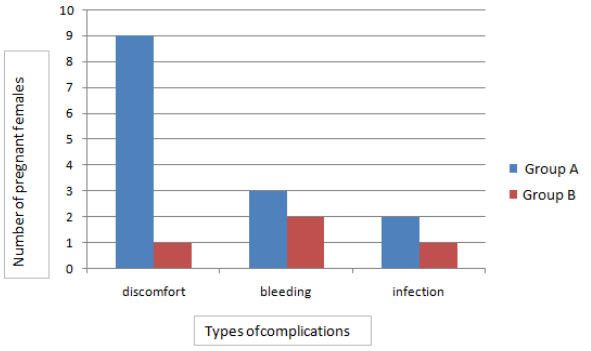

Figure 1: Comparison of various complications in Sweeping Group A and B

Complications like discomfort, bleeding and infection were also recorded in two groups. Nine (15%),3(5%) and 2(3.3%) pregnant females in group A complaint discomfort, bleeding and caught infection respectively. Whereas in Group B 1(1.6%), 2(3.3)%) and 1(1.6%) showed discomfort and had bleeding and infection respectively (Figure1).

DISCUSSION

Post term pregnancy one of the common obstetrics difficulty that is linked with raised fetal and new born mortality and morbidity risks due to uteroplacental failure in onset labor with increasing pregnancy duration. From the list of various interventions the simplest one is mechanical onset of labor. Induction of labor has been a very common method of interventions since long [13]. Various reasons influence clinicians' decision for inducing labor before 41 week of gestational age [14]. The physiological basis of membrane sweeping which causes induction of labor is the release of prostaglandins, phospholipase A3 and oxytocin. Release of prostaglandins last for up to six hours[1,15] membrane sweeping also increases the frequency of uterine contractions.

The current study was conducted to see the role of membrane stripping at 38-40 weeks of gestation and its role in prevention of post term pregnancies. In this study females of both groups were age matched (25-35 years of age) and included nulliparous and multiparous females. Similar has been reported elsewhere 16. Most of the females were in 39th week of their pregnancy when they were mechanically induced for onset of labor. This seems to be the most appropriate gestational age and have been reported in different studies.[17-18]

This study showed that 85% of females who underwent spontaneous onset of labor by stripping of membrane delivered before 41 weeks of gestation, comparing it with non intervening group where only 66.7% females had sponateous onset of labor. Similar has also been reported in earlier studies6. Research reveals that membrane sweeping was linked with earlier delivery and reduce incidence of post term gestation.[5,19]

In present study frequency of bleeding and chance of infection was not significantly related with membrane sweeping as it was also noticed in few control cases as well. However there ratio was still higher in membrane sweeping group (Figure 1) than control group. Research reveals that women undergoing membrane sweeping does complain more about discomfort and bleeding during a vaginal examination than one who are not undergoing mechanical induction of labor.[20]

Overall it can be elaborated the fact that membrane sweeping is a safe method for onset of delivery, decreasing rate of post term complications for both mother and child.

CONCLUSION

Membrane sweeping is an efficient, simpler and easier method for labor initiation with minimal complications. It also reduces the need of formal methods for induction.

Author's Contribution:

Concept & Design of Study:	Hina Zubair
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Data Analysis:	Saima Perveen and Maryam Zubair
Revisiting Critically:	Hina Zubair, Saima Perveen and Maryam Zubair
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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

Hernioplasty

Long Term Outcome of Ventral Hernia Repair by Onlay Mesh Hernioplasty

Abid Hussain[1], Asif Imran[2] and Aqeel Ahmad[1]

ABSTRACT

Objective: The study was conducted to assess short and especially long term (2-years) outcome of ventral hernia repair by onlay mesh hernioplasty.

Study Design: Observational / descriptive study

Place and Duration of Study: This study was conducted at the department of surgery, Pak Red Crescent Teaching Hospital, affiliated with Pak Red Crescent Medical & Dental College, Lahore from 12-Mar-2013 to 30-Nov-2015.

Materials and Methods: A total of 117 adult patients with ventral hernia, irrespective of sex was included in this by convenient sampling. On lay mesh hernioplasty was done. Patients were scheduled for follow-up visits. Minimum follow-up was two years, thus providing sufficient time to assess for recurrence, chronic pain and other complications. The data of all patients were collected for age, sex, operation time, complication, postoperative hospital stay and analyzed with SPSS ver. 21.

Results: Out of 117 patients 94 (80.34%) were female and 23 (19.65%) were male. Mean age of the patients was 38.56 ± 9.73 years. The mean operating time was 40.12 ± 6.40 minutes. The mean hospital stay was 2 days. Commonest postoperative complication was seroma noted in 2 patients (1.71%) had followed by superficial surgical site infection 1 patient (0.85%). In short term follow up 6 patients (5.13%) complained of occasional ache or pain following exertion. Three patients were lost in long term follow-up. Rest of the 114 patients (97.43%) on long term follow-up did not show any persistent pain. However, recurrence was noted in two female patients (1.17%).

Conclusion: The onlay tension free mesh repair is relatively easy to learn, simple to perform with promising long-term results.

Key Words: Ventral Hernia, Onlay Mesh hernioplasty, Para-umblical, Epigastric.

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INTRODUCTION

Ventral hernia is defined as a protrusion through a defect in anterior abdominal wall with the exception of the hernia through inguinofemoral region.[1] It include epigastric, umbilical, and incisional hernias. These hernias are liable to various complications; obstruction, incarceration and strangulation, that's way elective surgical repair is the treatment of choice.[2] Suture repair techniques have dominated over a century. One of the most popular techniques was the Mayo duplication.[3] In larger hernias, suture repair requires the application of tension to the fascia in order to close the orifice. Therefore, many suture repairs failed mechanically, and recurrence rates were found to be as high a 54%. The advantages of mesh implantation have first been confirmed in an influential trial by Luijendijk et al.[3,4]

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According literature review [5] there is a good evidence that open mesh repair is superior to suture repair in terms of recurrences and an insufficient evidence as to which type of mesh or which mesh position (onlay or sublay) should be used. [3] We decided to analyze the feasibility and long-term results of one of the position of the mesh i.e., onlay mesh repair in our setup. The objective of this study was to assess short and especially long-term outcome (2-years follow-up) of ventral hernia repair by onlay mesh hernioplasty. In our country, such a long-term follow-up of this technique with this sample size was not evaluated previously to date.

MATERIALS AND METHODS

This Descriptive observational study was conducted from 12-March-2013 to 30-November-2015 in the department of surgery, Pak Red Crescent Teaching Hospital, affiliated with Pak Red Crescent Medical & Dental College, Lahore. The study was approved by the ethical review committee of our institution. A total of 117 adult patients with ventral hernia, irrespective of sex was included in this by convenient sampling. Patients with obstructed, strangulated and having signs of infection were excluded from the study. Written informed consent was taken. Complete blood count,

viral screening and clotting profile were performed. A routine preoperative abdominal ultrasound scan was performed in all the cases. All operations were performed under general anesthesia. A dose of broad-spectrum antibiotic was given prior to anesthesia. A skin incision over the bulge or the defect was made in most of the cases, except in huge paraumbilical hernia where an elliptical incision including hernia and umbilicus was made. The subcutaneous tissues were dissected off the rectus sheath and linea Alba to expose the hernia sac. The sac was incised at its neck and adhesions from the omentum or bowel were divided and the contents are returned to the peritoneal cavity. The defect in the linea alba was closed primarily with continuous non-absorbable polypropylene suture 1/0. A space was created 5 cm all around the suture line between rectus sheath and subcutaneous tissues. Hemostasis was secured. An adequate size of standard polypropylene non-absorbable mesh (15 x 15 cm or 30 x 30 cm) was placed on the rectus sheath and fixed with 3/0 polypropylene interrupted sutures. At this point injection gentamycin 160 mg is spilled directly over the mesh evenly. A suction drain is placed over the mesh. Subcutaneous tissue was closed with 3/0 polyglactin. Skin was closed with interrupted 3/0 polypropylene and antiseptic dressing was applied. Post-operative patients were encouraged to be ambulant and pass urine. All the patients were reassessed in the all the shifts for any post-operative complication. Oral fluid was allowed if there was no nausea and on adequate bowel sounds. On second post-operative day soft diet was allowed and patient was discharged. Drains were removed when drainage was less than 20 ml in 24 hours. All obese patients were counseled to control weight. Follow-up visits were scheduled after one week, six weeks, three months, six months, one year and two years in out-patient department to assess early and late complications. The data of all patients were collected for age, sex, operation time, complication, postoperative hospital stay. Data were analyzed using SPSS version 21. Descriptive statistics were applied. Frequency and percentage were calculated for categorical variables like gender whereas mean and standard deviation were calculated for numerical variables like age and operation time.

RESULTS

Table No. 1: Ventral Hernia

	Patients	%
Epigastric	23	19.66
Para-umblical	87	74.36
Incisional	7	5.98
Total	117	100.00

Out of 117 patients 94 (80.34%) were female and 23 (19.65%) were male. Mean age of the patients was 38.56 ± 9.73 years. Youngest patient was 23 years old and eldest was 77 years old. The mean operating time was 40.12 ± 6.40 minutes. The mean hospital stay was 2 days. Site of ventral hernia repaired is given in Table 1.

Commonest postoperative complication (Table 2) was seroma noted in 2 patients (1.71%) had followed by superficial surgical site infection 1 patient (0.85%). Seroma was aspirated under ultrasound guidance, while superficial surgical site Infection was treated with local wound care, cultures were taken and treated with antibiotics.

Table No. 2: Early postoperative complications

	Patients	%
Seroma	2	1.71
Hemorrhage	0	0.00
Superficial Surgical Site Infection	1	0.85
Deep Surgical Site Infection	0	0.00
Wound Dehiscence	0	0.00
Total	3	2.56

In short term follow up (Table 3) 6 patients (5.13%) complained of occasional ache or pain following exertion at the site of operation. None of the patient had recurrence.

Table No. 3: Short Term follow-up (complications)

	Patients	%
Occasional pain / Pain after exertion	6	5.13
Recurrence	0	0.00
Total	0	5.13

Three patients were lost in long term follow-up (Minimum 2-years). Rest of the 114 patients (97.43%) on long term follow-up (Table. 4) did not show any persistent pain. However, recurrence was noted in two female patients (1.17%) who failed to control their weight.

Table No. 4: Long term complications

	Patients	%
Persistent Pain	0	0.00
Recurrence	2	1.75
Total	2	1.75

DISCUSSION

In the last two decade the rate of tension-free surgical technique has been dramatically increased [3] for all types of hernia even in the developing countries. However, it is somewhat surprising that the question of optimal choice of repair is not yet settled.[6]

Several methods of securing the mesh to the fascia have been described for ventral hernias, with the most common being mesh onlay (prefascial placement) and sublay (retrorectus placement). The onlay technique is popular among surgeons because it avoids direct contact with the bowel and technically is not difficult

for surgeons. [7, 8] The present study determines the efficacy of onlay mesh repair in various types of ventral hernias with both short and long-term follow-up. Incidence of paraumbilical hernias is found to be the highest in our series followed by epigastric hernia which is consistent with local data.[9]

Onlay mesh repair requires wide tissue undermining, which may predispose wound-related complications like seroma and superficial surgical site infection. [3, 7] Seroma formation is a common complication after repair of abdominal wall hernia, which can lead to significant morbidity.[10,11] Seroma occurs due to an excessive inflammatory response to suture or mesh which cannot be prevented. In most of the cases it resolves spontaneously but may require aspiration. In present study seroma was seen in 1.71% of the patients which is quite low as compare to local [2, 9] and international study. [12, 13] This discrepancy certainly be due to two main factors. First is, during creation of space for mesh above the rectus sheath, we used minimum current of monopolar cautery to avoid collateral damage. Secondly, we strictly followed the suction drain removal criteria of drainage less than 20 ml in 24 hours. Perhaps, this helped us in preventing of seroma collection in the wound.

One apparent drawback of the onlay technique is the higher risk of infection.[14,15] In literature reported incidence of wound infection of onlay mesh is 6-12%.[15,17] Infection rate in our study is considerably low (0.85%) because in all the cases we used injection gentamycin spilled technique directly over the mesh. Moreover, we kept the drain till the drainage is less than 20 ml in 24 hours, thus preventing of seroma and blood accumulation which might get infect.

The causes of persistent postoperative pain are likely multifactorial and may include iatrogenic nerve injury or entrapment, inflammatory reaction to mesh, or issues related to mesh tension due to additional suture or tack fixation. [18] Venclauskas reported significant lower pain incidence after tension-free reconstruction. [19]

Hernia recurrence is a distressing event to patient and embarrassing to surgeons. Although tension free mesh repair is an ideal technique which has decreased the incidence of recurrence [20-23] as compare to suture repair. In a Cochrane review from 2008, there was not sufficient evidence about which position of the mesh is superior.[24] When comparing the two most common mesh positions; Onlay and Sublay mesh placement, the recurrence rates in the literature do not differ significantly. [25]

Recurrence of hernia is multifactorial, large seroma, and surgical site infection are classical complications that may result in recurrence.[26] Multiparous women, obesity and excessive weight gain following repair are obviously potential risk factors.[27] Moreover, smoking may create a risk for recurrence.[28] In order to prevent recurrence Steven. B recommend good overlap of the mesh of about 4 cm - 5 cm from each side of the primary repair suture line. [18] In our study two case of recurrence were reported, probably because of strictly followed criteria of equal or more than 5 cm overlap. Our results are comparable with recent literature. [18]

Limitation of the Study:

The main limitation of this study was a small sample size, which may have been insufficient to detect rare events.

Future Interest:

In order to further elucidate the benefit of onlay mesh, we recommend that future studies consider a larger sample size with longer follow-up along with comparison with sub-lay technique.

CONCLUSION

The onlay tension free mesh repair is relatively easy to learn, simple to perform with promising long-term results. It has negligible infection and recurrence rate. Most commonly recurrence occurs in obese and multiparous women.

Author's Contribution:

Concept & Design of Study:	Abid Hussain
Drafting:	Asif Imran and Aqeel Ahmad
Data Analysis:	Asif Imran and Aqeel Ahmad
Revisiting Critically:	Abid Hussain, Asif Imran and Aqeel Ahmad
Final Approval of version:	Aqeel Ahmad

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

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Original Article

Dental injuries in Children

Dental injuries and Trauma in Mixed Dentition of Pakistani School Children: A Cross Sectional Study

Naheed Najmi[1], Muhammad Nadeem[2] and Tahera Ayub[3]

ABSTRACT

Objective: This study analyzed the largest cause for the mortality of teeth in Pakistan's school going children.
Study Design: Descriptive / prospective / cross-sectional study.
Place and Duration of Study: This study was conducted at the private school of Karachi from March 2017 to April 2017.
Materials and Methods: Children aged between 7 to 12 years were selected on the basis of non randomized sampling. Questions were asked about accidental injuries like fall, collision, bicycle injuries, sports injuries, fights, injured teeth, fracture and non accidental injury. A descriptive analysis was done; a mean ± standard deviation (SD) was taken out for continuous variables (age) and categorical variables (distribution of traumatic injuries according to cause, distribution of age related injuries in dentition, distribution of injuries related to number of injured teeth and distribution of traumatic injuries according to type)
Results: Results have shown that the children aged between 8 to 9 years old are most effective (58%).Bicycle falling (64%) appeared as the most common reason of dental trauma. End of the study we found that most of the participants have one tooth involve (64%) while those participants have class II trauma; extensive crown fracture involving most of dentine but not the dental pulp ($x2 = 42.43$, $df= 16$, $p<0.001$).
Conclusion: On conclusion of this study, bicycle injury appeared as the most common cause of dental trauma in school going children which involves dentine but not the pulp.
Key Words: dental injury, Mix dentition, school children

Citation of articles: Najmi N, Nadeem M, Ayub T. Dental injuries and Trauma in Mixed Dentition of Pakistani School Children: A Cross sectional Study. Med Forum 2017;28(12):52-55.

INTRODUCTION

Traumatic dental injury (TDI) is a developing and challenging public health problem to oral health professionals, and it has been seriously neglected.[1,2] The most exposed parts of the body (face and teeth), are more prone to fracture. Traumatized permanent anterior teeth are a common finding.[3] the increasing frequency of traumatic injuries have made them the third largest cause of teeth mortality. Since the modes of teaching became more civilized the children are more prone to getting injuried, due to involvement of trauma.[4-7]
School going children participate actively in outdoor play and particularly in organized bodily contact play. Careless activities increase the possibility of injuries.

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Though these activities are markers of growth and development of the child, loss of balance and impaired movements are the result of traumatic injuries. In recent years reports appearing in dental literature have suggested an increase in the occurrence of traumatic injuries to the incisors teeth[3.] Dental caries and periodontal disease have been replaced by dental trauma as the most common threat to dental health in youngsters.[8,9] Dental trauma is significant in children and adolescence because the formation of many young, permanent teeth takes place in those ages. These young patients who are exposed to trauma are not only physically but also psychologically affected.[10] Traumatic injuries like falls, auto accidents, and sporting activities are the most common etiological factors of dental trauma.[11] According to the standard Ellis classification, the types of tooth fracture are as follows:[12]
Class I: Simple fracture of the crown, involving little or no dentin.
Class II: Extensive fracture of the crown, involving considerable dentin but not the dental pulp.
Class III: Extensive fracture of the crown, involving considerable dentin and exposing the dental pulp.
Class IV: The traumatized tooth that becomes non vital, with or without loss of crown structure.
Class V: Total tooth loss.

Class VI: Fracture of the root, with or without loss of crown structure.
Class VII: Displacement (Intrusion) of the tooth without fracture of crown or root.
Class VIII: Displacement (Extrusion) of the tooth without fracture of crown or root.
Class IX: Fracture of the crown en masse and its replacement.

MATERIALS AND METHODS

A cross sectional study was done at a private school of Karachi, Pakistan from March 2017 till April 2017. This study was performed under supervision of senior teaching faculty members of school located in Gulistan e johar (Metropolitan Academy, Karachi). School children were selected on the basis of non-probability convenient sampling. Questions were asked about accidental injuries like fall, collision, bicycle injuries, sports injuries, fights, injured teeth, fracture and non accidental injury

Inclusion/Exclusion Criteria: School children aged between 7 to 12 years were included. Uncooperative children and those with any sort of mental abnormality were excluded.

Sample Size: It was done using the W.H.O. software for "Sample Size Calculation" edited by L.lemeshow and S. K. Lwanga. This sample size calculation is done by the following reference study : Celenk S, Sezgin B, Ayna B, Atakul F. "Causes of dental fractures in the early permanent dentitionf: a retrospective study." J. Endod. 2002 Mar;28(3):208-10. The authenticity of our result is confirmed by sample size calculation using W.H.O. software for sample size calculation, where α = 0.05, 1-beta = 90, Po = 0.50, Pa = 0.40, n (sample size) = 300.

Data Management and Analysis: The data was entered and analyzed on Statistical Package for Social Sciences (SPSS) Version 19. A descriptive analysis was done; a mean ± standard deviation (SD) was taken out for continuous variables (age) and categorical variables (distribution of traumatic injuries according to cause, distribution of age related injuries in dentition, distribution of injuries related to number of injured teeth and distribution of traumatic injuries according to type)

Ethical Considerations: The study protocol was approved by the Department of Research and Ethics of the Liaquat College of Medicine & Dentistry Karachi and written informed consent was provided by each participant.

RESULTS

We examined total 418 students in this study and 300 (71.77%) students fulfilled the requirements of the study. So the study group included 300 School going Students. We examined each student and filled the Traumatic Dental Injury Questionnaire of all students. According to the study mostly students had a history of fall from bicycle and they were aged between 8 to 9 years old.

Distribution of traumatic injury according to etiological factors: We examine the different causes of dental trauma. According to Traumatic Dental Injury Questionnaire most participants have history of fall from bicycle (64.00%), while the occurrence of non accidental trauma is less in number (0.7. Sports injury (26.00 %) is the second most common cause of dental trauma. (SD= 0.78, SE= 0.04, mean= 1.49, Median= 1.00)(Table 1)

Distribution of traumatic injuries according to ages in mixed dentition: According to Traumatic Dental Injury Questionnaire, 8 to 9 years old children are at a high risk of dental trauma (58.00 %) while 10 to 11 years old children are at second highest risk of dental trauma (30.00%). (SD= 0.67, SE= 0.03, mean= 2.32, Median= 2.00) (Table 2)

Distribution of traumatic injuries according to number of injured teeth: According to my study most of the children have one tooth dental trauma (64.00%) on the other hand 24% children have two teeth involve. We found that 12% participants have more then two teeth involve. (SD= 0.70, SE= 0.04, mean= 1.48, Median= 1.00) (Table 3)

Table No.1: Distribution of traumatic injury according to etiological factors

Falls					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	bicycle	192	64.0	64.0	64.0
	sports	78	26.0	26.0	90.0
	fights	24	8.0	8.0	98.0
	non accidental	2	.7	.7	98.7
	unknown	4	1.3	1.3	100.0
	Total	300	100.0	100.0	
(SD= 0.78, SE= 0.04, mean= 1.49, Median= 1.00)					

Table No.2: Distribution of traumatic injuries according to ages in mixed dentition

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
	6-7	22	7.3	7.3	7.3
	8-9	174	58.0	58.0	65.3
	10-11	90	30.0	30.0	95.3
	12	14	4.7	4.7	100.0
Valid	Total	300	100.0	100.0	

(SD= 0.67, SE= 0.03, mean= 2.32, Median= 2.00)

Distribution of traumatic injuries according to type: According to Traumatic Dental Injury Questionnaire, the highest numbers of children have Class II trauma which is extensive fracture of the crown, involving most of dentin but not the dental pulp. Similarly second highest class is class 8 which is Fracture of the crown

en masse and its replacement (x2 = 42.42, df= 16, p<0.001) (Table 4).

Table No.3: Distribution of traumatic injuries according to number of injured teeth

number					
		Freq-uency	Percent	Valid Percent	Cumulative Percent
	1	192	64.0	64.0	64.0
	2	72	24.0	24.0	88.0
	more than 2	36	12.0	12.0	100.0
Valid	Total	300	100.0	100.0	

(SD= 0.70, SE= 0.04, mean= 1.48, Median= 1.00)

Table No.4: Distribution of traumatic injuries according to type - class * number Cross-tabulation

Count					
		number			
		1	2	more than 2	Total
class	class 1	7	3	0	10
	class 2	30	12	1	43
	class 3	17	5	3	25
	class 4	26	9	4	39
	Class 5	13	13	11	37
	class 6	20	14	5	39
	class 7	18	9	6	33
	class 8	34	2	6	42
	class 9	27	5	0	32
Total		192	72	36	300

DISCUSSION

This study was conducted by Department of Community Dentistry and Periodontology at Liaquat College of Medicine & Dentistry and Darul Sehat Hospital Karachi. Being a teaching hospital the treatment provided is quite affordable hence it covers a broad spectrum of population from each social class. The results of this study reveale that traumatic dental injuries can be considered a public health problem.

8–9 years is the most commonly affected age group which is in agreement with other studies[13-15]. life style and general tendency of taking more risks makes the adolescence more vulnerable to dental trauma.

The most frequent cause of trauma in all age groups was fall and this was generally supported by other studies as well[2-16-17]. Collision in 192 children (64%) which occurred when children were bicycling, playing at home, at school or outside the street during leisure activities appeared to be the second cause. Accidents occurred due to sports injuries accounted for 26% of traumatic injuries in 79children. In 24 patients (8%) tooth trauma was due to violence . It was found that these cases were related to violence in street and home for example pushing against another child, assaults and physical abuse. Injuries to the teeth resulting from non accidental or unknown activities appeared to be underestimated in our study in 6children as compared to other studies[17-18]. This finding is explained by the fact that non accidental activities are not commonly available for the poor population in Pakistan.

In this survey most of the trauma cases involved only one tooth (64%), and second most common cases involved two teeth (24%). the last common cases involved more than two teeth (12%). This finding supports the earlier findings of researchers[19,20].

The most frequent injuries were (Class II) crown fracture involving enamel and dentin without involving pulp 43 children out of 300 children which are in agreement with few of the previous studies. The second most common injury is complicated Fracture of the crown en masse and its replacement in 42children[21,22].

In order to avoid future injuries identifying the etiologic factors and establishing their preventive measures is important. Parks and play grounds are examples of such locations particularly conducive to dental injuries in Pakistan. Health promotion policies should create an appropriate and safe environment as well as increasing awareness of health hazards at home, school and street and to minimize unsafe activities. An educational programme that underlines the importance of prevention of dental trauma and the benefits of immediate treatment and conservation of avulsed and fractured teeth would minimize the overall rate of traumatic dental injuries and their sequels. Therefore dental emergencies should be dealt with high expertise and providing rapid standard care for such injuries should be the target of dental emergency care providers. Detailed standard documentation of entire dental trauma episodes as well as prospective studies on a national level should be carried out to obtain baseline information of this common but neglected emergency. This is expected to help policy makers in developing preventive and curative strategy.

CONCLUSION

On conclusion of this study, bicycle injury appeared as the most common cause of dental trauma in school going children which involves dentine but not the pulp.

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Author's Contribution:

Concept & Design of Study:	Naheed Najmi and Muhammad Nadeem
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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

The Clinical Characteristic and Treatment outcome of Tetanus Patients in Tertiary Care Hospital

Treatment outcome of Tetanus

Wasil Khan and Abdul Jabbar

ABSTRACT

Objective: To describe the clinical characteristic and treatment outcome of tetanus patients admitted to Medical Unit of STH Swat.

Study Design: Cross sectional study.

Place and Duration of Study: This study was conducted at the Medicine Department of Saidu Group of Teaching Hospital Swat from 16-02-2013 to 14-07-17.

Materials and Methods: This case series study was carried out on patients with established tetanus admitted to Medical Unit of SGTH Swat, from 16/02/13 to 14/07/17 and later on discharged, expired or referred to other teaching hospitals of the province. A total of 42 consecutive patients were included in the study. The relevant information including complications like cellulitis, autonomic instability, nosocomial pneumonia, acute renal failure, hyperthermia, respiratory failure and cause of death were recorded on a Performa which was maintained for every patient from admission to outcome. Analysis was done in SPSS version 20.

Results: The mean age of the patients presenting with tetanus was 30.5714 with minimum age of 10 years and maximum of 75 years. The male to female gender ratio was 7:1 with 88.1 % male and 11.9% female. None of these patients were previously immunized against tetanus. 28.60% patients were having no apparent route of possible entry while 26.20% had entry wound on lower limb, 19.03% on upper limb, 19.3% had post-surgical/obstrictcal wound and 7.14% having wound on face or neck. Most of the patients (40.47%) stayed in the unit from 1 to 7 days while 33% for less than 24 hours and 26.20% for more than 7 days. The complications developed were cellulitis in 26.20%, autonomic instability 26.20%, nosocomial pneumonia 16.70%, acute renal failure 11.90% hyperthermia 9.50% and respiratory failure 9.50%. Ten (23.8%) patients needed tracheostomy. 3 (7.14%) patients needed mechanical ventilator support who were referred to other hospitals of the province. Out of 42 patients with established tetanus, 13 (31%) expired. All of these expired patients were having severe disease on the basis of Philips Scoring System. The immediate cause of death was respiratory arrest 30.79%, cardiac arrest 23.07%, renal failure 23.07% and septic shock 23.07%.

Conclusion: The preventable disease like tetanus has a high mortality even in tertiary care hospital due to lack of immunization and proper management of wounds.

Key Words: Tetanus Clinical characteristic, Treatment outcome.

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INTRODUCTION

Tetanus is an acute often-fatal neurological disorder resulting from the contamination of wounds by clostridium Tetani, a spore forming Gram positive, motile, rod shape, obligate anaerobic organism[1].

Under anaerobic conditions tetanus bacillus produces tetanospasmin (atoxin), which binds to peripheral motor neuron terminals. It is then transported retrograde within the nerves to cell of motor neurons of that segment of cord.

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In spinal cord and brain stem it block release of the inhibitory neurotransmitter Glycine and GABA. The alpha motor neurons are therefore under no inhibitory control and undergo sustained excitatory discharge causing the characteristics motors spasms of tetanus. The loss of inhibition also affects preganglionic sympathetic neurons and produces autonomic dysfunction[2].

Wound on the lower limbs, postpartum or post abortion infection, compound fractures and minor trauma provide the common portals of entry. In 30% of the patients no portal of entry is apparent. The incubation period can be as short as 24 hours or as long as many months[2].

Four clinical varieties are recognized in general. Seventy five percent present with locked jaw. It is the most common type of tetanus (81%) Rigidity, risus sardonicus, opisthotonus and spasms, autonomic dysfunction, tachycardia, tachycardia, labile blood

pressure, sweating, and cardiac arrhythmia are other clinical features of this type of tetanus. Cephalic, localized and neonatal tetanus are the other varieties[3].

Routinely, the diagnosis of tetanus is based on clinical features. In adults, is should be differentiated from tetany, strychnine poisoning, drud induced dystonic reaction, rabies and orofacial infection. In neonates, hypocalcemia, hypoglycemia, meningitis, meningoencephalities and seizure should be excluded. Respiratory collapse, aspiration pneumonia, bronchopneumonia, and respiratory failure are the common respiratory complications of tetanus[3].

The Philips prognostic Scoring System is commonly used to categorize tetanus. Short incubation period, cephalic variety, extremes of age and skin poppers, are the poor prognostic indicators of disease[4].

Tetanus is an entirely preventable disease, which can be prevented by giving tetanus toxoid (TT) or immunization with DPT[5].

The specific treatment of an established tetanus consist of human anti tetanus immunoglobulin, wound debridement, sedations for fits, antibiotics, nutritional support along with other supportive care.[6]

Tetanus is endemic in Pakistan and prevalent in the rural papulation of our country [7.]

This study was conducted to find out the clinical characteristic and treatment outcome of tetanus patients admitted to general medical unit in our set up.

MATERIALS AND METHODS

After taking an informed consent, this descriptive study was carried out on patients admitted to Medical Unit of Saidu Teaching Hospitals Swat. The study included 42 patients with established tetanus from 16-02-2013 to 14-07-2017.

All ages and both genders were included in the study. The diagnosis of tetanus was made on clinical features. For sever of the dieses Philips scoring system was adopted. Wound of entry, treatment given before coming here, complications developed and the treatment given for this complication were recorded. The final cause/factors responsible for complication and death were also noted.

The neonatal tetanus and patients with ambiguous or localized tetanus were excluded from the study.

Relevant laboratory investigations were carried out where needed. Analysis was done in SPSS version 20. The frequencies and percentages were calculated for all variables. The age group was expressed in range and ratio was determined for gender. The data was presented in tables and figures.

RESULTS

The mean age of the patients with tetanus Mean Age was 30.5714 with a minimum age 10 and maximum 0f 80. Most of these patients were between 21 to 60 years (60%).

On the basis of Philips scorning System, 5 (12%) Patients were having mild, 7 (17%) patients moderate and 30 (71%) severe disease.

The age and sex distribution of the patients is given in the table.

Table No.1: Age and Sex Distributons

Age	Male N=37	Female N=5	Total N=42
10 – 20	12	2	14
21-40	12	3	15
41-60	10	0	10
Above 60 Years	3	0	3

Ten (23.8%) patients needed tracheostomy and three (7.14%) patients were referred for mechanical ventilator.

Out of 42 patients 13 (31%) expired in our unit.

All of these expired patients were having severe disease on the basis of Philips Scoring System.

The age and sex distribution of these expired patients is given in table.

Table No.2: Age and Sex Distributons of Expired Patients

Age	Male N=10	Female N=3	Total N=13
10 - 20	8	2	10
21-40	1	1	2
41-60	1	0	1
Above 60 Years	0	0	0

The wound of all of these patients were not appropriately treated before coming to the medical unit of Saidu Teaching Hospital Swat.

The route of possible entry is given in the table.

Table No.3: Route of Possible Entry

Route of Entry	No of patients n=42	% age
Entry wound on face, Neck or body wall	3	7.14%
Entry wound on upper limb	8	19.03%
Entry wound on lower limb	11	26.20%
Post-surgical/Obst	8	19.03%
Unknown	12	28.6%

None of these patients were previously immunized (active or passive). The stay of these patients in medical unit is mentioned in table.

Table No.4: Stay in Medical Unit of SGTH Swat

Stay	No of patients N=42	% age
Less than 24 hours	14	33.33%
1-7 days	17	40.47%
More than 7 days	11	26.20%

The important/major complications, which the patients develop during their stay is given in table.

Table No.5: Complications Developed in Tetanus Patients

Complications	No of patients n=42	% age
Cellulits	11	**26.20%**
Autonomic instability	11	**26.20%**
Nosocomial pneumonia	7	**16.70%**
Acute Renal Failure	5	**11.90%**
Hyperthermia	4	**9.50%**
Respiratory Failure	4	**9.50%**

Most of these complications contributed to the ultimate cause of death which is given in table.

Table No.6: Cause of Death

Factors	No of patients n=13	% age
Septicemia/Septicshok	3	**23.07%**
Renal Failure	3	**23.07%**
Respiratory Failure	4	**30.79%**
Cardiac arrest	3	**23.07%**

DISCUSSION

Tetanus is prevalent in developing countries and contributes to high morbidity and mortality despite the availability of affective tetanus vaccines since 1923 [8.]

Better awareness of tetanus prophylaxis is necessary and future tetanus prophylaxis may be more effective in prevention of the disease. None of these 42 patients in this study had received previously active immunization in the form of T.T.

More than 50% of patients in our study were the young (10-40 years). The same pattern was also observed by Feroz AHM and Lau LG in other developing countries like Bangladesh and Malesia respectively [9,10] . This is due to non-immunization status of these individuals.

The vanning of immunity, in previously fully immunized individuals, is the major cause of tetanus in developed world [11] .This was not reflected in ours study.

Most of the patients in this study were males belonging to rural areas and former by profession. This is according to the studies carried out by Feroz AHM and Phillipo L Chalya1 et al [9,12]. The reasons for such observations are the outdoor activity in which males are commonly involved. Moreover, mass immunization program for female during antenatal care is the probable preventive factor and for low incidence in female [5].

A good number of the patient had entry wound on lower limb, which is the commonest site in other parts of world as well [9,10].This is also another cause for high incidence of the disease because barefoot walk is more common in young male as compared to other people of the society especially third world [12].

Our twelve (28.6%) patients were having no apparent wound. The minor and forgotten injury is the probable cause as observed by Phillipo L Chalya1 et al in his study at Tanzania where 33.6% of patients with established tetanus had no apparent wound on the body [12].

Generalized fits, locked jaw and dysphagia were the commonest presentations in our patients. This is also according to observations of Feroz AHM and Lau LG et al [9,10].

Tracheostomy was performed in ten patients to prevent laryngeal spasm and for suction of secretions.This is more than 15.7% of procedure done as reported by Phillipo L Chalya1 et al in Tanzania[12].

Almost all of these patients developed complications. This is much higher than the observations of Younas NJ and Amare A1 et al[7,13].

All of those patients who expired in our unit were in the age range of 10-40 years. Komolafe MA et al reported 53.5% mortality in Nigeria in this age group [14].

The overall mortality in patients shifted to our unit during these years was 31%. This is lesser than the mortality of 53.5% in Nigeria.[14]

Seven (16.67%) patients had moderate disease with 0% of the overall mortality, which is lesser than the 15.3% mortality in patients with moderate disease in Turkey.[15]

Severe tetanus had 92% mortality in Turkey while we observed 65% in our patients.[15] The overall 31% mortality in our study papulation is lesser than the 40% mortality in the other developing countries.[8,16,17]

The overall worldwide mortality is 10-50% [18].

Three (7.14%) patients who expired, needed artificial ventilator support and were referred to be put on ventilator but unfortunately they couldn't reach the facility. It is due to the non-availability of mechanical ventilator in our setup.

Autonomic instability, cellulitis, hyperthermia and nosocomial pneumonia were the common complications, which develop during the course of illness and were the major contributing factors of mortality in those patients expired in medical unit of our hospital. Such types of complications were also reported by other observer as well [15,19,20.]

The poor prognostic factor in this study were younger age, wound on lower extremity, late shifting, non-immunization, wound of mismanagement, development of serious complications and non-availability of ventilators. These factors are also responsible for higher mortality in Turkey as reported by Saltoglu N et al [15].

CONCLUSION

Tetanus, which is an entirely preventable disease, has very high mortality in our set up. Lack of active immunization, mismanagement of wounded and complications which develop during the course of management are the major contributing factors of high mortality even in tertiary care hospitals like ours.

Author's Contribution:

Concept & Design of Study:	Wasil Khan and Abdul Jabbar
Drafting:	Wasil Khan and Abdul Jabbar
Data Analysis:	Wasil Khan and Abdul Jabbar
Revisiting Critically:	Wasil Khan and Abdul Jabbar
Final Approval of version:	Wasil Khan and Abdul Jabbar

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

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Original Article

Close Reduction and Percutaneous Threaded Pin Fixation of Proximal Humerus Fractures

Percutaneous Threaded Pin Fixation of Humerus Fractures

Muhammad Zahid Siddiq, Muhammad Nauman Akhter and Bilal Hussain

ABSTRACT

Objective: To evaluate the treatment results of displaced fractures of Proximal Humerus in our set up.
Study Design: Descriptive / prospective / case series study.
Place and Duration of Study: This study was conducted at the Department of Orthopedic, Aziz Bhatti Shaheed Hospital, Gujrat from January 2012 to December 2016.
Materials and Methods: Total 53 patients of displaced fractures of proximal humerus who merits the inclusion criteria for this study was operated by close reduction and percutanious threaded pin fixation technique. Average age was 40 years range from 16 to 65 year. All the case was followed weekly for six week and after six week pins were removed and a gradual sequence of shoulder rehabilitation began. Then follow up at outpatient clinic every month AP, axial or tans scapular lateral X-ray were obtained at each visit to access alignment, union and signs of a vascular necrosis. We used the UCLA shoulder score for the clinical evaluation). Radiological and clinical out-come at 6 month follow-up or later taken as final result for study.
Results: Average fracture healing time was 12 week. There were only two non unions. At six month follow or later (average 7.5 month) functional outcome of patient was recorded according to UCLA score system which were Excellent 10 (29%), good 28 (40%) fair 9 (20%) poor 5 (11%). There was no pain or slight pain on particular activities in 69% patients. Two patients have severe pain which was not relieved by strong medication. There was joint stiffness in 9 maximum forward flexion 120° to 150° which was achieved. Superficial skin tract infection was in 10 cases. No deep infection. No avascular necrosis of humeral head. Twenty patients (76%) were satisfied with the result of the treatment and three patients (24%) were not satisfied.
Conclusion: Displaced proximal humeral fractures could be treated by closed and percutaneous threaded pin fixation, yielding good outcome. No major complications such as avascular necrosis, nonunion, deep infection, or neurovascular deficit were associated with this method of treatment.

Key Words: Displaced, Humeral, Percutaneous, Proximal, Threaded Pin.

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INTRODUCTION

Fractures of proximal humerus are relatively common injuries in adults and are especially frequent among elderly.[1] These fractures are approximately 5% of all appendicular skeleton fractures.[2] these fractures have bimodal age distribution occurring either in young individuals following high energy trauma or in elderly as low-energy osteoporotic fractures resulting from simple falls from standing height[3,4] with a 2-3 to 1 female to male preponderance.[5]

Neer's classification remains the most commonly used and accepted system.[6,7] It is based on six groups and four main fracture fragments (parts) comprising the head, greater tuberosity, lessor tuberosity and shaft. Displacement is defined as morethan 1cm of translation translation or 45° of angulations of respective fracture parts. Non displaced or minimally displaced fractures about 80% of proximal humerus fracture can be treated conservatively with success. Remaining 20%, unstable, displaced two three and some four part fractures should be reduced and stabilized.[8] Hemiarthroplasty is currently indicated in case of four part fractures in osteoprotic bones of elderly in head splitting or in severe articular surface damage caused by impaction or depression.[9,10]

Various methods of fixation of these fractures have been described in literature such as use of plates, wires and screw fixation, intramedullary nailing, percutaneous pinning and external fixation.[11,12,13] In past few years the trend has been changed from open reduction and massive internal fixation towards closed reduction and minimal fixation, which is less invasive

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method associated with less soft tissue damage, low rate of infection and low rate of avascular necrosis of humeral head.[14-17] Threaded pins have better purchase and less chance of pin migration, loosening and loss of fixation than smooth pins. Closed reduction and percutaneous threaded pin fixation is a reliable method of fixation of displaced proximal humerus fractures with good bone quality and less comminution.

MATERIALS AND METHODS

This prospective case series descriptive study was designed and carried out at Aziz Bhatti Shaheed Hospital, Gujrat from January 2012 to December 2016. All cases of proximal humerus fractures who merit for close reduction and percutaneous pin fixation was included in the study. All cases were operated by the same surgeon under general anesthesia. The patients were positioned supine on the radiolucent table with sand bag contoured medial to scapula to ensure that the entire shoulder girdle is freely exposed for fluoroscopic imaging, C-Arm adjusted in such a way from opposite side of surgeon across the table, anteroposterior and trans scapular lateral view could be taken easily and no hindrance in manipulation and reduction.

A trial reduction was always performed to confirm the feasibility of close reduction and pin fixation before sterile preparation and draping. When closed reduction was confirmed the shoulder and arm was sterilely prepared and the reduction and position was maintained by trained assistant. While assistant maintain the reduction the surgeon inserted the 2.5 terminally threaded pin from directly beneath the insertion of deltouid into the humerus sub-chondral bone under C-arm guidance. Angle of pin was marked by positioning the pin over shoulder and a p image is obtained, then a small incision is made over the lateral arm below the insertion of deltoid in safe area, soft tissue spreaded with tip of clamp, pin firmly positioned against cortex of bone some time sleeve was used and then pin drilled in at proper place under c-arm guidance.

In two part relatively stable fracture we commonly used three threaded pins from lateral side of arm into head in divergent way in three or four part fractures one or two additional pins in antigrade direction from greater tuberosity to medial humeral cortex. Sometime 4mm cannulated screws with washer to stabilize the tuberosity.

After fixation shoulder was always moved under imaging to see positioning of pins in different planes, and to see the all fracture fragments move as a one block under c-arm. It confirmed stability. For difficult reduction pin used as joy stick, and to undo the medialization of humeral shaft fulcrum of O.T sheet was some tome used between arm and chest wall. Reduction was always confirmed in AP view in anatomical position of the shoulder.

Initially in early fifteen cases pins were cut under the skin but due to the problem of pain full tenting of the skin due to subsiding of swelling during post operative period, pins were bend and cut exterior to skin in remaining cases. Arm was immobilized in a poly sling in post operative period and follow up every week up to 4 weeks to see any migration of pin or loss of reduction. Then after six week pins were removed under local anesthesia and a gradual sequence of shoulder rehabilitation began.

The patients were examined in the outpatient clinic every month AP, axial or tans scapular lateral X-ray were obtained at each visit to access alignment, union and signs of avascular necrosis. We used the UCLA shoulder score for the clinical evaluation.[18] Radiological and clinical outcome at 6 month follow-up or later taken as final result for study. The range of motion and power always compared with the opposite shoulder. A maximum score of 35 is possible with higher scores indicating better outcomes. The UCLA score can then be converted to a 100-point scale for comparison with other shoulder outcome tools.

RESULTS

Total 53 patients were selected for study and were operated out of which 8 patient lost follow up before 6 months so excluded from study. Out of remaining 45 patients 26 were female and 19 were male, average age was 40 years range from 16 to 65 year. Average fracture healing time was 12 week. Loss of reduction was in 6 patients in which re-fixation was done in 3 patients. Out of 45 patients 24 two part, 18 three part and 3 was four part fractures. All patients were operated within one week of injury. At six month follow or later (average 7.5 month) functional outcome of patient was recorded according to UCLA score system. In II part fractures average UCLA score 28.5. In III part fracture average UCLA score was 22.5. In 4 part fractures average UCLA score was 13.3. Eleven patients were not satisfied of treatment.

Table No. 1. Sex distribution of patients (n=45)

Sex	No. of Patients	Percentage
Male	19	42.0
Female	26	58.0
Male to female ratio	1:1.36	

Table No. 2. Frequency of Results (n=45)

	No. of Patients	Percentage
Excellent	10	22.0
Good	28	62.0
Fair	9	20.0
Poor	5	11.0

There was no pain or slight pain on particular activities in 69% patients. Two patients have severe pain which was not relieved by strong medication. There was joint stiffness in nine patients in which manipulation and

aggressive physiotherapy was required. Maximum forward flexion 120° to 150° which was achieved. There was nonunion and severe pain in two patients which was referred for arthroplasty.

Table No. 3. Frequency of achieved results (n=45)

	No. of Patients	Percentage
Superficial skin tract infection	10	22.0
Deep infection	0	Nil
Avascular necrosis of humeral head	0	Nil
Pain full tenting of skin	9	20.0
Pin migration	1	2.0

DISCUSSION

The incidence of fracture of the proximal humerus is increasing because of increased number o geriatric individuals and increase in high-energy trauma. A conservative treatment in a poly sling, followed by functional rehabilitation under supervision yields satisfactory results in minimally displaced fractures. However, displaced two-part and three-part fractures need to be reduced and stabilized.[12]

Percutaneous pinning seems to be a suitable alternative to other operative techniques such as intramedullary nailing or open/mini open reduction and internal fixation using wires or plates[13] but in fractures where reduction and fixation not possible internal fixation is required and in which head is splitted or compressed hemiarthroplasty is required.[8] In most two-part surgical neck fractures, anatomical reduction and stable fixation can be achieved in a closed manner. We use UCLA shoulder score (University of California Lasangles shoulder score) in our study instead of commonly used constant murley score because it was easy to apply in our outpatient set up. University of California at los angles (UCLA) shoulder score published in 1981, is one of the oldest shoulder outcome tool still in use to day. Although tools of UCLA has not been validated and reliability and responsiveness is poorly established but it can be used to access a variety of shoulder conditions including total shoulder arthroplasty, rotator cuff tear and subacromial decompression.[14] We use UCLA score because it was easy to use and practically possible to use in our set up. The UCLA score can then be converted to a 100-point scale for comparison with other shoulder outcome tools.

In our study union was achieved in almost all patients except two patients at average about 12 weeks time. The both case of non union was osteoprotic fracture and one three part one four part, need referral for arthroplasty. Good and excellent result was found in 69% patients in which patient was satisfied and fair results in 20% patient, poor results in 11% patient patients which were unsatisfied all patient were 3 part and 4 part fracture with osteprotic bones.

There was no pain or pain or occasional slight pain in 69% patient and pain on heavy or particular activities in 15% patients. These results are comparable with other studies.[15,16] Range of motion achieved in our patients was less, maximum forward active flexion 120° to 150° and stiffness of shoulder in 9 patients which need manipulation followed by physiotherapy due to poor response of our patient to rehabilitation program and short follow up average 7.5 month.

Migration of pins was only in one and loss of reduction in 9 patients only three required re-fixation. Risk of migration is reduced due to use of threaded pins instead of smooth pins. Loss reduction was mainly due to poor fracture reduction and poor stabilization due to osteoporotic bones. We use divergent pin fixation pattern which is more stable than parallel pins and convergent patterns. In three and four part fractures for greater tuberosity fixation we use one or two antigrade pins and in a few fractures cannulated screw to prevent migration of greater tuberosty. Migration of tuberosity more than 5mm results in poor results and need re-fixation.

Pin-tract infection is the most common complication with percutaneous pinning.[17] Initially we cut pins inside skin but it results in painful tenting of skin so later we always keep pins out side skin, but it results in pin tract infections in 20% patients which healed after removal of pins. No deep infection noted. Which is otherwise common complication in open reduction and internal fixation.[16,17] We did not remove the pins until they became loose or after 6 weeks to avoid displacement of the fracture. The other common complications reported in the literature are stiffness, loss of fixation, axillary nerve injury, secondary displacement and deep infection, vascular necrosis of humeral head.[18] Three patient among the our patients who were not satisfied with the results developed postoperative stiffness and limitation of movement in all directions. The other three poor patients experienced mild and moderate displacement (3-5mm) of the fracture but with physiotherapy, they gained a good range of motion but still different from the unaffected side. There was no avascular necrosis and no deep infection, no axillary nerve injury noted in our study.

High percentage (69%) of good to excellent results with relatively low complications in our study suggest that this method is a very effective one and has the potential to become procedure of choice in properly selected fractures though the learning curve for closed reduction and per cutaneous pinning is steep, it is of quite worth.[19]

CONCLUSION

Displaced proximal humeral fractures can be treated by closed reduction and per cutaneous pinning, achieving

good results .Good fracture positioning and adequate stabilization can be achieved by this method. Chance of major complications such as avascular necrosis, nonunion, deep infection, or neurovascular deficit is very less with this method of treatment.

Author's Contribution:

Concept & Design of Study:	Muhammad Zahid Siddiq
Drafting:	Muhammad Nauman Akhter and Bilal Hussain
Data Analysis:	Muhammad Nauman Akhter and Bilal Hussain
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Original Article

Audit of Ruptured Uterus in Bolan Medical Complex Hospital Quetta

Audit of Ruptured Uterus

Hanana Hameed and Iffat Jehan Usmani

ABSTRACT

Objective: To determine the frequency, cause, management and outcome of ruptured uterus in both units of Bolan Medical Complex Hospital in Baluchistan, Pakistan.

Study Design: Prospective study

Place and Duration of Study: This study was conducted at the Department of Gynecology and Obstetrics, Bolan Medical Complex Hospital, Quetta from 1st January to 31st December 2016.

Materials and Methods: It was done to describe the frequency, cause, treatment, complications and maternal and fetal morbidity and mortality associated with ruptured uterus. A structured questionnaire was used to collect information about each case from different persons and registers.

Results: During the study of one year a total of 68 cases of ruptured uterus and 12000 hospital deliveries were recorded for a ratio of 1:177. Causes of rupture were multiparity 29.4%, obstructed labour 14.7%, oxytocin induced 7.4% and uterine scar 47.7%. Most patients were multipara and rupture was complete in 88.2% of patients. Site of the rupture was in lower uterine segment in 50% and in right lateral segment in 17.7%. 14.7% of patients had associated urinary bladder injury. Total abdominal hysterectomy was performed in 17.6% of patients and repair was done in 82.4%. Vesico-vaginal fistula and wound infection were the rare postoperative complications. Maternal mortality rate was 11.8% and fetal mortality rate was 85.3%.

Conclusion: This study reveals that an integrated effort to prevent the causes of uterine rupture and ensure effective management to reduce maternal and perinatal morbidity and mortality is needed.

Key Words: Audit of Ruputer, Frequency, Cause, Management.

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INTRODUCTION

Uterine rupture is defined as a breach in the integrity of the myometrial wall with spillage of uterine contents into the peritoneal cavity[1]. Uterine rupture is one of the major obstetric complications of labour and contributes significantly to maternal and perinatal mortality and morbidity[2]. Worldwide about 0.34 to 0.5 million women die each year due to complications of pregnancy and child birth, mostly in developing countries[3]. The maternal mortality ratio in Pakistan is one of the highest in Asian countries 49/100,000 live births. Uterine rupture is also associated with short term maternal morbidities such as vesico-vaginal fistula, urinary bladder rupture, and anemia

And in the long term surgical intervention may cause sterility of the mother leading to psychological trauma, divorce and loss of economic support[4].

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In developed countries the majority of cases occur in women with previous cesarean section, while in developing countries, it usually results from prolonged obstructed labour with previous scar, grand multipara with advanced age etc[5]. Other factors that lead to this accident are poor antenatal care home deliveries by traditional birth attendents and others[6]. Unfortunately in developing countries like Pakistan factors like poverty, ignorance, quackery, illiteracy, traditional practices, high parity, lack of antenatal care, cephalo-pelvic disproportion and injudicious use of oxytocics contribute to a high incidence of uterine rupture. The objectives of this study are to determine the incidence, maternal complications and management modalities of ruptured uterus in pregnant Pakistani women.

MATERIALS AND METHODS

Bolan Medical Complex Hospital is one of the two tertiary care hospitals in Balochistan, Pakistan. A prospective observational study was conducted in both units of Gynecology and obstetrics Department of Bolan Medical Complex Hospital from 1st January to 31st December 2016. Total number of deliveries conducted during one year was 12000. All cases of ruptured uterus diagnosed on admission as well as those which occurred after admission to Bolan Medical Complex Hospital were included in the study. Diagnosis was made with the help of history and

clinical examination and finally confirmed on leucotomy. 68 patients with ruptured uterus were treated during the study period. These patients were analyzed with regard to age, parity, booking status, previous caesarean section and other risk factors , management options and feto-maternal outcome. Data was collected and percentages were calculated.

RESULTS

During the time period of one year from 1st January to 31st December 2016 68 cases of uterine rupture were registered out of 120000 deliveries. This represents the frequency of 0.56% or 1 in 117 deliveries. Age of the patients ranged from 18 to 50 years with the mean of 31 years. Table 1. Parity of patients ranged from 0-14 with the mean being 5. There were 3 multiparous cases (4.4%) which followed syntocinon use and myomectomy. The duration of labour for 30% cases of ruptured uterus was <36 hours and for 70% women it was upto 72 hours. Most cases were from rural areas 85% while 15% had antenatal care. 65 patients (95.4%) presented with signs of rupture at admission while 3 patients (4.4%) ruptured after admission in the hospital.

Pre-disposing factors were scared uterus in 32 patients (47,7%) multiparity with malposition and malpresentation in 20 patients (29.4%), injudicious use of oxytocin in 6 patients (7.4%) and obstructed labour in 10 patients (14.7%). Out of 68 patients 54 (79.4%) were referred cases being referred from peripheral areas of Balochistan including Kuchlaq, Saryab, Zhob, Pishin, Chaman, Khuzdar, Jacobabad , and Sibi while the rest of the patients ie 14 were local patients.

Out of the 32 patients with scarred uterus 20 patients had previous one and 10 patients had previous 2 and 2 patients had previous 3 caeserian sections. The patients with previous 3 LSCS had gone into preterm labour. Out of the 30 patients with previous 1 LSCS18 patients had taken trial of labour at home because of spontaneous onset of labour while 12 patients had received augmentation with syntocinon infusion by Trained Birth Attendants at different Maternity Homes.

At laporotomy rupture was complete in 80% while 20% had incomplete rupture. Urinary bladder was involved in 12% of the cases. About 60% of patients arrived in a state of shock and were given urgent resusitatory measures followed by surgery.

As concerns management, repair of uterus without tubal ligation was performed in 34 patients (50%) repair with bilateral tubal ligation was done in 17 patients (25%), uterine repair with urinary bladder repair was done in 5 patients (7.4%) . Hysterectomy was performed in 12 patients (17.6%). Table 3.

Almost all patients developed some sort of complication. Observed morbidities were 10 patients (14.7%) who remained in unconscious state for 6 hours after surgery, 12 (17.6%) patients had anemia, 14 patients (20.6%) had puerperal sepsis, 8 patients (11.8%) had wound infection, 6 patients (8.8%) had vesico-vaginal fistula. Many patients had more than one complication.

Table No. 1. Characteristics of Patients

Characteristics	Number	Percentage
Age in years		
21-30	22	32.4
31-40	35	51.5
41-50	11	16.2
Parity		
Primigravida	03	4.4
Multigravida	32	47.1
Grandmultipara	33	48.5
Booking status		
Booked	10	15
Un booked	58	85

Table No. 2. Risk Factors. N =68

Risk factor	Number	Percentage
Scarred uterus	30	47
Scarred uterus with spontaneous labour	20	29.4
Scarred uterus with augmentation with syntocin	12	17.6
Grand multiparty	20	29.4
augmentation with syntocin in unscarred uterus	06	7.4

Table No. 3. Surgical Management (N=50)

Surgical Procedure	Number	Percentage
Uterine repair	34	50
Uterine repair, bilateral tubal ligation	17	25
Uterine repair+blader repair	05	7.4
Hysterectomy	12	17.6

Table No. 4. Maternal & Perinatal outcome(N=68)

Outcome	Number	Percentage
Maternal morbidity		
shock	10	14.7
Anemia	12	17.6
Puerperal sepsis	14	20.6
Wound infection	8	11.8
Vesico vaginal fistula	6	8.9
Maternal mortality	8	11.8
Perinatal outcome		
Still birth	58	85.3
Early neonatal death	2	3
Alive	8	11.8
Perinatal Mortality	60	88.2

8 (11.8%) maternal deaths occurred due to ruptured uterus. Out of these 4 (5.9%) maternal deaths were due to irreversible shock, 4 (5.9%) patients died due to sepsis. Regarding fetal outcome 58 (85.3%) babies were still born and 10 (14.7%) babies were delivered alive but unfortunately 2 babies (3%) died on early neonatal period, with a total perinatal mortality of 88%.

DISCUSSION

Rupture of the gravid uterus is a grave obstetric complication associated with high maternal and perinatal mortality rates[7] the graveness of this complication arises from the fact that most females are young and hysterectomy of irreparable uterine rupture results in sterility for the rest of their lives.

The incidence of ruptured uterus in our study was 1:177 deliveries which co-relates with that reported by Sheikh B N et al 1:194[8] P C Ibekwe 1:188[9] but higher than that reported by Rabia Khurshid 1:467[10], Nyengidiki 1:258[11]. The incidence is low as compared to Qudsia Qazi 1:64[12] and Akaba G O et al 1:117[13]

The age group mainly affected by this obstetric catastrophe in the index study were less than 39 years 82% which is consistent with Elsadiq et al 81.8%([14].

Majority of ruptured uterus occurred in multiparas esp. parity group 2-4. This can be related to the fact that most of them had a scarred uterus[15]. On the contrary the study done by Nyengidiki T K et al gave a figure of 32.5% unscarred uteri that got ruptured[11] while in Ethiopia it revealed that 95 % of patients with ruptured uterus were grand multiparas with unscarred uteri[16].

About 85% of patients in our study were unbooked being referred from peripheral areas of Balochistan comparable to 92% of unbooked cases reported by Sheikh B N et al[9]. Most of the cases had been referred by traditional birth attendants or nurses who failed to refer the patients at an early stage of labour. This emphasizes the need for improvement in health monitoring system with utilization of antenatal risk scoring index and implementation of partograph as detective tool for deviation of labour from norm…..

The rupture of unscarred uterus had been well documented as common in developing countries (16). However in the index study ruptured uterus is more commonly seen in previously scarred uterus, as has been noted in other studies[17]. This may be attributed to lack of antenatal care, residence in rural areas far away from tertiary care hospitals and the tendency to seek unskilled intervention in the event of another pregnancy and the lack of transport facilities.

Our study showed that 29.4% cases of ruptured uterus were due to multiparity with malpresentation and malposition, while 16.2% cases were due cephalo-pelvic disproportion. Injudicious use of oxytocin was also noted to be contributory to rupture of gravid uterus in 10 patients.. This etiologic base was also brought into focus by various studies[12]. The long duration of obstructed labour was the cause of ruptured uterus in 14.7% cases. This observation was closer to the studies done in India[17] where 27% of uterine rupture cases were due to obstructed labour but in contrast to the study in Ethiopia and Nigeria where 88% of uterine rupture was due to obstructed labour[16].

In our study majority of ruptures were complete and occurred in the lower anterior segment of uterus 50% as had been observed in other studies due to previous caesarean scar being a week point. As for the management options after considering the parity esp. number of living children, extent of uterine damage and condition of tissues decision to perform repair of uterus or hysterectomy is made. In the index study 50% of patients had repair of uterus without ligation, 25% of patients had uterus repaired with bilateral tubal ligation, 7.4% of patients had uterine repair with urinary bladder repair and 17.6% patients had hysterectomy. This is comparable with the study done by Nirmala from India[17] and Datijjo L M from Nigeria[18] but in contrast to the study done by Amanuel Gessessew[16] and Qudsia Qazi[12] where majority 60-70% of patients had hysterectomy. Rate of urinary bladder injury in 7.4% of patients is much lower than the 18.5% reported by Gessessew from Ethiopia[16].

In our study 80% of patients had severe blood loss that necessitated blood transfusion. Comparable results were obtained from Nigeria[19] but others elsewhere reported far lower percentages[20]. The most common complications in our study were anemia 80%, shock 50% and puerperal sepsis 40%, vesico- vaginal fistula 10% and urinary tract infection 10% which were corroborated by similar findings in Ethiopia[16].

In the index study the perinatal mortality rate was 80% which is comparable to 83.3% reported by Chuni et al[21]. The maternal death rate was 14.7% which was comparable with that reported Amanuel Gessessew 11%[16] and Nirmala Duhan[17] but was higher than that reported by Naushaba 2%[15].

CONCLUSION

The high maternal and perinatal mortality and morbidity that follow uterine rupture needs a serious effort to prevent its causes. Good antenatal care prompt referral of obstructed labour, availability of transportation and effective family planning are essential factors to prevent uterine rupture and to decrease the maternal and perinatal morbidity and mortality associated with it.

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Original Article

Descriptive Study on Frequency of Depression in Chronic Hepatitis C

Jeando Khan Daidano[1], Akbar Hussain Yousfani[2], and Bilqees Daidano[1]

ABSTRACT

Objective: The objective of this study was to determine the frequency of depression in uncomplicated chronic hepatitis C virus (HCV).

Study Design: Descriptive / cross sectional study.

Place and Duration of Study: This study was conducted at the Department of Medicine PMCH Nawabshah from January 2016 to April 2017 using beck depression inventory (BDI).

Materials and Methods: 130 patients were selected for this study after taking informed consent to all the patients with chronic hepatitis C were included depression was assessed using BDI.

Results: A total 150 pts were enrolled for this study out of them 89 were males and 61 were females with history of HCV more than 6 months depression confirmed by BDI scale.

Conclusion: Depression is common in chronic hepatitis C patients, some patients even present with depression, early diagnosis and treatment of chronic hepatitis C and depression patients quality of life is improved and complications can be reduced.

Key Words: Depression, Chronic hepatitis C, HCV.

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INTRODUCTION

Depressive disorder is defined as one or more depression disorder with five or more than five symptoms of depression As in other chronic illnesses hepatitis c is associated with psychiatric disorder particulary depression [1] . depression is characterized by low mood and loss of interest in enjoy able activities chronic liver disease is associated with depression.

According to clinical studies patients with CLD are associated with depression[2]. Incidence of hepatitis C in Pakistan is very high[3] . Depressive symptoms are more with HCV [4] . Depression have adverse effect on illness, physical symptoms, functional impairment reduced compliance to treatment and quality of life is reduced.[5] And Depressive symptoms in patients with chronic hepatitis C are related to awareness of diagnoses and prognosis.[6]

Chronic hepatitis C is major public health problem in the world 170 million people are affected.[7] HCV is common cause of liver failure and leading indication of liver transplant in developed countries depression commonly occurs in chronic infection presence of depression in chronic hepatitis C has adverse effect on the illness with decreased compliance of treatment and quality of life.[7] Psychiatric side effects develop in patients with interferon therapy especially depression[8] according to new studies depression can be treated in patients who are on interferon therapy and ribavarin for chronic hepatitis C[8]. Until the approval of sofobuver semiprefvir and doctlatesvir in 2014, interferon was also used as triple combination regimen

Worldwide in many countries interferon is being used as a treatment of Chronic hepatitis C. The most common psychiatric side effects of interferon is depression[9] suicidal ideation, suicide and psychosis can occur due to depression early termination of antiviral treatment chronic hepatitis C patients[10] compared to general population psychiatric disorder particularly depression are increased in chronic hepatitis C patients[11]

Depression is a common problem in chronic hepatitis C patients who do not receive antiviral therapy[12] Depression screening was needed in patients with Chronic hepatitis C.[12] Higher incidence of depression in chronic hepatitis C who do not receive antiviral therapy in previous studies[13]

MATERIALS AND METHODS

Study was carried out in 150 patients with chronic hepatitis C virus in the out patient department of medicine at PMCH, Nawabshah from June 2015 to Dec 2016.

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Inclusion Criteria:

1. Age 18 years and above
2. Anti HCV positive
3. PCR HCVRNA positive

Exclusion Criteria:

1. Cirrhosis of liver
2. Coinfenction with HBV and HIV
3. Any major illness
4. Alcohol abusive i/v abuse
5. Severe psychiatric illness

Informed consent was taken from all the patients questionnaires were given to all the patients one questionnaire was included complete history and second questionnaires for BDI scale to asses depression, complete history clinical examination including general physical examination and systemic examination was done .

RESULTS

On complete history of the patient majority of the patients presented with depressive symptoms along with dyspepsia, general physical examination was normal and systemic examination was normal no any abnormal finding was not present.

Age of the patients range from 18-60 years mean age was 42.20, farmers were 47, Housewives 46, employed 9, self employed 10, un employed 13, Health workers 5, education level: uneducated 60, primary 40, middle 15, matric-15 graduate- 10, married-110, unmarried-5, widows- 15 - divorse 20, viral load more than 5 lacks in 100 patients, less than 5 lacks in 50 patients , SGPT increased in 80 patients, SGPT normal 70, bilirubin increased in 15 patients, Normal in 135 patients , Depression= Scale 8 patients= scale 1, 22 patients = scale 2, 90 patients = scale 3, 10 patients-= scale 4.

Table No.1: Sex

Sex	Frequency	Percent	Valid Percent	Cumulative Percent
1	82	63.1	63.1	63.1
2	48	36.9	36.9	100.0
Total	130	100.0	100.0	

Table No.2: Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	79	60.8	60.8	60.8
	2.00	12	9.2	9.2	70.0
	3.00	11	8.5	8.5	78.5
	4.00	10	7.7	7.7	86.2
	5.00	13	10.0	10.0	96.2
	6.00	5	3.8	3.8	100.0
	Total	130	100.0	100.0	

In statical ananlysis of patients- Male denoted by 1, Female by 2, education level: Uneducated =1, Primary =2, Middle =3, Matric =4, Inter = 5, Graduate = 6. Occupation: Farmers = 1, Housewives =2, Employed= 3, Self employed = 10, Unemployed= 13, Health workers = 5.

Table No.3: Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	47	36.2	36.2	36.2
	2.00	46	35.4	35.4	71.5
	3.00	9	6.9	6.9	78.5
	4.00	10	7.7	7.7	86.2
	5.00	13	10.0	10.0	96.2
	6.00	5	3.8	3.8	100.0
	Total	130	100.0	100.0	

Table No.4: Dep. Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	8	6.2	6.2	6.2
	2.00	22	16.9	16.9	23.1
	3.00	90	69.2	69.2	92.3
	4.00	10	7.7	7.7	100.0
	Total	130	100.0	100.0	

Table No.5: Post of outcome

Vaiable	N	Mean	P-Value
Age	130	42.20+_11	0.587
Sex	130	1.36+_0.48	0.009
Occupation	130	2.31+_1.47	0.640
Education	130	2.08+_1.58	0.517
SGPT	130	62.90+_26	0.290
Bilirubin	130	0.97+_0.07	0.613
Viral.Load	130	667708.0± 201451	0.215

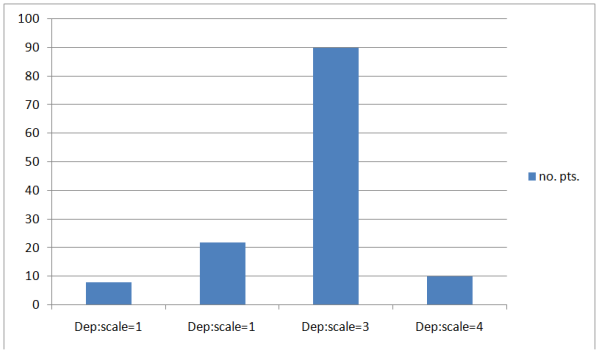

Figure No.1: Depression Percentage

DISCUSSION

In this study majority of the patients of chronic hepatitis C initial presentation was depression. Higher percentage of chronic hepatitis C had been diagnosed having depression.[14] In an other study HCV infected and healthy controls, patients have depressive disorder than controls[15]

Depression was strongly associated with chronic hepatitis C in a recent study association of depression with different types of CLD.[16]

In other study 90 participants it was observed that Chronic hepatitis C was associated with Major depressive disorder independent of interferon therapy.[17]

Depression is associated with HCV infection but patients on peglated IFN alpha therapy with Chronic hepatitis C depression develop in 30-70% during treatment period Mild to severe depression develops[18]. in a study 10% patients were on interferon therapy they withdraw. Treatment due to development of major depression[18] It was found that depression in HCV infected patients, both treated and untreated with IFN Treatment. From this study infected HCV patients have high psychiatric disorders irrespective either they were on antiviral treatment.[19] On psychiatric self assessment in non IFN receiving patients depression was 28% to 57% in Chronic hepatitis C patients,[20] in few reports depressive symptoms are increased up to 77% of interferon therapy.[20] BDI score were increased after in +INF treatment as compared to non INF treatment.

Patients who were on IFN treatment had severe depression compared to non treatment IFN patients who have mild depression,[20] depressive disorder were more in female than male patients in Chronic hepatitis C patients . older age, unemployed single and previous mood disorders were more affected psychiatric disorders are more with Chronic hepatitis C infection.[21]

Psychiatric disorders in Chronic hepatitis C patients are more compared to general population[21]

In a study in US veterans psychiatric disorders were more in Chronic hepatitis C patients.

Risk of depression is increased in Chronic hepatitis C patients due to stigmazation and psychosocial impact of personal history of Chronic hepatitis C infection.[22]

According to allavietal assessment of depression prior to decrease treatment [22]

Biological changes in CNS occur directly in patients infected with HCV It has been observed that decreased dopamine and serotonin transporters binding is associated with cognitive impairment in Chronic hepatitis C patients.[9]

Path physiological mechanism is not understood yet, but possibility of HCV spread into the CNS where its replication are at low level.[11]

CONCLUSION

Depression is a major problem in chronic hepatitis C patients, most of the patients presented with depression along with dyspepsia in chronic hepatitis C patients. Majority of the patients ignore depression and delay the treatment of chronic hepatitis C, few patients are not screened are unaware about chronic hepatitis C, few know about hepatitis C when they come for blood transfusion and Previously patients were treated with interferon, but now oral drugs are available for the treatment of chronic hepatitis C patients. Interferon causes depression. Early diagnosis and treatment of hepatitis C and depression patient's quality of life can be improved and complications can be reduced. Supportive environment and healthcare team are required for medical and psychosocial management of patients with chronic hepatitis C.

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Original Article

Ureteral Stones Removal by different ways

Treatment of Large Proximal Ureteral Stones: Extracoporeal Shock Wave Lithotripsy versus Ureterolithotrisy versus Laparoscopic Ureterolithotomy

Asif Imran,[1] Abid Hussain[2] and Muhammad Ismail Seerat[2]

ABSTRACT

Objective: To compare efficacy of extracorporeal shock wave lithotripsy, rigid ureterolithotripsy, and laparoscopic ureterolithotomy in treatment of large proximal ureteral stones.

Study Design: Prospective randomized study.

Place and Duration of Study: This study was conducted at the Department of Urology, Lahore General Hospital, Lahore from March 2012 to March 2014.

Materials and Methods: A total of 40 patients with large proximal ureteral stones (greater than 1cm) were prospectively randomized for study at Postgraduate Medical Institute Lahore. Eligible patients were treated with extracorporeal shock wave lithotripsy, rigid ureterolithotripsy and laparoscopic ureterolithotomy.

Results: Extracorporeal shock wave lithotripsy had 37.5% success rate, rigid ureterolithotripsy 64.3% and laparoscopic ureterolithotomy 90%. Fewer treatment sessions were required with laparoscopic ureterolithotomy vs rigid ureterolithotripsy vs extracorporeal shock wave lithotripsy (mean±SD1.6±0.5vs2.1±o.9±vs2.7±1.07,p=0.017)

Conclusion: Higher success rate is achieved with laparoscopic ureterolithotomy in treatment of large proximal ureteral stones but with fewer additional procedures. It is associated with more postoperative pain,longer procedure and a longer hospital stay. It is more advantageous than open ureterolithotomy, remains a salvage, second line procedure in treatment of large proximal ureteral stones.

Key Words: Proximal Ureteral Stones, Extracoporeal Shock Wave Lithotripsy, Ureterolithotrisy, Laparoscopic Ureterolithotomy

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INTRODUCTION

Ureteral stones may cause severe pain, lead to hydronephrosis and/or urinary tract infection, and ultimately may be the reason for renal function loss. Although small distal ureteral stones most commonly spontaneously pass through the ureter into the bladder, large proximal ureteral stones (>10mm) can take more than 2–3 weeks to pass all the way[1].In a worst scenario, these stones can get impacted in the ureter, requiring surgical intervention.

Medical expulsive therapy using alpha-blockers (i.e. tamsulosin, alfuzosin) or calcium channel blockers (i.e. nifedipine) have been used for several years in the treatment of patients suffering from ureteral stone, reportedly resulting in a higher stone-free rate and a shorter time to stone expulsion when compared to placebo[2]. However, a recent multicenter, randomized, placebo-controlled trial has demonstrated different outcomes and questioned the role of medical expulsive therapy[3] .

Thus, surgical intervention may be the best alternative for patients with refractory pain to analgesics, and early intervention may be considered for large proximal calculi that are unlikely to pass spontaneously. Although there is consensus that ureteroscopy is the most efficient treatment for patients with distal ureteral stones, there is a debate regarding large proximal ureteral stones[4]. AUA (American Urological Association) and EAU (European Association of Urology) have recommended ureteroscopic lithotripsy (URS) or shockwave lithotripsy (SWL) as first option, although percutaneous nephrolithotomy (PCNL) and laparoscopic ureterolithotomy (LU) may be suitable.

Currently, there is a clear tendency of less SWL and more URS in the treatment of patient with urinary stones, even in developing countries[5]. As flexible ureteroscopies are not available in all services, semi rigid or rigid ureteroscopy has been used for treatment

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of ureteral stones in all locations, even for those in proximal ureter. PCNL is a procedure with high risk of surgical complications, whereas LU has gained some popularity[6]. Based on these concepts, in this study we aimed to compare the outcomes from ESWL, URS and with those from LU for management of large proximal ureteral stones.

MATERIALS AND METHODS

A total of 40 patients with large proximal ureteral stone s(1cm or larger) were enrolled in the study at single institution between March 2012 to March 2014.

Inclusion Criteria: Proximal ureteral stones sized 1cm or larger located between ureteropelvic junction and pelvic brim.

Exclusion Criteria: Exclusion criteria were pregnancy, ureteral stone with renal failure, previous open surgery for ureteric or renal stone, incomplete follow up during or after treatment.

Stone size was measured during KUB OR CT. Envelopes for randomization were made and patient was assigned to chosen treatment of SWL, URS with pneumatic lithotripsy or laparoscopic uretero-lithotomy/LAP.

URS was performed with patient under spinal or general anaesthesia using 8.9 FR ureteroscope. Laparoscopic ureterolithotomy was performed through transperitoneal approach with patient under general anaesthesia. Clinical data were collected before, during and after treatment. Post treatment pain was assessed using visual scale.

After treatment patients were followed and imaging investigations included X ray KUB, USG after two weeks. CT was done after two months. Statistical analysis was performed using SPSS 20 Anova test.

RESULTS

Detailed data is provided in tables 1 and 2. Presenting symptoms included pain(87%),microscopic or gross heamaturia (44%), and stone was incidently diagnosed in 8% of patients. In 30.3% of patients urinary tract infection was diagnosed and pretreatment antibiotics were administered.

SWL was completed in all patients using good analgesia with mean duration of 43.8± 2.3 mintues. All procedures were performed under fluoroscopic guidance with mean radiation exposure 3.8+1.1. The impulse rate varied from 2000 to 5000 at mean power setting of 4(range 3 to 6) and a frequency of 75 to 125 Hz. After failure of the first session, 7 patients had to undergo second session. Two patients received third session of ESWL. One patient developed haematuria with symptoms of UTI which was managed conservatively. After failure of SWL,5 patients underwent URS.

URS patients received spinal (85.3%) or general anesthesia(14.7%).Mean duration of procedure was 72.3+3.8 and radiation mean exposure 2.6+1.9.A rigid ureteroscope was passed into the ureter using a safety wire and stone visualized in 85.7% of patients. Stones were fragmented through pneumatic lithotripsy.DJ stent was placed in 92.5% of patients. In 1 patient there was mucosal bleeding that was managed conservatively. Urinary tract infection developed in 1 patient. No major complication occurred. One patient had stone push up and percutaneus stone removal was performed. Two patients underwent ESWL for residual stones.

Laparoscopic ureterolithotomy was performed through transperitoneal route under general anesthesia. Difficulties during the surgical procedures included intense periureteral inflammatory process(55.5%), difficulty in ureteral stent placement(12.5%) and stone migration (6.8%).One patient required adjunctive percutaneus procedure to remove migrated stone.No major complication nor urinary leakage occurred. Double J Stent was placed in 92.4% of patients.

The overall stone free rate after one week and 4 weeks of treatment was 59% and 64% ,respectively for all 3 groups. Evaluation of the stone-free rates in each group revealed a statistically significant differance among patients undergoing SWL vs URS vs LAP(37.5 vs 64% vs 90%, p=o.o27.NO long term complications were observed.

Table No.1: Patients clinical and imaging presentation

	SWL	URS	LAP	Pvalue
No pts	16	14	10	
Mean pt age (SD)	34.1(9.1)	33 (9.5)	34.7 (8.8)	0.96
% M/F ratio	50/50 (8/8)	57/43 (8/6)	60/40 (6/4)	
Mean cm stone size (SD)	1.6(0.39)	2.05(0.32)	2.8(0.26)	0.076
%R/L(No)	62/38(10/6)	43/57(6/8)	40/60(4/6)	
% Pain(No) of pts)	87 (14)	71.4(10)	80(8)	0.55
% Hematuria	44(7)	35.7(5)	70(7)	0.23
%Hydronephrosis(No)	(10)	(12)	(10)	(0.05)
%Previous stone treatments No	0(0)	14(2)	30(3)	0.07
% Family history of stone disease	37.5(6)	28.5(4)	50(5)	0.35
Mean mg/dl creatinine(SD	0.97(0.15)	0.93(0.13)	0.97(0.12)	

Table No.2: Results of different treatments

	SWL	URS	LAP	Pvalue
Nopts	16	14	10	
Mean Minutes procedure Duration (SD)	43.8(2.3)	72.3(3.8)	135(3.9)	0.000
% stone free 1week(No)	(37.5)6	(50)7	(90)9	
%stone clearance overall	(37.5%)6	(64.3%)9	(90%)9	0.027
Mean procedure under anaesthesia(SD until stone free	2.7(1.07)	2.1(0.9)	1.6(0.52)	0.017
Mean hrs length of stay in hospital (SD)	1.4(0.46)	22.1(4.9)	67.3(5)	0.000
Mean minutes flouroscopy	3.8(1.1)	2.6(1.9)	0.216	
Mean postoperative pain on visual scale	1.5(.8)	1.6(0.98)	1.3(0.8)	0.047
% of pts After treatment opioid requirement (No)	0(0)	28.5(4)	50(5)	0.010
%Post treatment voiding symptoms(No)	37.5(6)	50(7)	40(4)	0.774
% of pts Satisfied (No)	75(12)	92.8(13)	90(9)	0.992

DISCUSSION

Gradual technical advances have modified the management of upper urinary tract stones.Initially ESWL,and URS reduced the role of open surgery in these patients.However in treatment of large proximal ureteral stones controversy still exists. Although SWL is less invasive but it has certain limitations.Ureteric stones are often more difficult to locate and therefore more difficult to target with the shockwave.The major disadvantages of SWL are long duration of treatment and requirement for auxillary procedures.

Rigid URS is safe and effective treatment for proximal ureteral stones as demonstrated by existing literature.[7] Matalaga in systemic review described URSL was associated with better stone free rate,with lower economic cost thus being dominant over the ESWL as supported by other studies[8].Cui et al found high effectiveness with both treatments without differences in the rate of severe complications[9].Stones located at the upper ureter are associated with significant increased complication rates.Stone impaction and failure to adhere to the "break-n-leave" are independent predictors of occurance of complications[10]. There are certain factors which complicate access to stones like tortiousity of the ureter,angulation and severe edema at stone site. The most important and serious complications of ureteroscopic lithotripsy are ureteral avulsion and perforation. In the literature the incidence of ureteral perforation is between 0-1%.[11].

There are important findings in our study. Success rate was directly related to invasiveness of procedure.SWL is least invasive procedure. Success was achieved in 37.5% of cases.URS is minimally invasive procedure associated with more higher success rate 64.3% than SWL[12]. Laparoscopic ureterolithotomy carries higher morbidity than former procedure. On analysis of post treatment data this becomes more evident.LAP vs URS vs SWL takes significantly more time mean 135± 3.9 vs 12.3±3.8 vs 43.8 ±2.3 minutes p 0.000),requires longer hospital stay 67.3 ±5 vs 22.1 ±4.9 vs 1.4 ±0.46 hours p 0.000, requires more opioids to treat pain(50% vs 28% vs 0% of patients p=0.010).

Succsess rate of LAP is higher when compared with URS and ESWl (90% vs 64% vs 37.5% P=0.027).High success rate of LAP is also supported in other studies as well.[13] Laparoscopic ureterolithotomy requires fewer procedures under anaesthesia to render patients stone free when compared with ESWL and ureteroscopic lithotripsy[14]. The suitability of retroperitoneal laparoscopic ureterolithotomy has been assessed and found to be effective and safe in treatment of complex upper ureteral stones.[15]

ESWL is favoured on its non invasiveness ,minimal anaesthesia requirements, low morbidity and accepted efficacy. ESWL treatment is less invasive than ureteroscopy but has some limitations such as high retreatment rate and is not available in all centres[16]. High stone burden is cumbersome for ESWL. An increased stone burden is directly associated with stone free rate..There is need for some auxillary procedures to be done for stone clearance, for example first procedure stent insertion and ureteral stent removal as second procedure etc. Several studies have focused efficacy and safety of complementary URS in the management of ureteral stones after SWL failure[17]. URS can be safely performed in normal, obese and morbid obese patients[18,19]. The patient satisfaction rate was high in all treatment modalities(75%-92.8%, p=o.99). However overall treatment outcome and patient satisfaction were not significantly different between SWL and URS in some studies.[20] Voiding symptoms were seen more with laparoscopic and URS groups(50% and 40% vs37.5% p=0.774) than those who underwent ESWL probably due to placement of stent. Recent study also supports bothersome urinary symptoms about DJ stent after URSL.[21]

Our study has certain limitations. It was conducted at centre where limited equipment was available. In the present study rigid ureteroscope and ballistic lithotripter was available. The success rate can become higher if laser flexible ureteroscopes and nephroscopes are associated treatments as their use is expanding.[22,23] Reports from different studies proved the holmium laser with stone free rate 89-100% to be highly efficient.[24]

CONCLUSION

For large proximal ureteral stones, multiple treatment sessions are required for stone clearance.LAP is associated with more postoperative pain, longer duration of procedure and longer hospital stay than URS and SWL but achieves high success rate. It is more suitable procedure after failed ureterolithotripsy or SWL and more advantageous than open ureterolithotomy. It can be considered as good option where facilities for laser flexible URS or SWL are limited.

Author's Contribution:

Concept & Design of Study:	Asif Imran
Drafting:	Abid Hussain
Data Analysis:	Muhammad Ismail Seerat
Revisiting Critically:	Abid Hussain, Muhammad Ismail Seerat
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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

Treatment of Symptomatic Oral Lichen Planus

Efficacy of Pimecrolimus Cream and Triamcinolone Acetonide Paste in the Treatment of Symptomatic Oral Lichen Planus

Hafiz Muhammad Aamir Riaz, Ayesha Shakeel, Maryam Ali Shaheen and Khurram Jaa

ABSTRACT

Objective: To compare the efficacy of pimecrolimus cream and triamcinolone acetone paste in the treatment of symptomatic oral lichen planus.

Study design: Randomized control trail.

Place and Duration of study: This study was conducted at the Dental Section, Allied Hospital, Faisalabad, from 3rd June 2016 to 31 December 2016.

Materials and Methods: Total no. of 36 patients was included in this study. Consecutive non probability sampling technique was used to calculate the sample size from the reference study by Farzam Gorouhi et al. Ethical approval was obtained from hospital ethical committee and informed consent was taken from the patients before the start of the study. Thirty six patients were randomly divided into two equal groups, eighteen patients in each group Primary outcome was measured by the difference of severity of pain by visual analogue scale at two months from baseline. Oral Health Impact Profile, clinical score and occurrence of side effects were the secondary outcomes measured at each treatment and follow up visit. Computer software SPSS version 23 was used to analyze the data. Data obtained at the end of the treatment in the form of visual analogue scale score, oral health impact profile scores and clinical scores, was compared with baseline scores. Chi square and T test was applied to find out the associated significance variables among the groups.

Results: Overall, there were 100% (n=36) patients; the study population was subdivided into two groups; group A (Pimecrolimus) and group B (Triamcinolone). The mean age, disease duration, VAS pain score, OHIP score and clinical score of the patients in group A was 44.50±6.20 years, 10.61±6.26 days, 5.72±2.32, 3.27±1.17 and 2.38±1.03 respectively, while the mean age, disease duration, VAS pain score, OHIP score and clinical score of the patients in group B was 45.72±5.35 years, 16.77±5.49 days, 6.77±1.43, 3.5±1.42 and 2.83±1.15 respectively. The mean VAS pain score after 1, 2 and 4 months, in group A, was 5.33±1.37, 3.83±1.29 and 3.22±1.39 respectively, while the mean VAS pain score after 1, 2 and 4 months, in group B, was 6.72±1.32, 5.33±1.28 and 4.0±1.57 respectively. The mean OHIP score after 1, 2 and 4 months, in group A, was 1.20±0.90, 2.10±1.42 and 1.45±1.03 respectively, while the mean OHIP score after 1, 2 and 4 months, in group B, was 1.26±1.04, 2.41±1.23 and 1.45±1.08 respectively. The mean clinical score after 1, 2 and 4 months, in group A, was 0.31±0.18, 0.95±0.36 and 0.58±0.44 respectively while the mean clinical score after 1, 2 and 4 months in group B was 0.31±0.16, 0.79±0.23 and 0.51±0.53 respectively. There was significant difference between groups on the basis of VAS score, OHIP score and Clinical score.

Conclusion: According to our study there is significant difference between the efficacy of pimecrolimus cream and triamcinolone acetonide paste, when used for treatment of symptomatic OLP with pimecrolimus cream scoring better than triamcinolone acetonide paste.

Key Words: Lichen planus, Pimecrolimus, Triamcinolone acetonide

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INTRODUCTION

Chronic inflammatory dermatitis of skin and mucous membrane is known as lichen planus[1].

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Lichen planus was named so by Erasmus Wilson in 1869, and he also delineated it. Lichen planus is a derivation from Greek word "Lichen" and Latin word "Planus" (Lichen means tree moss and planus means flat)[2]. Incidence of this disease in different populations ranges from 0.1% to 4%. Age group of 30-60 years is affected the most and it is more commonly found in women while very rare incidence in children[3]. Clinical presentation of lichen planus is as papules, plaques, erosions, striations, erythema or blisters, and most affected parts are tongue, buccal mucosa and gingival

part etc[4]. Urgent treatment is required for most symptomatic form like erosive, bullous and atrophic form but the reticular form is most common and is usually asymptomatic.

Various systemic and topical treatment options have been in practice, including which are topical and systemic immunosuppressants like, griseofulvin, corticosteroids, hydroxychloroquine, dapsone, tarcolimus, dapsone, etc[5]. Up till now not a single one of these treatments have been proved to be fully effective and resolutive, which makes the management of symptomatic oral lichen planus a baffling therapeutic challenge. Multiple wide spectrum topical and systemic treatments are in use for management of oral lichen planus but most of these therapies haven't been used in randomized control trails. In management of oral lichen planus corticosteroids have been proved to be very beneficial because of their anti-inflammatory and anti-immunological characteristics by suppressing T cell activity, but their extensive use can prove harmful because of corticosteroids related adverse effects[6]. Pimecrolimus cream 1% is tolerable and quite effective in adult patients of atopic type of oral lichen planus and it is a selective calcineurin inhibitor[7]. The aim of this particular study is to compare clinical safety and efficacy of topical pimecrolimus 1% and triamcinolone acetonide 0.1% paste which is more commonly used to treat oral lichen planus.

Although many treatment options are available and are in common use, despite of these therapeutic modalities, there is no definite treatment of this oral lesion and there are many treatment failures[8]. Corticosteroids are treatment of choice for oral lichen planus and triamcinolone acetonide paste is most commonly used commercial preparation; but because of adverse effects of corticosteroids in some patients, supplementary treatments are applied as necessary option for patients of oral lichen planus.

A novel drug, nonsteroidal topical immunomodulator known as pimecrolimus has been found to be extensively used in treating inflammatory skin and mucosal conditions and also for treatment of oral lichen planus, with efficient results[9]. Pimecrolimus acts by binding to macrophillin 12 and thus prevents dephosphorylation of activated T-cells by calcineurin[10]. This leads to marked reduction of TH1 cytokines production and inhibition of mast cell production of pro-inflammatory cytokines. The main attribute of this treatment is that it inhibits the T-cell mediated pathogenesis of oral lichen planus.

Previously there is lack of randomized control trails in which efficacy of these two drugs have been compared. This study is focused on comparing the relative efficacy of pimecrolimus 1% cream and triamcinolone acetonide 0.1% paste. So that better recommendations can be made for the treatment of lichen planus. Reference study for current article is a study by Farzam Gorouhi et al[11].

MATERIALS AND METHODS

The study was conducted in Dental Section, Allied Hospital, Faisalabad, from 3rd June 2016 to 31 December 2016. Total no. of 36 patients was included in this study. Study design is randomized control trail. Consecutive non probability sampling technique was used to calculate the sample size from the reference study by Farzam Gorouhi et al [11]. Thirty six patients were divided into two equal groups. Patients older than 8 years and clinically diagnosed as oral lichen planus were included in this study. Exclusion criteria was set as; malignancy or viral infection in mouth, patients receiving topical treatment for oral lichen planus in last two weeks or systemic treatment in last four weeks, patients using cyclosporine, psoralen, azathioprine plus ultraviolet A or B in last month, or patients with history of to the drugs under study. Ethical approval was obtained from hospital ethical committee and informed consent was taken from the patients before the start of the study.

Thirty six patients were randomly divided into two equal groups, eighteen patients in each group. Patients in group A were asked to apply pimecrolimus 1% cream four times a day, for two months, and were instructed to avoid smoking, drinking and eating for 20 minutes after applying the cream. Chlorhexidine mouth wash was recommended to be used every night before sleeping. In group B triamcinolone acetonide paste was applied as 1% three times a day at bedtime and after meals on the lesions. Assessment was carried out on monthly basis during the treatment i.e. two months, with a visit each month (three visits in total) and a final follow up assessment was done after two months of completion of treatment (fourth visit). All the visits were attended and assessed by the person conducting this research. Diagnosis was based upon the identification of a marker lesion, which was assessed for reticulation, ulceration, and erosion by visual clinical examination, by clinical scoring in which 0 represented no lesion, 1 for mild white striae, 2 for white striae with atrophic area less than 1 cm, 3 for white striae with atrophic area more than 1 cm, 4 for white striae with erosive area less than 1 cm and 5 for white striae with erosive area more than 1 cm.

Visual analogue scale (100mm) was used by the patients to grade the severity of pain and burning sensation. Oral Health Impact Profile was used to measure the quality of life which consisted of fourteen item questionnaire. Oral Health Impact Profile measures patient's perception of impact of oral conditions on their health. In each treatment visit and follow up visit, patients were examined for vital signs, assessed for side effects if there were any and condition of oral mucosa was examined for any atrophy,

dermatitis, dysplasia, telangiectasia or viral/fungal infection. Primary outcome was measured by the difference of severity of pain by visual analogue scale at two months from baseline. Oral Health Impact Profile, clinical score and occurrence of side effects were the secondary outcomes measured at each treatment and follow up visit. Computer software SPSS version 23 was used to analyze the data. Data obtained at the end of the treatment in the form of visual analogue scale score, oral health impact profile scores and clinical scores, was compared with baseline scores. Chi square and T test was applied to find out the associated significance variables among the groups.

RESULTS

Overall, there were 100% (n=36) patients; the study population was subdivided into two groups; group A (Pimecrolimus) and group B (Triamcinolone). The mean age, disease duration, VAS pain score, OHIP score and clinical score of the patients in group A was 44.50±6.20 years, 10.61±6.26 days, 5.72±2.32, 3.27±1.17 and 2.38±1.03 respectively, while the mean age, disease duration, VAS pain score, OHIP score and clinical score of the patients in group B was 45.72±5.35 years, 16.77±5.49 days, 6.77±1.43, 3.5±1.42 and 2.83±1.15 respectively. There were 11.1% (n=2) males and 88.9% (n=16) females, in group A, and 33.3% (n=6) males and 66.7% (n=12) females, in group B. Morphologic subtype (Erosive/Cerative) noted as 61.1%, Erythemaous/atrophic 16.7% and Morphologic subtype (Reticular) noted as 27.8%, in group A. While, in group B, Morphologic subtype (Erosive/Cerative) noted as 72.2%, Erythemaous/atrophic 5.6% and Morphologic subtype (Reticular) noted as 33.3%. The baseline characteristic of the 36 patients is shown in table 1. Upon statistical analysis, no significant statistical differences were found between under study treatment groups, in regard to disease characteristics before the start of the treatment and demographics, except disease interval (p=0.004).

Summary of intention to treat result and per protocol for VAS score, OHIP score and clinical score has been demonstrated at the interval of 1 month, 2 months and 4 months in each group respectively in table no. 2. The mean VAS pain score after 1, 2 and 4 months, in group A, was 5.33±1.37, 3.83±1.29 and 3.22±1.39 respectively, while the mean VAS pain score after 1, 2 and 4 months, in group B, was 6.72±1.32, 5.33±1.28 and 4.0±1.57 respectively. The mean OHIP score after 1, 2 and 4 months, in group A, was 1.20±0.90, 2.10±1.42 and 1.45±1.03 respectively, while the mean OHIP score after 1, 2 and 4 months, in group B, was 1.26±1.04, 2.41±1.23 and 1.45±1.08 respectively. The mean clinical score after 1, 2 and 4 months, in group A, was 0.31±0.18, 0.95±0.36 and 0.58±0.44 respectively while the mean clinical score after 1, 2 and 4 months in group B was 0.31±0.16, 0.79±0.23 and 0.51±0.53 respectively. There was significant difference between groups on the basis of VAS score, OHIP score and Clinical score. Reason for similar results in regarding per protocol and intention to treat analysis was that all the patients attended their 2nd visit at the end of the 1st month.

Table No.1: Baseline characteristics of study population in two treatment groups

Variable	Group A Pimecrolimus	Group B Triamcinolone	Test of Sig.
Age	44.50±6.20 years	45.72±5.35 years	t = -0.633 p = 0.531
Gender	M=11.1%, F=88.9%	M=33.3%, F=66.7%	χ^2 = 2.571 p = 0.109
Morphologic subtype (Erosive/ Cerative)	Yes= 61.1% No= 38.9%	Yes= 72.2% No= 27.8%	χ^2 = 0.50 p=0.480
Erythemaous / atrophic	Yes= 16.7% No= 83.3%	Yes= 5.6% No= 94.4%	χ^2 = 1.125 p = 0.289
Morphologic subtype (Reticular)	Yes= 27.8% No= 72.2%	Yes= 33.3% No= 66.7%	χ^2 = 0.131 p = 0.717
Disease Duration	10.61±6.26 days	16.77±5.49 days	t= -3.138 p = 0.004
VAS pain Score	5.72±2.32	6.77±1.43	t= -1.64 p = 0.110
OHIP Score	3.27±1.17	3.5±1.42	t= -0.150 p = 0.613
Clinical Score	2.38±1.03	2.83±1.15	t= -1.217 p = 0.232

Table No.2: Comparison of the efficacy end points (change from baseline data at each month of the trial), per protocol analysis

Variable	Group A Pimecrolimus	Group B Triamci-nolone	Test of Sig.
Vas Score Pain			
Moth 1, Mean±S.D	5.33±1.37	6.72±1.32	t= -3.09 p = 0.004
Moth 2, Mean±S.D	3.83±1.29	5.33±1.28	t= -3.49 p = 0.001
Moth 4, Mean±S.D	3.22±1.39	4.0±1.57	t= -3.01 p = 0.005
OHIP Score			
Moth 1, Mean±S.D	1.20±0.90	1.26±1.04	t= -0.170 p = 0.866
Moth 2, Mean±S.D	2.10±1.42	2.41±1.23	t= -0.699 p = 0.489
Moth 4, Mean±S.D	1.45±1.03	1.45±1.08	t= 0.000 p = 1.0
Clinical Status Score			
Moth 1, Mean±S.D	0.31±0.18	0.31±0.16	t= 0.095 p = 0.925
Moth 2, Mean±S.D	0.95±0.36	0.79±0.23	t= 1.572 p = 0.125
Moth 4, Mean±S.D	0.58±0.44	0.51±0.53	t= 0.473 p = 0.639

DISCUSSION

Corticosteroids remain first line therapy for symptomatic oral lichen planus, despite of various treatment options, because oral lichen planus is a kind of autoimmune disorder and also because of its effect on connective and epithelial tissues[12]. Topical triamcinolone acetonide has a local anti-inflammatory action and it acts by suppressing T-cell activity[13]. As a result of new searches, a topical immunomodulator i.e. pimecrolimus, with fewer steroids like side effects has been introduced[14]. That is why in this study, pimecrolimus is used to treat symptomatic oral lichen planus.

Lichen planus represents a cell-mediated immune-logical response to a change in the antigen of the mucosa of susceptible individual. That's why immunomodulators and immunosuppressants are used for its treatment. According to the previous studies, use of such agents in oral lichen planus was reported to be efficient and associated with very low number of adverse effects. But reoccurrence was common among the patients after stopping the treatment. Pimecrolimus is a drug of macrolactams group of immunosuppressants just like tarcolimus, which act by T-cell inhibition through calcineurin pathway and inhibition of many other immune related cytokines, thus prevent multiple inflammatory signals. Triamcinolone is more popular in its use for oral lichen planus and previous studies provide solid evidence regarding its efficacy in the treatment of oral lichen planus. Triamcinolone acetonide paste although is preferable to cream and ointment based treatment modalities for lichen planus, there are reports which show that many patients feel uncomfortable with its sticky sensation.

Pimecrolimus is an ascomycin derivative and is a novel drug in dermatologic therapeutics. It was specifically developed to treat inflammatory skin diseases and is one of the drugs in newer classes of immunomodulating macrolactams[15]. The efficacy of pimecrolimus was confirmed after finding its usefulness in treatment of atopic dermatitis and allergic contact dermatitis. Pimecrolimus 1% cream is tolerable and safe even after its repeated topical application in patients with atopic dermatitis as compared to corticosteroids, as it does not result in skin atrophy. The reasons behind substantial interest in pimecrolimus are its considerable anti-inflammatory activity, low systemic immune-suppressive risk and higher immunomodulatory effects[16].

In some studies like by Swift et al[13] Pedraza et al.[17] Taebunpakul et al.[18] Passerron et al[19] Volz et al[20] and McCaughey et al[21] pimecrolimus has shown considerable improvements in all clinical parameters, where it was compared with placebo and showed superior results.

CONCLUSION

According to our study there is significant difference between the efficacy of pimecrolimus cream and triamcinolone acetonide paste, when used for treatment of symptomatic OLP with pimecrolimus cream scoring better than triamcinolone acetonide paste.

Author's Contribution:

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Data Analysis:	Ayesha Shakeel, Maryam Ali Shaheen
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Original Article

Improper Clinical Diagnosis and Irrational Laboratory

Evaluation of Patients with Improper Clinical Diagnosis and Irrational Laboratory Workup, an Experience of 50 Cases at a Tertiary Care Facility Hyderabad, Sindh

Shamsuddin Solangi[1], Saima Jatoi[1], Adnan Bawany[1] and Hussain Bux Kolachi[2]

ABSTRACT

Objective: To evaluate improper clinical diagnosis and irrational laboratory tests.
Study Design: Observational / cross sectional study
Place and Duration of study: This study was conducted at the Department of Medicine, Isra University Hospital Hyderabad from June 2016 to May 2017.
Materials and Methods: Sample size 50 cases. Informed consent was obtained from all patients enrolled. A proforma was designed and filled for each patient.
Results: In our study gender distribution of the patients in the study population, males 35(70%) and females 15(30%). Mean age of males 43.57 years and of females 34 years, age range from 16 to 85 years. Clinical evaluation of patients was performed by physician. Out of 50 patients, incorrect history and examination in 43 (86%) and correct history and examination in 7 (14%). Lab evaluation of patients with rational and irrational tests was carried out. Out of 50 patients irrational labs were 38 (76%) and rational labs were 12 (24%), out of irrational Widal 17 (34%), Typhidot 13(26%), and Others 8(16%).
Conclusion: This study has identified simple ways of evaluation of patients (proper history, examination and relevant laboratory workup). This can be used as guidelines for medical practitioner to treat the patients in their settings.
Key Words: Assess**,** Patient, Diagnosis, irrational, Tests, Typhoid. Guidelines.

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INTRODUCTION

Recalling back to medical training, it was taught by the teachers that it is important to treat the patient and not the laboratory test. With the advancement of medical technology, it appears that this concept is vanishing. First and foremost is proper history and examination of patient. This study uses an example to highlight the importance of proper clinical evaluation and the management of patient accordingly.

It is very important for all primary care physicians to appreciate that the most important clinical features which can lead to proper assessment and further management of patient. A diagnosis is formed on the basis of various clinical findings, and rational laboratory tests.

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Each one of these clinical facts has a certain importance and can establish the diagnosis even when laboratory tests are completely normal [1-4]

At general practitioner level and even at tertiary care facility in developing countries like Pakistan, patients are neither properly clinically assessed nor rational laboratory work up is carried out[6-13,] It is a fact that sometimes we need help from advanced medical technology or health information technology to avoid delayed, missed or incorrect diagnosis which helps to establish diagnosis and in cure of patients.[14-20]

This study has documented 50 cases belonging to Hyderabad Sindh and surrounding rural area. These patients were challenging but almost settled their symptoms by paying attention to their clinical presentation and proper laboratory tests. Isra is University hospital with 600 beds capacity established in1997.

MATERIALS AND METHODS

It is a observational / cross sectional study conducted at Medicine department of Isra University Hospital Hyderabad from June 2016 to May 2017. Sample size 50 cases. A proforma was designed and filled for each patient.

Inclusion Criteria:
1. Age 16 years or above,
2. Willing for participation.

Exclusion Criteria:
1. Age below 16 years,
2. Not willing for participation.

Informed consent was obtained from all patients. Proper clinical (history and examination) assessment was performed and relevant laboratory workup carried out in outpatient medicine clinics.
Data was analyzed on SPSS version 21.

RESULTS

Fig. 1 Pi chart shows gender distribution of the patients in the study population, males 35(70%) and females 15(30%).
Fig 2 Bar chart shows age distribution in the study population, mean age of males 43.57 years and of females 34 years, age range from 16 to 85 years.
Table 1shows clinical presentation of patients, out of total 50 patients with very common presentation were 36 (72%) and of the rare presentation were 2 (4%) the remaining were common and uncommon (7% and 5% respectively).
Table 2 shows clinical (history and examination) evaluation of patients performed by physician. Out of 50 patients, physician found incorrect history and examination in 43 (86%) and physician found correct history and examination in 7 (14%).
Table 3 shows Patients with rational and irrational laboratory tests. Out of 50 patients irrational labs were 38 (76%) and rational labs were 12 (24%), out of irrational Widal 17 (34%), Typhidot 13(26%), and Others 8(16%).
Patients treated in the tertiary care hospital, out of 50, the 15(30%) cases were given treatment from outdoor clinics and the 35 (70%) patients were treated as indoor patients.
Table 4 shows treatment out come with standard (routine) treatment in 20 patents, fully recovered 10 (50%) partially recovered 9 (45%) and no response to treatment 1 (5%).

Table No.1: Clinical presentation of patients (n= 50)

Symptoms	Number of patients	%
Very common	36	72
Common	7	14
Un common	5	10
Rare	2	4

The EMA (the European drug regulatory agency)[5]

Table 5 shows outcome with innovative (interventional) treatment in30 patients of the 24 (80%) recovered fully, 6 (20%) recovered partially and no response in 0 (0%).
It also shows viral hemorrhagic fever 4 out of 50 cases 1(2%) was Crimean – Congo Hemorrhagic fever and 3(6%) were other viruses (2 Dengue +1 unknown).
It also shows communicable and non-communicable disease of the 4(8%) cases were communicable and 46(96%) were non – communicable.

Table No. 2: Clinical (History and Examination) evaluation of patients performedby physicians (n = 50)

Evaluation	Number	%
Physician found Incorrect history and examination	43	86
Physician found Correct history and examination	7	14

Table No.3: Showing patients with rational and irrational laboratory tests (n = 50)

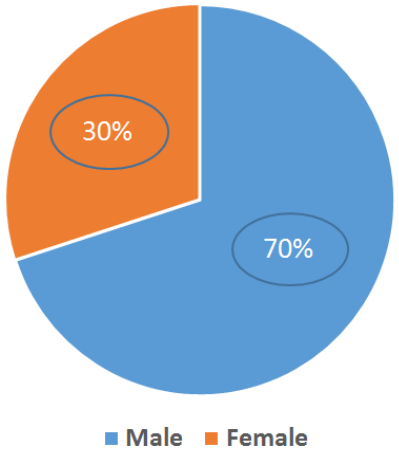
Evaluation	Number	%
Rational Labs	12	24
Irrational Labs:	38	76
Widal	17	34
Typhidot	13	26
Others	8	16

Table No.4: Treatment outcome with standard (routine) treatment (n= 20)

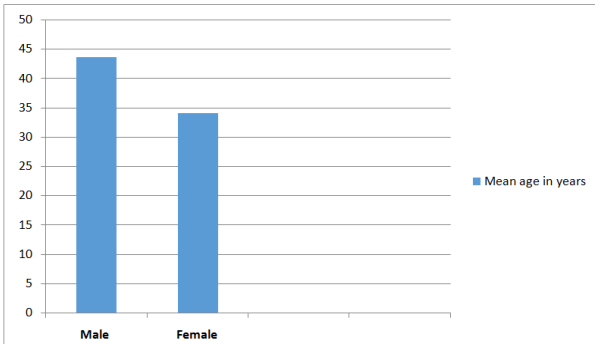
Response	Number	%
Fully recovered (cured)	10	50
Partially recovered (improved)	9	45
No response	1	5

Table No. 5: Treatment outcome with Innovative / Interventional treatment (n= 30)

Response	Number	%
Fully recovered (cured)	24	80
Partially recovered (improved)	6	20
No response	0	0



Pie chart of gender distribution of the study population (n=50)



Bar chart of age distribution of the study population (n=50)

DISCUSSION

In our study common incorrect clinical (History and examination) assessment in majority of patients, as well as irrational laboratory workup. We found incorrect history and examination in 86% patients and correct history and examination in14% patients. Our study found patients with rational and irrational laboratory tests. Out of 50patients irrational laboratory tests were 76% and rational labs were 24%. Among irrational tests Widal 34%, Typhidot 26%, and Others 16%.

In other studies done in Pakistan Karachi, northern Ethiopia, USA, UK, most findings were consistent with our study [4, 7, 8-18] i.e. incorrect clinical assessment and irrational laboratory tests were documented in these studies similar to our study however some studies in Hong Kong and UK showed use of advanced medical technology to establish correct diagnosis to cure the patient. Inconsistent studies were [19, 20]

CONCLUSION

This study has identified simple ways of evaluation of patients (proper history, examination and relevant laboratory workup). This can be used as guidelines for medical practitioner to treat the patients in their settings.

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Original Article

Arthroplasty of Temporomandibular Joint Ankylosi By Autogenious Tissue Versus Alloplastic Material

Fazal Dad and Asma Uppal

ABSTRACT

Objective: To compare the post operative late outcome of the temporomandibular joint arthroplasty of two different surgical procedures, arthroplasty by autogenous and alloplastic material.

Study design: Comparative study.

Place and Duration of Study: This study was conducted at the Maxillofacial Surgery Unit, Mayo hospital / King Edward Medical College, Lahore from 1st January 2003 to 31 Dec. 2003.

Materials and Methods: the study was conducted in the oral and maxillofacial surgery department Mayo hospital Lahore. Thirty TMJ ankylosis patient were divided into two equal groups, group A and group B. group A fifteen patient underwent TMJ arthroplasty with autogenous tissue. While group B fifteen patient TMJ arothroplasty was done with alloplastic material, post operative complications are recorded at each follow up visit.

Results: In group A there were five male and ten female patient. In group B there were six male and nine female patients. mean age group A was 14.2+_ 4.858. while in group B mean age was 14.867+- 4.47 years. There was no statistical difference in age of two groups (P=723). After one year of follow up. There is no post operative complication in group A while in group B three patients had recurrence due to foreign body reaction. Who had to be re-operated.

Conclusion: arthroplasty of temporomandibular joint with autogenous tissue should be preferred in the patient of temporomandibular joint ankylosis as compared to arthroplasty of temporomandibular joint with alloplastic material.

Key Words: temporo mandibular joint, ankylosis, interpositional arthroplasty

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INTRODUCTION

The jaws have been frequently referred to as area of surgical romance because of the complexity of the disease entities they contain and challenges that they pose to the surgeon to correctly diagnose and to effectively treat the prevailing ailment.

Temporo mandibular joint (TMJ) is the only synovial joint in the maxillofacial religion, rest are all sutures and fissures[1.] temoromandibular joint is the part of the stomatognathic system. Any factor influencing this system will affect the function of the TMJ, resulting into hypo or hypermobility[2]. the factor influcing the TMJ are numerous but one condition, temporomandibular joint ankylosis is taken into consideration in this study.

Tempormandibular joint TMJ ankylosis is an intra articular condition, where there fusion of the articular surfaces of the joint i.e; condyle of the mandible with the glenoid fossa resulting in the chronic hypo mobility or immobility. TMJ ankylosis is one of the common disorders affecting TMJ. Those aliment of TMJ is an affliction which occasions much misery for unfortunate victims interfering with mastication, digestion, denying the body from the benefits of a balance diet, speech appearance and oral hygiene. If the condition develops in the childhood facial deformity brings psychological stress, which adds to physical handicap, thus disrupting family life and creating emotional disturbances. [3]

The management of TMJ ankylosis poses significant challenges because of the technical difficulties and high incidence of recurrence.[4] the treatment of ankylosis is not only surgery but it has to be supplemented by post surgical rehabilitation. The surgical modalities include gap arthrplasty, interpositional arthroplasty, and arthroplasty with costochondral[5.] Among the above mention autogenous interposition tissues temporalis muscle flap is very effective method of preventing recurrence of ankylosis, as alloplastic materials have not all stood the test of time.[6] different alloplastic interpositional materials used in various studies includes, silastic, glenoid fossa implant[7], acrylic spacer, Teflon, total joint prosthesis[8]

The use of alloplastic or autogenous tissue, in the temporomandibular joint arthroplasty remains controversial in the history of oral and maxillofacial

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surgery. The initial search for artificial replacement of joint by alloplast once considered as paramount solution to the temporomandibular joint ankylosis. In this regard the attempt by Gluck with Ivory prosthesis a century ago and use of vatalium fifty years back are notable.[9] A century of experience does not look as kindly on the application of alloplastic material to TMJ maladies. Hence the controversy of autogenous and allopastic material is still unresolved and needs further work in the reconstruction of temporomandibular joint[10].

Arthroplasty the creation of an artificial joint for restoration of TMJ movement in the patients with ankylosis was first described by Barton of philadeiphia in 1826[11.] He cut through the neck of condyle to mobiles the jaw having TMJ ankylosis. Humhrey in England bottini in turin[12] and little in new york used the same technique for the release of TMJ ankylosis.henny 1969 recommended that silicon sheet could be used after condylectomy as an interpositional material. After 3 years ll patients demonstrated normal joint space with a slight decrease in motion of condyle but without pain. The potential disadvantages of alloplastic reconstruction relate mainly to wear or failure of the material. Wear particles can generate a giant cell foreign body reaction with potential loosening of the implant, resulting in displacement of occlusal change[13].

Verneuil was the first to use temporalis flaps as an interpositional material in the TMJ ankylosis but significant pain on fumction was documented. Experimental and clinical studies have established a foundation for the use of autogenous material to construct the TMJ. Use of autogenous tissue decreases the likelihood of foreign reaction. The need for temporomandibular joint reconstruction is indicated by the severity of the structural damage to its anatomical components. Such damage result in decrease in mandibular function and in most cases a concomitant loss of anatomic form.

The rehabilitation procedures include the post operative mouth opening. Exercises for stabilization of mouth opening, orthodontic treatment / orthognathic for the correction of dentofacial deformities. The best treatment is always judged with the end. The initiation of treatment of TMJ ankylosis is to release and functional rehabilitation of joint. The study is intended the comparison of post operative complication in TMJ arthroplasty by autogenous and alloplastic material.

MATERIALS AND METHODS

This was a comparative study. Thirty patients were selected amongst those who present in outpatient department with temporomandibular joint ankylosis (unilateral). All the cases in the study were diagnosed treated and followed up from 1st January 2003 to 31 Dec. 2003 at the interval of one month, three month, six month, ninth month and twelve months In the department of the oral and maxillofacial surgery, King Edward Medical college/Mayo Hospital Lahore.

Patients were divided at random in two groups irrespective of sex of patients under study. In group 1, inter positional arthroplasty with autogenous material (temporal fascia) while in group 2 , inter positional arthroplasty with alloplastic material (Sialistic implant) was done. Outcome of both groups along with post operative complication were evaluated and compared between two groups in follow up period. Informed consent from all patients was taken. The patients were ensured about the confidentiality of the information given by them. At each follows up visit complications in terms of infection, hemorrhage, recurrence were checked and recorded.

RESULTS

over a period of fourteen month from 1st January 2003 to 29 February 2004. Total numbers of thirty patients were dealt in which two groups were formed. In group 1 interpositional arthroplasty with autogenous tissue was done while in group 2, interpositional arthroplasty with alloplastic material was done. In group 1 the mean age was 14.2+- 4.47. in group 1 there is predilection of male gender over female with a percentage of 66.67% for male and 33.37% for female in group 1 while in group 2, it was 40% for male and 60% for female, having fifteen cases in each group. In group 1 and 2 , radiographically 100% of cases were proved as temporomandibular joint ankylosis.

In group 1, the preoperative interincisor opening distance ranged between0-5mm. the early postoperative interincisor opening distance ranged between 15-20. The postoperative interincisor opening distance in different patients are shown in table 4. In group 2, the preoperative interincisor opening distance ranged between 0-5mm. the early postoperative interincisor distance ranged between 15-20. The late postoperative interincisor opening distance in different patients are shown in table 2. Post operative interincisor opening distance after one month, there was no statistical difference and it is equal in both groups.

Table No.1: Interincisor opening distance(group 1)

Follow up visits	Mean (mm) +-SD
pre operative	2.33+-2.13
one month postoperative	20.93+-1.03
three month postoperative	23.53+-1.59
six month postoperative	25.60+-1.40
nine month post operative	28.60+-1.40
twelve month postoperative	30.93+-1.03

After thre months again there was no any statistical difference in both groups (p= 0.8) after six months group 2 showed decrease interincisor opening distance in three patients due to this there was statistically significant difference as compared to group 1 (p=.009).

after one year statistical difference was again significant in both groups (P=.0I)

The complication of immediate postoperative facial nerve (zygomatic brach) weakness was seen in one patient in both group i.e 1,2. Fortunately non of the patient had residual facial nerve weakness in subsequent follow up visits. The recurrence rate was 20% (n=3) and it was due to foreign body reaction.

Table No.2: Interincisor opening distance (group 2)

follow up visits	Mean (mm)+-SD
preoperative	2.13+-2.20
1 month postoperatively	20.90+-1.03
3 mont postoperatively	23.33+-1.95
6 month postoperatively	24.13+-2.33
9 month postoperatively	26.67+- 3.99
12 month postoperatively	27.4+-5.38

DISCUSSION

Total number of thirty cases were selected and divided at random in to two groups irrespective of age and sex of patients under study, comprising of 15 cases in each group. Group 1 underwent interpositional arthroplsty with autogenous tissue while interpositional arthroplsty with alloplastic material was done in group 2. The main purpose of this study was to compare the post operative complication in both surgical procedures.

Louis G Mercuri categorized the criteria for success specific to alloplastic implant are

- The material from which the devices are made must be biocompatible.
- The devices must be designed with stand the loads delivered over the full range of function of the joint.
- The devices must be stable in situ.
- The surgery to implant must be performed for the proper indication and must be performed aseptically.

Ryan (1984) at the American Association of oral and maxillofacial surgeons (AAOMS) clinical congress, reported an 89% success rate in 150 patients (185 joints) with silicon, which was wired or sutured to the glenoid fossa and articular eminence. The average follow was 1.5 years.[15] in our study 15 patients treated with autogenous tissue in group 1. 100% obtained relief of symptoms while in group 2 in which 15 patients treated with allopplastic material showed 80 % relief of symptos and infection In 3 patients (20%).

Ortak T, at el, They did the study on 38 patients with TMJ ankylosis in 2001. They documented that in two patients (5.2%) another operation to remove silicon material was needed because of infection and exposure of silicon while one patient was operated on again for limited

mouth opening[14]. In our study 15 patients treated with alloplastic material showed 80% relief of symptom and found a foreign body giant cell reaction around fragments of failed sialistic implant with lymph adenopathy whose biopsy specimen showed foreign body giant cell reaction.

Valentini V, at el in 2002 documented the result of surgical treatment of the TMJ ankylosis over a period of 5 years. They used sialistic material in 11 cases in which implant removal was necessary in 5 cases due to inducement of foreign body granuloma . they declared that the gold standard surgery of TMJ ankylosis today is represented by shaving of articular surfaces and subsequent arthroplasty with or without temporal muscle myofacial flap interposition as the use of sialistic as alloplastic material could be associated to an increased persistence of the local symptoms and a higher risk of foreign body granuloma and it may favour ankylosis, relapse and hinder rehabilitation. In our study sialistic removal was necessary in 3 cases in group2 due to its inducement of foreign body granuloma but our duration was 14 month as compared to above study in which duration was 5 year.

Criteria for temporomndibular joint meniscus surgery were published by American Association of oral maxillofacial surgeons(AAOMS) in 1984. In that publication, the use of alloplastic as interpositional implant was recognized as an acceptable treatment[15].but the potential disadvantages of alloplastic reconstruction relate mainly to wear or failure of the material. Wear particles can generate a giant cell foreign body reaction with potential loosening of the implant, resulting in displacement or occlusal changes.[16]

It was consensus of the workshop on temporo-mandibular joint implant surgery conducted by American Association of oral and maxillofacial surgeons (AAOMS) in November 1992, that permanent placement of silicon as an interpositional material of the temporomandibular joint should not longer be done except when used to prevent recurrence of ankylosis. experimental and clinical studies have established a foundation for the use of autogenous material to reconstruct the TMJ. Use of autogenous tissue decreases the likelihood of foreign body reaction.[17]there was some limitation of our study like small sample size and short duration of study. To further looking to the matter we need large sample size and longer follow up duration to find exactly the late complications and recurrence in these patients.

CONCLUSION

Arthroplasty of TMJ with autogenous tissue should be preferred in the patient of TMJ ankylosis as compared to arthroplasty of temporomandibular joint with alloplastic material due to following conclusion drawm on the basis of this study.

1. Functional rehabilitation result obtained through the use of interpositional arthroplasty with autogenous tissue followed by exercise was better irrespective of the sex of the patient.

2. Post operative complication rate is less in patients undergoing interpositional arthroplasty with autogenous tissue as compared to patients undergoing interpositional arthroplasty with alloplastic material.
3. Recurrence rate is higher in patients undergoing interpositional arthrolasty with alloplastic material as compared to gap arthroplasty with autogenous tissue , but due to small number of cases and short duration of the study it was not possible to ascertain stastically significant difference.

Author's Contribution:

Concept & Design of Study:	Fazal Dad and Asma Uppal
Drafting:	Fazal Dad and Asma Uppal
Data Analysis:	Fazal Dad and Asma Uppal
Revisiting Critically:	Fazal Dad and Asma Uppal
Final Approval of version:	Fazal Dad and Asma Uppal

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Original Article

To Assess Mean Serum Ferritin Level in Preeclamptic Patients

Asifa Khuwaja, Fozia Unar and Anila Rehman

ABSTRACT

Objective: To determine Mean serum ferritin level in preeclamptic patients.
Study Design: Cross sectional study
Place and Duration of Study: This study was conducted at the Obstetrics and Gynaecologic Unit 2, Civil Hospital Dow University of Health Sciences, Karachi from 19-04-2012 to19-10-2012.
Materials and Methods: The study included 200 women who presented with preeclampsia in gynae unit 2, or labour room. Patients who full filled the inclusion and exclusion criteria were included in study.
Results: Out of 200 patients means age in years was found 28.17 years. The mean gestational age in weeks was 32.42, while mean ferritin level was 217.34 which is higher than mean of normal pregnant woman.
Conclusion: It was concluded that mean of serum ferritin level was significantly increased in preeclamptic patients which may present with further complications like preterm delivery, increased risk of IUGR, genital tract infection and unfavourable outcome. Surplus iron is which is considered as casual factor in oxidative stress which in its radical state may be responsible for pathogenesis of preeclampsia. Therefore iron status of pregnant women with risk factors of preeclampsia should be assessed before giving iron supplements as these may cause moreharm than benefit.

Key Words: Serum ferritin, Preeclampsia, Pregnancy outcome.

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INTRODUCTION

Preeclampsia which is one of the most grave and life threatening disorder of human pregnancy.[1] It is multisystem disorder of unknown etiology characterized by symptoms of edema, protenuria and high blood pressure.[2]

Preeclampsia occurs in 6% of general population[3]. Nearly 10-15% of maternal deaths in under developed countries are associated with preeclampsia.[4]

Suspected risk factors are primiparity, maternal age, patients below age of 20 and above 35 yrs, black race, multiple gestations, hyddatiform mole, obesity and underlying renal disease.[5]

Preeclampsia is a disease which is progressive in nature with a different mode of presentation and different rate of progression in each patient.[6]

Hypertention, protienuria, excessive weight gain and edema are the clinical presentation of preclampsia.[7] Others include thrombocytopenia, hyperurecimia, abnormal liver enzymes and hemoconcentration[8].

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Generally 3-7% of pregnancies are complicated with preeclampsia. It results in failure of trophoblast invasion into myometrium and the maternal spiral arteries do not undergo their physiological vasodilation. In numerous studies iron status changes has been privileged as a causative factor for endothelial cell damage of preclampsia and concequences[9-10]. As iron is necessary for all cells but the quantity of iron needed by individual tissues is different for all cells during development. While at the same time body must secure itself from iron free redicals, which are highly toxic. Its perniciousness comes from its tendency to generate free radicals that causes cell damage[11]. This change of iron status is related to increased oxidative stress and endothelial dysfunction. Iron or iron species could be a factor for oxidative stress in preeclampsia. Iron radicals released from placental ischemia by devastation of red blood cells can start the process of lipid eroxidation to cause endothelial cell damage.[9]

In under developed countries, preeclampsia is one of the important cause of maternal mortality[12].

Its assumed that lipid peroxidation play important role in the cause of the disease[13]. Iron and hematin proteins, play important role as accelerator of lipid peroxidation in tissues[14]. Many studies have been carried out thought the world on the etiology of preeclampsia. In these studies alteration of iron status is recognised as a risk factor for pathogenesis of preeclampsia[15].

Its proved in studies that oxidative stress also occurs in preeclampsia.[16] Iron and other transitional metals,

which are exuberant in the placenta, are significant in the generation of free radicals[17]. Greater iron levels in the maternal compartment in preeclampsia could be accountable for oxidative stress in placenta[18]. Ferritin level has probable role in pathogenesis of preeclampsia. Serum ferritin concentration in mother is primarily a observation of maternal, iron status and a raised level has association with unfavorable outcome.[19] However, recent studies have shown that the risk of preterm delivery was increased in women with high second trimester serum ferritin concentration.[20]

Mean of serum ferritin in one of study is 48.33 ng/dl[3]. In physiology of pregnancy serum ferritin is decreased in third trimester of pregnancy as their stores of iron are used because of increased iron demamd in pregnancy and iron is needed by fetoplacental unit. While in preeclampsia elevated serum ferritin is observed in third trimester of pregnancy[21,22].

Increased maternal ferritin level leads to preterm delivery, restricted growth of fetus, unfavorable outcome, preeclampsia and also genital tract infection.[23]

Rationale of this study is to estimate the mean serum ferritin level in preeclamptic patients. If this found to be high than the normal range in these patients then strategy could develop to screen all preeclamptic patients.[24]

MATERIALS AND METHODS

Study was conducted after the approval from ethical committee college of physician and surgeons of Pakistan. Patients who fulfilled the inclusion criteria were enrolled in this study. Informed consent were obtained from all patients after explanation of study protocol. All the data were collected through structured proforma designed for this study. The data regarding age, parity, gestational age were taken. 5cc of blood samples were taken in a serum bottle for estimation of mean serum ferritin. serum ferritin level was estimated through CMIA procedure by using Siemens kit immulite 2000.

RESULTS

A total of 200 preeclamptic patients were selected with gestational age from 24 weeks onward till 42 weeks, admitted at obstetrics department CHK.

Table 1 shows, Out of 200 samples, means age in years was found 28.17 years, with an standard deviation of 5.68 years.

The mean gestational age in week was 32.42 with standard deviation of 4.88 , while the mean ferritin level was 217.34 with an standard deviation of 81.88 .

Preeclamptic patients were taken from all parity groups and most of them were falling in parity more than 4,as shown in table 2.

Table 2 shows, out of 200, most of the samples were at fifth parity , 37 (18.5), while only 24 (12) were found at 1st parity level.

In all age groups samples were taken raised ferritin level was found in age group bw 23-26 yrs as shown in table 3.

Table 3 shows, mean of ferrtin level was higher between age 23 – 26 years, however p-value 0.165 found from ANOVA, using F-test shows, there was no significant difference in mean level at different age groups.

Table shows, mean of ferrtin level was higher at po, parity, however p-value found from ANOVA, using F-test shows, there was no significant difference in mean level at different parity levels of gestational age, with p =0.653

Table 4 shows, mean of ferrtin level was higher between gestational age 31 – 35 weeks, however p-value found from ANOVA, using F-test shows, there was no significant difference in mean level at different levels of gestational age, with p = 0.383

Table 5 shows, mean of ferrtin level was higher at po, parity, however p-value found from ANOVA, using F-test shows, there was no significant difference in mean level at different parity levels of gestational age, with p =0.653

Table No.1: Mean and Standard Deviation of Parameters (n=200)

Parameters	Mean	Standard Deviation	Minimum	Maximum
Age in Years	28.17	5.68	18	38
Gestational Age in Weeks	32.42	4.88	24	40
Ferritin Level	217.34	81.88	85	350

Table No.2: Parity Group

Parity	n	%
Po	32	16.0
P1	24	12.0
P2	31	15.5
P3	21	10.5
P4	32	16.0
P5	37	18.5
P6	23	11.5
Total	200	100.0

Table No.3: Mean of ferritin levels with age group

Age Group	N	Mean	Standard Deviation	p-value
18 - 22 yrs	39	199.21	77.91	0.165
23 - 26 yrs	41	233.98	81.02	
>26 years	120	217.55	82.85	
Total	200	217.34	81.88	

Table shows, Out of 200 samples, means age in years was found 28.17 years, with an standard deviation of 5.68 years.(table 1)

The mean gestational age in week was 32.42 with standard deviation of 4.88, while the mean ferritin level was 217.34 with an standard deviation of 81.88 .

Table shows, out of 200, most of the samples were at fifth parity, 37 (18.5), while only 24 (12) were found at 1st parity level.(table 2)

Table shows, mean of ferrtin level was higher between age 23 – 26 years, however p-value 0.165 found from ANOVA, using F-test shows, there was no significant difference in mean level at different age groups. (table 3)

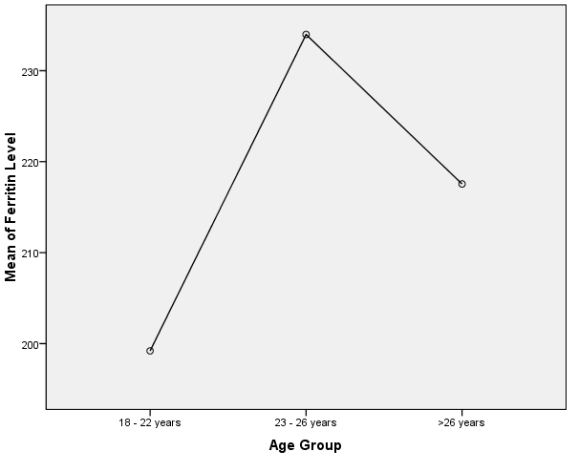

Figure No.1: Mean of ferritin levels with age group

Table No.4: Mean of ferritin levels with gestational age

Gestational Age	N	Mean	Standard Deviation	p-value
24 - 30 weeks	74	207.54	77.514	0.383
31 - 35 weeks	57	227.07	83.864	
>35 weeks	69	219.81	84.799	
Total	200	217.34	81.887	

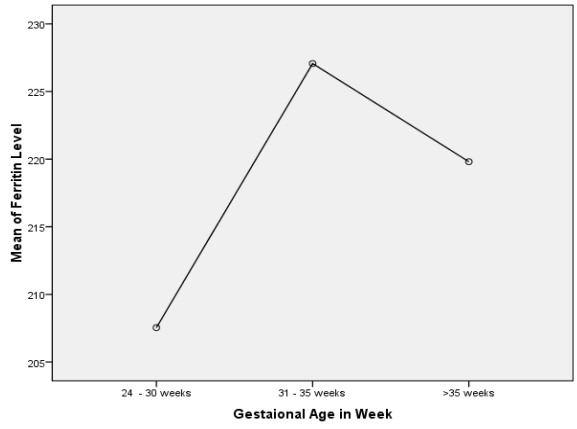

Figure No.2" Mean of ferritin levels with gestational age

Table shows, mean of ferrtin level was higher between gestational age 31 – 35 weeks, however p-value found from ANOVA, using F-test shows, there was no significant difference in mean level at different levels of gestational age, with p = 0.383

Table No.5: Mean of ferritin levels with parity

Parity	N	Mean	Standard Deviation	p-value
Po	32	231.31	87.233	0.653
P1	24	219.92	90.171	
P2	31	207.87	82.281	
P3	21	208.57	79.761	
P4	32	229.69	84.981	
P5	37	200.27	76.565	
P6	23	226.26	73.217	
Total	200	217.34	81.887	

Table shows, mean of ferrtin level was higher at po, parity, however p-value found from ANOVA, using F-test shows, there was no significant difference in mean level at different parity levels of gestational age, with p =0.653

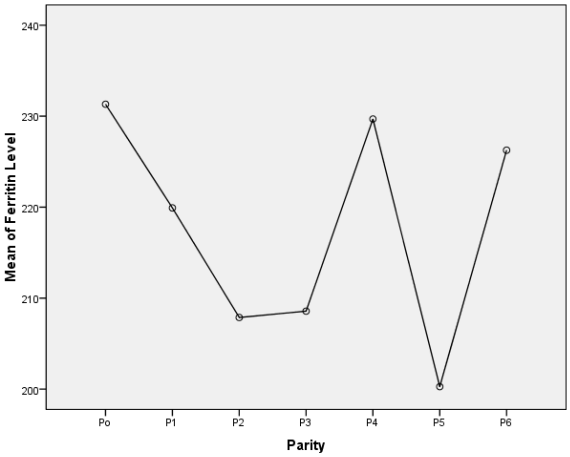

Figure No.3: Mean of ferritin levels with parity

DISCUSSION

Preeclampsia is one of the most important causes of maternal and fetal morbidity and mortality. Spite of huge studies and reaches, exact etiology of this disease is unknown. Metamorphosis of iron binding proteins like ferritin and transferrin, are exceptional in women with preeclampsia. The cause for the high serum ferritin in preeclampsia is undefined. In my study mean of serum ferritin level was seen in preeclamptic pregnant patients at gyne unit II civil hospital Karachi. Mean serum ferritin concentration was raised in preeclamptic patients than the normal range taken 48.33ng/dl.

In the study conducted at Dhaka Medical College from July 2010 to June 2011, It was a case comparison study total hundred women in third trimester of pregnancy were taken. Study showed that mean serum ferritin concentration in cases and controls were 95.06 ± 50.07 ug/l and 45.56 ± 27.44 ug/l respectively.[1] The study

conducted at faridpur medical college it was also case control study. Rational of this study was to appraise the connection of serum ferritin and iron with preeclampsia & eclampsia and its potential role in etiology of pre eclampsia.

In this study mean serum ferritin level in case and control group was 100.03 ± 123.52 µgm/L and 31.53 ± 20.86 µgm/L respectively which is highly significant ($p < 0.001$).

Numerous studies indicates ferritin & iron increases in preeclampsia & eclampsia which have a role as pro-oxidant enhancing lipid per oxidase activity and cause endothelial cell damage. Increased ferritin level has morbific role in development of preeclampsia acting as an acute phase reactant. While decreased ferritin level between 28-30 weeks may be associated with less incidence of preeclampsia.

Rayman et al. in their study showed that there was significant increase in serum iron, ferritin and transferrin saturation and decreased total iron binding capacity in the preeclamptic subjects, than normal controls.[9] Diminished serum feritin concentration indicates iron deficiency anemia, but increased serum ferritin concentration may not be associated with iron overload. Increased serum ferritin level increases blood pressure and aggravates preeclampsia. The excess iron and ferritin may cause endothelial injury by producing free radicals initiating the process of lipid per oxidation. In various studies shows serum iron parameters levels if measured in the earlier weeks of pregnancy may predict occurrence of preeclampsia and poor pregnancy outcome can be prevented to make early diagnosis. Then again iron supplements and increased iron stores have relation to maternal complications e.g. diabities in pregnancy and restricted fetal growth, increased oxidative stress during pregnancy.

So habitual investigation of iron status in women with high risk for preeclampsia & eclampsia should be part of antenatal checkup to establish diagnosis of pre eclampsia before its clinical manifestations and unneeded use of iron in a non anaemic pregnant woman can be stopped.

CONCLUSION

It was concluded mean of ferritin was significantly increased in preeclamptic women which may present with further complications like preterm delivery ,increased risk of IUGR, genital tract infection and unfavourable outcome .surplus iron is casual factor in oxidative stress ie; in radical states which is involved in pathophysiology of preeclampsia. That's why iron status of those pregnant women who are at risk of preeclampsia must be assessed before prescribing iron supplements because this iron may cause more harm than benifit.

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Author's Contribution:

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Revisiting Critically:	Asifa Khuwaja, Fozia Unar
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Original Article

To Assess Perinatal Outcome in Preterm Breech Vaginal Delivery

Preterm Breech Vaginal Delivery

Fozia Unar[1], Samina Rafique Memon[2] and Asifa Khuwaja[2]

ABSTRACT

Objective: To determine the frequency of perinatal outcome in preterm breech vaginal delivery.
Study Design: Descriptive case series.
Place and Duration of Study: This study was conducted at the Department of Obstetrics and Gynecology Unit-1, Civil Hospital, Dow University of Health Science, Karachi from 28.03.2013 to 27.09.2013.
Materials and Methods: A total of 149 pregnant women were selected with gestational age less than 37 weeks confirmed on ultrasound. Information regarding neonatal outcome i.e. preterm with low apgar score, cord prolapse and neonatal mortality was taken.
Results: Frequency of birth asphyxia was the highest is 20.80% (31/149) cases, umbilical cord prolapse rate was observed in 10(6.71%) and prenatal mortality rate was 16(10.73%) cases.
Conclusion: The most common Neonatal outcome in preterm breech vaginal delivery was birth asphyxia followed by neonatal mortality and umbilical cord prolapse. Gestational age ≤30 weeks, primiparous and non-booked cases had severe neonatal outcomes.
Key Words: Apgar score, Preterm delivery, Breech

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INTRODUCTION

Breech presentation occurs in 3-4% of all deliveries. [1] The occurrence of breech delivery decreases with advancing gestational age from 25% of births before 28 weeks gestation to 16% of births at 32 weeks, and 1-3% of births at term.[1]

Preterm delivery with breech presentation is one of the complicated deliveries.[3] It entails the particular risk for fetus.[4] The incidence of cord prolapse is (11.1%)[5] in full term breech but in preterm the prevalence of umbilical cord prolapse is (2.9)[5] in vaginal breech delivery. Similarly head entrapment is about (8.5%)[6] in vaginal breech delivery and more higher in preterm breech. Persistent breech presentation may be associated with abnormalities of baby, excessive amniotic fluid volume and abnormal placental localization.[6] There is higher perinatal morbidity and mortality with breech than cephalic presentation, due to principally prematurity, congenital malformations and birth asphyxia or trauma.

The frequency of cesarean section has increased than vaginal deliveries due to high perinatal mortality and morbidity.[10]

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Some studies reported the prevalence of Umbilical Cord Prolapse (62%)12, Perinatal, Death(38.5%)8, Birth Asphyxia(3.4%)8. However another study reported (7.6%)7,(9.2%) 9,(6.6%)11 prevalence of Umbilical Cord Prolapse, Perinatal Death and Birth Asphyxia respectively.

Most common problem with breech deliveries is birth asphyxia leading to low apgar score.[5,8] Overall neonatal mortality in preterm breach vaginal delivery was higher 18.2% in a retrospective study of 88 live born preterm infants with breach presentation. The risk of neonatal mortality due to prematurity is always higher specially with low birth weight infant.[5,8-9] The mortality is also very high in preterm breach delivery as compared to preterm vertex delivery.[9-10] The frequency of cesarean section increase than vaginal deliveries due to high perinatal mortality and morbidity.[9] Establish risk for breech presentation are prematurity, congenital foetal abnormalities, multiple pregnancy, acquired defects of uterus i.e. (low lying placenta or fibroid especially over lower uterine segment) and rarely congenital uterine defects (i.e. bicornuate uterus).[10-15]

Most obstetricians in Sweden followed the recommendation that breech vaginal delivery should be attempted only if the following conditions are met: gestational age is more than 34 completed weeks, estimated fetal weight (by ultrasound) is more than 2000 grams but less than 4000 grams and pelvic size considered adequate after pelvimetry.[16] Diagnosis of breech presentation for the first time during labour is not a contraindication of vaginal breech delivery.

Various studies, which are being carried out in different settings, fail to make a single consensus regarding

safest mode of delivery for breech presentation. Despite this in units where planned vaginal delivery is a common practice and when strict criteria's are met before and during labour, planned vaginal breech delivery of singleton foetuses at term remains a safe option that can be offered to women [17,18].

All the available literature stressed the importance of adhering to an appropriate protocol when assessing women for vaginal breech delivery.[19] Close consultation with the mother and partner and counciling about the implications of the choice of vaginal breech delivery verses cesarean section is important.[20]

MATERIALS AND METHODS

The data collection started after an approval from the College of Physician & Surgeons Pakistan. The study was performed using data from descriptive case series, conducted in the Department of Obstetrics & Gynecology Unit 1 Civil Hospital Karachi. Inclusion criteria are, All patients admitted in obstetrics department with gestational age <37 weeks (confirmed on ultrasound),All patients admitted in obstetrics department with gestational age <37 weeks (confirmed on ultrasound),Age 20 to 40 years, All singleton and multiple preterm breech vaginal deliveries (confirmed on ultrasound).Exclusion criteria are, Gestational age less than 28 weeks, Pregnancy with any medical and obstetrical disorder that is eclampsia, preeclampsia, diabetes, APH, Heart disease and Hypertension.

RESULTS

A total of 149 pregnant women were selected with gestational age < 37 weeks confirmed by ultrasound and they were admitted in obstetric department in hospital. The average age of the patients was 29.96 ± 3.80 years .Similarly the average gestational age of the women was 33.29±4.75 weeks . Regarding parity status, women, 65(43.%) multiparous was observed, followed by grand multiparous (parity >5) who were observed in 45(30.10%) . Out of 149 pregnant women 89 (60%) delivered male baby and 60 (40%) delivered female baby as shown in (figure 1) Similarly 67 (45%) were booked and 82(65%) were un-booked cases (figure 2).

Perinatal outcome in preterm breech vaginal delivery is shown in table 1. Birth asphyxia was found in 20.80% (31/149) cases, umbilical cord prolapsed rate was observed in (10/149) cases 6.71% and perinatal mortality rate was detected in (16/149) cases (10.73%).

Stratification of neonatal outcome in preterm breech vaginal delivery with respect to age group is shown in table-2. Birth asphyxia was observed in 15 (22.38%) in age group of 26-30, umbilical cord prolapsed 6 (10.16%) in age group of 31-35 and neonatal mortality was 12 (17.91%).

Stratification of neonatal outcome in preterm breech vaginal delivery with respect to gestational age group 19 (31.66%) was found to be birth asphyxia and 9 (15%) had mortality in age group of 24-32, 6 (10%) were in umbilical cord prolapsed in age group of 33-36 showing table 3. Similarly in apgar score shows 18(19.14%) had birth asphyxia and 9(9.57) had perinatal mortality and 7(7.44%) had umbilical cord prolapse.

In gender wise stratification birth asphyxia 16(26.66%) and mortality 10(16.66%) were found in male babies and umbilical cord prolapse was found in 6(6.74%) in female babies.

82 women had recurrent breech vaginal delivery out of it birth asphyxia was mostly observed in 23(28.84%) neonates, similarly 67 women had singleton delivery out of these birth asphyxia also observed mostly 8(11.94%) as shown in table 4.

With respect to booking status, birth asphyxia was mostly observed in both booked and un booked women i.e 12(17.91%) and 19(23.17%).

Table No. 1: Frequency of neonatal outcome in preterm breech vaginal delivery (n=149)

Pernatal Outcome	Frequency	%
Birth Asphyxia	31/149	20.80%
Umbilical Cord Prolapsed	10/149	6.71%
Perinatal Death	16/149	10.73%
Total	**57**	**38.27%**

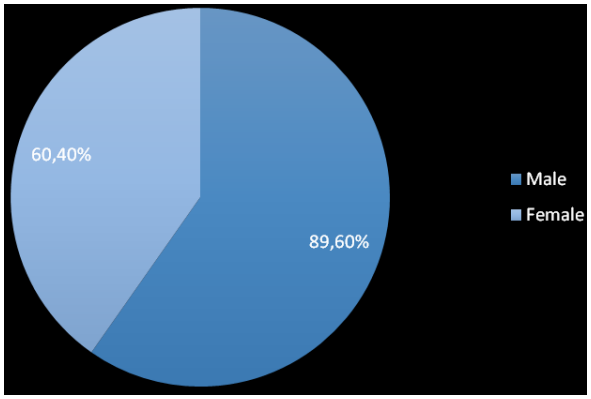

Figure No.1: Gender Distribution of Baby (n=149)

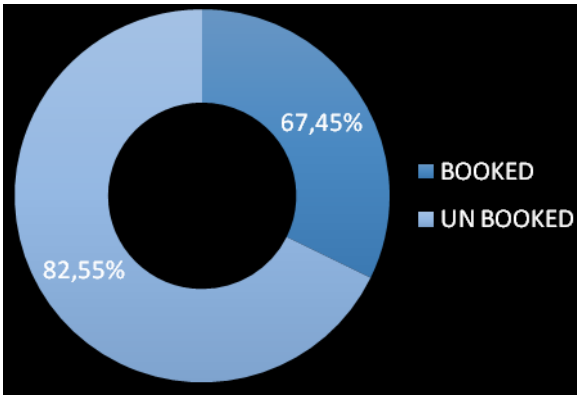

Figure No.2: Distribution of booking status (n=149)

Table No. 2: Stratification of neonatal outcome in preterm breech vaginal delivery with respect to age groups (n=149)

Age Groups	N	Birth Asphyxia	Umbilical Cord Prolapsed	Perinatal Mortality	P-Value
20-25	15	3(20%)	1 (6.66%)	1 (6.66%)	0.407
26-30	67	15 (22.38%)	3 (4.47%)	12 (17.91%)	0.10
31-35	59	12 (20.33%)	6 (10.16%)	3 (5.084%)	0.033
36-40	8	1 (12.5%)	0 (0%)	0 (0%)	0.352
Total	149	31 (20.80%)	10 (6.71%)	16 (10.73)	

Table No. 3: Stratification of neonatal outcome in preterm breech vaginal delivery with respect to gestational age groups (n=149)

Gesta-tional Age Groups	N	Birth Asphyxia	Umbilical Cord Prolapsed	Perinatal Mortality	P-Value
24-32	60	19 (31.66%)	6 (10%)	9(15%)	0.006
33-36	47	10 (21.27%)	3 (6.38%)	5 (10.6%)	0.083
37-42	42	2 (4.76%)	1 (2.38%)	2 (4.76%)	0.812
Total	149	31 (20.80%)	10 (6.71%)	16 (10.73%)	

Table No. 4: stratification of neonatal outcome in preterm breech vaginal delivery with respect to breech vaginal delivery (n=149)

Breech Vaginal Delivery	N	Birth Asphyxia	Umbilical Cord Prolapsed	Perinatal Mortality	P-Value
Singleton	67	8 (11.94%)	2 (2.98%)	3 (4.47%)	0.078
Multiple	82	23 (28.84%)	8 (9.75%)	13 (15.85%)	0.008
Total	149	31 (20.80%)	10 (6.71%)	16 (10.73%)	

DISCUSSION

In our study the total of 149 pregnant women were selected ,the mean age and gestational age of the women were 29.96 ± 3.80 and 33.29±4.75 years respectively.

This was a prospective study, performed on 88 live-born preterm infants with breech presentation. The neonatal mortality (NNM) was 18.2%, and 13.3% after diagnosis for congenital malformations incompatible with life. 62.5% were delivered vaginally, and 37.5% by cesarean section. In spite of the fact that most cesarean sections were done for indications associated with increased fetal and neonatal morbidity and mortality, overall morbidity was comparable in the two groups. Mortality was higher in the vaginal group. Entrapment of the fetal head (7.3% of vaginal deliveries) and prolapse of the cord (4.5%) were the major complications of preterm breech delivery. The author considers these results in favor of routine cesarean section in preterm breech presentation48 ,Whereas in our study we only looked for birth asphyxia (17.6%), umbilical cord prolapse (5.9%) and perinatal mortality (11.8%).

In population based cohort study from the Medical Birth Registry of Norway comprising all singleton deliveries 1967-1994, a total of 1,592,064 deliveries. Of these, 45,921 were vaginal breech presentation. The breech presentation proportion increased from 2.2% (95% CI 2.1-2.3) to 3.4% (95% CI 3.2-3.5). It was mainly due to demographic changes in terms of increasing proportions of births with low birth order and high maternal age. Breech presentation was most frequent in urban areas.9 Strong associations were observed between breech presentation and low birth order as well as high maternal age.9 The findings are compatible with both intrinsic as well as environmental mechanisms. Proper selection of cases for vaginal delivery, vigilant intrapartum monitoring and proper technique of breech delivery have been established as the most important determinant for successful outcome in vaginal breech delivery without compromising fetomaternal wellbeing and curtailing the cesarean section rate done for the malpresentation.

A studywas conducted in the department of Obstetrics &Gynecological unit-I, Bahawal Victoria Hospital Bahawalpur to assess the various factors associated with breech delivery at term. This case control study was carried out in women with the age group 20-40 years. Various risk factors (Parity, multiple pregnancy, placenta Previa, amount of liquor and congenital abnormalities) associated with breech (50 cases) at term (37-42 completed weeks) were compared with vertex (50 controls).Different factors associated with breech presentation were oligohydramnios 44%, placenta previa 34%, primiparity 46%, multiple pregnancy 14% and congenital abnormalities 18%.47 Careful monitoring of these factors should be undertaken to minimize breech delivery thereby reducing the adverse neonatal outcome.

In our study Birth asphyxia 31(2.080), Umbilical cord prolapse 10(6.71%) and Perinatal mortality were 16(10.73%).

The strengths of our study were scientific and systematic calculation of sample size, inclusion and exclusion criteria. We also perform stratification at the analysis to control for con founders and effect modifiers. Strength of our study was use of purposive sampling best suited for our study design and sample selection, as our inclusion and exclusion criteria was stringent. The use of objective definitions for predictor

and outcome variable also minimizes the source of bias in our study.

CONCLUSION

The most common Neonatal outcome in preterm breech vaginal delivery was birth asphyxia followed by neonatal mortality and umbilical cord prolapse. Gestational age ≤30 weeks, Primiparous and non-booked cases had severe neonatal outcomes.

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Data Analysis:	Asifa Khuwaja
Revisiting Critically:	Samina rafique Memon
Final Approval of version:	fozia Unar

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

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Original Article

Frequency of Various Risk Factors for Meconium Aspiration Syndrome

Mohsin Ejaz[1], Amal Ejaz[2], Muhammad Mubasher Muavia[2] and Aamir Furqan[2]

ABSTRACT

Objective: To study the frequency of various factor leading to meconium aspiration syndrome.
Study Design: Descriptive / Cross sectional study.
Place and Duration of Study: This study was conducted at the Department of Pediatrics Medicine Nishtar Hospital Multan from October 8, 2016 to April 8, 2017.
Materials and Methods: The non-probability, consecutive sampling technique was used. Newborns having staining of vocal cords and respiratory distress were included in this study. ABG and X-ray Chest was done in all neonates. Factors like, Post-term pregnancy, IUGR, thick meconium, low APGAR score at 1 and 5 minutes were noted. All the collected data was entered and analyzed on SPSS version 23. Chi square and T test were used to check significant relation of risk factors with meconium aspiration syndrome. P value of <0.05 was consider significant.
Results: Among total enrolled 150 babies, the mean age of babies was 37.37±18.96 hours, the male to female ratio of the babies was 1.03:1. The mean maternal age was 28.85±6.602 years. The thick meconium was observed in 89(59.33%) patients, 79(52.7%) patients went through vaginal delivery, postdate pregnancy was noted in 68(45.3%) patients, IUGR was observed in 52(34.7%) patients and poor APGAR score at 1 min was noted in 79(52.7%) patients.
Conclusion: The observations of our study revealed that Meconium aspiration syndrome has significant relation with maternal age(P value 0.000), postdated pregnancy (P Value 0.001), IUGR (P value 0.021), poor APGAR score at 5 minutes(P value 0.034), and thick meconium (P value 0.000).
Key Words: Postdate, Meconium Aspiration, Syndrome, APGAR (Appearance, Pulse, Grimace, Activity, and Respiration), Pregnancy

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INTRODUCTION

Significant morbidity and mortality has been observed with meconium aspiration syndrome.[1-3] One of the major causes of respiratory distress in term infants is meconium aspiration syndrome having incidence of 1.5 per 1000 live births.[2] The passage of meconium in-utero predisposes an infant to meconium aspiration and has been observed in 10-20% of term deliveries and incidence is even higher in post-term infants2'3'6.[2-4]
Incidence of Meconium aspiration syndrome is lesser in pre-term deliveries. Recent literature showing reduction in mortality rate which is less than 15% appears to be associated with reduction in meconium aspiration syndrome owing to changes in obstetrical practices.[2]
The risk of meconium aspiration syndrome in an infant born with meconium stained amniotic fluid is amniotic fluid and presence of meconium in airways at delivery. From these risk factors asphyxia is the most important risk factor.[2,5]
Clinical features of meconium aspiration syndrome include respiratory distress within two hours of birth in an infant with meconium stained amniotic fluid, tachypnea and cyanosis. Chest auscultation shows inspiratory crepitations.[6,7] Chest X-rays reveals variable atelectasis and patchy opacifications with areas of hyperinflation. Blood gases show hypoxemia often accompanied by hypercarbia.[2]
Complications of meconium aspiration syndrome include pneumonia, persistent pulmonary hypertension, interstitial emphysema and pneumothorax.[8] 15-30% cases show pneumothorax'. There is a difference in outcome in patients with meconium aspiration syndrome in developing countries and those in developed countries and factors associated with poor outcome in developing countries include poor monitoring during labor and low APGAR scores'.[9] There is limitation in assessing the outcome of meconium aspiration syndrome in developing countries these limitations are due to limited resources.[1]
In a study, neonates developing meconium aspiration syndrome secondary to meconium stained amniotic fluid were studied. The results of this study showed various risk factors for meconium aspiration syndrome

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which are: vaginal delivery (60%) / C-section (40%), post-maturity (48%), Intra-uterine growth retardation (26%), 1 mm. low APGAR score (70%), 5 mm. low APGAR score (20%), thick meconium (69.7%) / thin meconium (36.4%). Another study showed the incidence of these and some other risk factors leading to MAS in children with MSAF and showed similar results.[3]

As the incidence of meconium aspiration syndrome in developing countries is high and no significant and local data is available to assess various risk factors for meconium aspiration syndrome so the rationale of my study is to study the frequency of various risk factors for meconium aspiration in neonatal population so that a liaison can be made between obstetricians and pediatricians to reduce the incidence of meconium aspiration syndrome.

MATERIALS AND METHODS

A total number of 150 newborns presenting to Department of Paediatric Medicine Nishtar Hospital Multan with complaint of meconium staining was evaluated for the study. After explaining risks / benefits of the study and informed consent from parents, they were assessed by history and clinical examination. Sample size of 150 cases was calculated with 95% confidence level, 7% margin of error and taking expected percentage of low APGAR score at 5mins i.e. 20% (least among all) risk factor associated with meconium aspiration. Aspiration of meconium stained amniotic fluid before, during or after delivery resulting in respiratory distress assessed with respiratory rate more than 60/mm, vocal cord staining seen by direct laryngoscopy, cord blood pH 7.16 and X-ray chest showing opacifications was labeled as meconium aspiration syndrome.

Intra-uterine Growth Retardation was labeled when birth weight less than 2.5SD of the normal as per WHO growth charts. Thick Meconium was judged by the color and texture of the meconium Green to dark-green and granular on visual inspection. The newborns with Meconium Stained body presenting in first 72 hours of life either gender included in the study. The newborns who had been associated congenital heart diseases assessed clinically with the help of auscultation, diaphragmatic hernia or any dysmorphism, was excluded. New borns not presenting with antenatal record were excluded from the study. ABG and X-ray Chest was done in all neonates.

The data collection tool (Annexure- I hereby attached) was applied to finally selected patients to collect information regarding risk factors like, Post-term pregnancy, IUGR, thick meconium, low APGAR score at 1 and 5 minutes as per operational definition. Data was entered and analyzed by using computer program SPSS- 10. Descriptive statistics was applied to calculate mean and standard deviation for maternal age. Frequencies and percentages was calculated for risk factors like Post-term pregnancy, IUGR, thick meconium, low APGAR score at 1 and 5 minutes. Data wasstratified for maternal age, mode of delivery (c/section/vaginal) to deal with effect modifiers. Post-stratification, chi-square test was applied and p-value≤0.05 was considered significant.

RESULTS

Among total 150 patients enrolled in this study the mean age of the babies was 37.37±18.96 hours with minimum and maximum ages of 6 & 72 hours respectively. In our study 76(50.67%) babies were male and 74(49.33%) babies were females. The male to female ratio of the babies was 1.03:1. The study results showed that the mean value maternal age was 28.85±6.602 years with minimum and maximum ages of 18 & 40 years respectively (Table-1).

Table No.1: Demographic variables

Characteristics	Mean	SD	P Value
Age	37.37	18.96	0.673
Maternal age	28.85	6.602	0.000
Gender			
Male	76	50.67 %	0.892
Female	74	49.33 %	

Table No.2: Frequency (Percentages) of Meconium Aspiration Syndrome

Characteristics	Frequency	%ages	P Value
Mode of delivery			
Vaginal	79	**52.7 %**	**0.821**
Cesarean	71	**47.3 %**	
Postdate pregnancy			
Yes	68	**45.3%**	**0.001**
No	82	**54.7%**	
IUGR			
Yes	52	**34.7%**	**0.021**
No	98	**65.3%**	
Poor APGAR at 1 min			
Yes	79	**52.7%**	**0.734**
No	71	**47.3%**	
Poor APGAR at 5 min			
Yes	69	**46.0%**	**0.034**
No	81	**54.0%**	
Thick Meconium			
Yes	89	**59.33%**	**0.000**
No	61	**40.67 %**	

In this study 79(52.7%) patients went through vaginal delivery and 71(47.3%) patients went through CS. In this study the postdate pregnancy was noted in 68(45.3%) patients.Out of 150 patients the IUGR was observed in 52(34.7%) patients and it was not observed in 98(65.3%) patients. Out of 150 patients the poor APGAR score at 1 min was noted in 79(52.7%) patients and good APGAR score at 1 min was noted in

71(47.3%) patients. The study results showed that the poor APGAR score at 5 min was noted in 69(46%) patients and good APGAR score at 5 min was noted in 81(54%) patients. According to our study results the thick meconium was observed in 89(59.33%) patients and it was not observed in 61(40.67%) patients (Table-2).

In our study statistically insignificant association was found between meconium aspiration syndrome and poor APGAR score at 1, mode of delivery i.e. vaginal or caesarean section and baby gender i.e. male or female with P value 0.734, 0.821 and 0.892 respectively.

In this study statistically significant association was found between meconium aspiration syndrome and poor APGAR score at 5 minutes, maternal age , post dated pregnancy, IUGR, and thick meconium with P value 0.034, 0.000, 0.001, 0,021 and 0.000 respectively.

DISCUSSION

This present descriptive cross sectional study was conducted at Pediatrics Unit-I Services Hospital Lahore to study the frequency of various factor leading to MAS.MAS is a common cause of lung disease in neonates. Cause of MAS is inhalation of thick meconium. Most of time it is due to hypoxia of fetus which can increased the peristaltic movement, gasping reflux and relaxation of anal sphincters.[10] Meconium passage occurs in up to 20% of full term gestations and can occur in more than 35% of pregnancies continuing beyond 42 weeks' gestation.[11-16]

In our study 79(52.7%) patients went through vaginal delivery and 71(47.3%) patients went through CS, the postdate pregnancy was noted in 68(45.3%) patients, the IUGR was observed in 52(34.7%) patients, the poor APGAR score at 1 min was noted in 79(52.7%) patients and poor APGAR score at 5 min was noted in 69(46%) patients. In this study the thick meconium was observed in 89(59.33%) patients. Maternal age and mode of delivery showed insignificant difference with factors. Incidence of MAS occurs in long time period due to less cases of post term deliveries, close monitoring and management of fetal heart rate and reduction in the low APGAR score births.[17]

In a study, neonates developing MAS secondary to meconium stained amniotic fluid were studied. The results of this study showed various risk factors for MAS which are: vaginal delivery (60%) / C-section (40%), post-maturity (48%), Intra-uterine growth retardation (26%), 1 mm. low APGAR score (70%), 5 mm. low APGAR score (20%), thick meconium (69.7%) / thin meconium (36.4%). Another study showed the incidence of these and some other risk factors leading to MAS in children with MSAF and showed similar results.[3]

At 41 weeks or beyond these weeks elective induction of labour found to be highly associated with low rate of MAS and minimal perinatal mortality and morbidity when compared with expectant management.[18]

A study by UzmaFirdauset al[19] reported 9.8% incidence of MSAF and 1.8% of MAS. He reported that fetal respiratory distress and low APGAR score are the main risk factors of MAS, maternal risk factors are not prominent.In the study by swain et al, the incidence of MSAF was 13.97% and that of MAS was 8.57%[20] In the study by Manganaro et al no significant difference in parity, maternal age, gestational age, metabolic acidemia, sex, low APGAR score at 1 minute and 5 minute and need for endotracheal intubation was observed between both groups MSAF and non-MSAF infants.[21]

Bhat RY et al[22] however found thick meconium as the only significant factor contributing to MAS. Another work by Khazardoost et al[23] did not find the role any maternal factors in predicting the progression to MAS. In a previous study conducted by Usta et al study[24] it was reported late maturity not a risk factor of MAS. Conclusion of his study favors the concept that incidence of meconium aspiration occurs in normally mature infants that leads the infants fetal compromise and MAS. Some studies demonstrated that the presence of fetal compromise like low Apgar score,[25-27] abnormal heart rhythm[28-29] and cesarean deliveries enhance the chances of MAS in infantsand of MAS in the meconium-stained infant.[30]

CONCLUSION

The observations of our study revealed that Meconium aspiration syndrome has significant relation with maternal age (P value 0.000), postdated pregnancy(P Value 0.001), IUGR (P value 0.021), poor APGAR score at 5 minutes(P value 0.034), and thick meconium (P value 0.000).

Author's Contribution:

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Original Article

Colloid Preload and Coload Versus Crystalloid Preload in Spinal Cesarean Delivery: The Effect of Injection Speed

Muhammad Salman Maqbool[1] and Muhammad Umer Draz

ABSTRACT

Objective: To foresee clinical effects of crystalloid pre-load versus colloid preload/co-load in spinal cesarean delivery.

Study Design: Prospective / observational study

Place and Duration of Study: This study was conducted at the Department of Anesthesia, Islam Teaching Hospital, Islam Medical College, Sialkot, from 03-4-2012 to 18-9-2012 and Rawal General and Dental Hospital, Rawal Institute of Health Sciences, Islamabad, from 19-9-2012 to 18-11-2013 respectively.

Materials and Methods: Parturients were placed in group-a, and group-b, i.e. colloid and crystalloid fluid groups respectively, given as preload /or coload alongwith injection speed variation.Data analyzed by SPSS v19.

Results: In group-a, and b, vasopressor was required in 50 (40.3%) and 68(54.4%) of cases.The correlation co-efficient(r) was 0.768(group-a) and 0.723(group-b) and significant at 0.01 level respectively.

Conclusion: Slow injection speed lowers incidence of hypotension and crystalloid or colloid fluids must be rapidly administered at time of spinal anesthesia for maximum efficacy.

Key Words: Cesarean, Speed, Spinal, Co-Load, Preload.

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INTRODUCTION

The typical response to spinal anesthesia is hypotension owing to decreased systemic vascular resistance and a resultant increase in heart rate[1] though a small proportion of patients may respond with hypotension and bradycardia[2]. Loubert C[3], studied physiological phenomenon of maternal hypotension related to spinal anesthesia, and recommended fluid regimen i.e. colloid preload and colloid or crystalloid coload and vasopressor phenyl ephrine infusion to be valuable in preventing hypotension.

Intravenous fluids given 15-20 minutes prior to spinal anesthesia is called "preload" the literature reviews it as ineffective due short intravascular half-life[4]. Jackson R, Reid JA[5] and colleagues concluded that preload crystalloid fluid regimen may consume time, risking circulatory fluid overload in parturients, cause hemodilution, and placental auto-transfusion at delivery added to it, may cause fluid overload (pulmonary edema) in parturients with myocardial insufficiency and they stated to avoid crystalloid fluid preload.

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The excessive preload crystalloid fluid administration causes release of atrial natriuretic peptide secretion which causes peripheral vasodilatation and increases renal excretion of fluid [6].

Currently pushing fluids at time of spinal block known as "coload" is being advocated as it is more helpful in maintaining cardiac output[7]. Oh AY, Hwang JW[8] et al advocated that crystalloid coload was more effective than preload for the prevention of maternal hypotension after spinal anesthesia. Ripolles Melchor J[9] and colleagues stated that colloid fluid use significantly reduced the incidence of spinal hypotension as compared to crystalloids however there was no difference in intra-operative nausea and vomiting with both fluid regimens.

Jewel JJ,Williams A[10] and colleagues observed ineffectivesness of 15ml/kg ringer lactate solution given as pre and co-load in prevention of spinal induced maternal hypotension and advised frequent monitoring of maternal blood pressure(at one minute interval) and early treatment of hypotension by vasopressors. Gunda CP, Malinowski J[11] and colleagues stated that employing phenylephrine or ephedrine to combat maternal hypotension is good choice.A retrospective study done by Cooper DW [12]and colleagues stated that both vasopressors i.e. ephedrine and phenyl ephrine usage for maintaining maternal blood pressure following sympathetic blockade, showed no difference in umbilical artery pH values .

Simon L[13] and colleagues, stated that slow injection rate (2ml/min) was effective in decreasing incidence of hypotension and hence less vasopressor need.Chiang

CF[14] and colleagues evaluated effect of fast and slow injection speed on incidence of hypotension, vasopressor need and incidence of nausea and vomiting noted no difference in both groups. Hanazaki M[15] and colleagues in their study stated that emplyment of spinal injection speed of 0.1 to 0.2 ml/seconds is advisable, to maintain a stable pulse and blood pressure (hemodynamics) following block in cesarean delivery. Singh SI, Morley-Forster PK [16] and colleagues in their study advocated that variations of injection speed in spinal cesarean delivery has no difference in clinical sensor and autonomic effects or complications like nausea. Tawfik MM, Hayes SM[17] et al observed that 1000ml of crystalloid co-load had similar effect compared to 500ml colloid preload in reducing incidence of hypotension after intra-thecal block. Unlugenc H, Turktan M[18] et al in study stated, that co-loading with both colloid /crystalloid to be equally effective in maintaining blood pressure and in vasopressor need.

We conducted study to foresee that coload/preload with colloid was more effective than crystalloid preload in lowering incidence of hypotension(vasopressor need), high spinal/respiratory distress and complications like nausea and vomiting. Also noted was effect of varying injection speed time defined as, fast 10 seconds (approx.3.2drops/sec), medium 30seconds (approx.1. 06drops/sec) and 40 seconds (approx.0.8drops/sec) on spinal hypotension. Neonatal outcome (APGAR[19]score) was also noted.The vasopressor were used for 20% decline in systolic blood pressure from baseline and supplemental oxygen given for pulse oximeter reading <96% and atropine given to treat heart rate < 45 beats/minute.

MATERIALS AND METHODS

After ethical committee consent, study was completed at Department of Anesthesia, Islam Teaching Hospital, Islam Medical College, Sialkot, from 03-4-2012 to 18-9-2012 and Rawal General and Dental Hospital, Rawal Institute of Health Sciences, Islamabad, from 19-9-2012 to 18-11-2013 respectively. Two hundred and forty nine term parturients scheduled for elective spinal cesarean, placed in American Society of Anesthesiologists (ASA) physical status[20] class 1-4, randomized by using computer generated numbers into group-a and group-b, colloid and crystalloid fluid loading as preload /or coload respectively. Also employed was injection speed variation.

Pre-anesthesia evaluation was done and informed written consent taken. Excluded were parturients with coagulopathy, eclamptic (HELLP syndome), fixed cardiac output state e.g. aortic stenosis, shock (ante-partum hemorrhage).In operating theatre after securing 18G intra-venous lines and attaching standard monitors, sub-arachnoid block was done with 0.75% hyperbaric bupivacaine via 25G quincke spinal needle using aseptic technique and placed supine with 15^{o} wedge under the right hip for few minutes.

The sensory and motor block was evaluated by pin prick in midline and modified bromage scale by Breen TW, Shapiro T[21] and colleagues at two minutes interval respectively.Sympathetic block was evaluated by temperature change.Spinal block was assessed till fourth thoracic level achievement to cold and pin prick before surgery started.Hemodynamic monitoring continued every minute for first 10 minutes thereafter at 5 minutes interval, also noted vasopressor need, nausea, associated complications and Apgar score[19]. After surgery monitoring and care continued in post anesthesia care unit. Data analyzed by SPSS version 19. Spearman Correlation test done to assess interdependence between systolic and diastolic blood pressure values in both groups and correlation coefficient(r) significance at 0.01 levels assessed.

RESULTS

Study demographics depicted in table-1.Apgar score[19] at one and five minutes in group-a being 7.26(SD of 0.77) and 8.8(SD 0.87) and in group-b being 7.18(SD 0.94) and 8.4(SD 1.08) respectively.In group-a, the mean volume in milliliters(ml) of colloid was 1498ml(SD of 492ml) whereas colloid was given as coload and preload in 18 and 106 (14.5% and 85.5%) out of 124 cases respectively.The mean crystalloid preload volume given in group-b was 1372ml(SD of 488ml). In crystalloid group-b, in 8.8% of cases (11out of 125 cases) colloids were given after spinal block to counter profound hypotension.Statistical hemodynamic data of both groups depicted in table-2.

Table No.1; Demographic data.

	Group-a	Group-b
	Age (in years)	
Mean	25.83(SD of 4.08)	27.54(SD of 4.60)
Minimum	18	19
Maximum	38	40

Table No.2: Hemodynamic data.

	Pulse/minute	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)
	(Group a / b)		
Mean	106.59/103.00	121.13/123.18	71.43/68.33
Median	105.00/101.00	119.00/121.00	70.00/67.00
Mode	96/96	117/106	67 / 70
Std Deviation	16.64/18.144	17.97/22.295	15.36/18.56
Minimum	45/41	43/67	18/16
Maximium	172/170	220/214	135/144

Vasopressor was used in 50 cases (40.3%) and not used in 73 cases (58.9%) in group-a, whereas same readings in group-b, being 68 cases (54.4) and 57 cases (45.6%) respectively.Atropine used is revealed in table-3.

Table No.3: Atropine consumption.

	Prophy_lactic	After block	Prophylactic and after block	Late after delivery	Not used	For Missed beats	Dose (0.5mg)	Dose (1mg)	Dose (2mg)
Group-a (N / %)	5 / 4	43 / 34.7	2 /1.6	8 / 6.4	62 / 50	2 / 1.6	40/32.2	20/16.1	-
Group-b (N / %)	9 / 7.2	63 / 50.4	4 / 5	-	44/ 35.2	-	37/29.6	37/29.6	5/4

Table No.4: American Society of Anesthesiologist grades.

	Frequency	Percent
	(Group a / b)	
Grade-1	109/106	87.9/84.8
Grade-2	5/8	4/6.4
Grade-3	9/11	7.3/8.8
Grade -4	1/0	0.8/0

Physical status (ASA[20]) grades shown in table-4. The mean dose of bupivacaine used for spinal anesthesia being 13.59mg (SD of 0.537) in group-a, and in group-b, 13.45mg (SD of 0.492) respectively.The vasopressor used with injection speed depicted in table-5. Adjunct medications used are shown in table-6.Correlation co-efficient(r) value in group-a, was 0.768 and 0.723 in group-b, which is significant at 0.01 level (2-tailed).

Table No. 5: Vasopressor consumption.

	Injection speed(seconds)	Cases (n / %)	Vaso-pressor used (%)
Group- a	Fast (10)	12 / 9.6	66.66
	Medium (30)	106/85.4	39.62
	Slow (40)	6 / 4.8	Nil
Group- b	Fast (10)	8 / 6.4	75
	Medium (30)	96 / 76.8	55.2
	Slow (40)	19 / 15.2	42.10

Table No.6: Adjunct medications.

	Group-a	Group-b
	(n / %)	
Inj.Metoclopramide (for nausea & vomiting)	11 / 8.9	8 / 6.4
Inj.Ranitidine	6 / 4.8	1 / 0.8
Inj.Ketamine(analgesic dose after delivery)	1 / 0.8	6 / 4.8%
Inj.Nalbuphine(after delivery)	9 / 7.25	7 / 5.6
Inj.Transamine(prophylactic)	5 / 4.03	36/28.8

DISCUSSION

Parturients undergo various hemodynamic autonomic changes following sub-arachnoid[22.] Hopf HB et al[23] and Gratadour P et al[24] noted three hemodynamic patterns after spinal block; hypotension and tachycardia, hypotension and bradycardia and little or no hemodynamic change. In study marked tachycardia immediately following block was observed in three cases in group-a, and in a single case in group-b. One case of respiratory distress was observed in both groups which were immediately managed by respiratory support. In our study, no urinary retention or neurological deficit or complication was observed post operatively.Tamilselvan PI, Fernando R[25]and colleagues stated that crystalloid or colloid preload regimen cannot compensate for hypotension after block.Rout CC and Rocke DA[26] in their study,stated that sub-arachnoid block associated maternal hypotension is most prevalent complication requiring in upto 80% of cases vasopressors to correct it. Osazuwa IH and Ebague A[27] stated that crystalloid preloading showed transiently better prophylactic superiority over colloids or their combinations for first 10 minutes against hypotension following block. Thage B and Callesen T[28] stated that, injection speed and dose of bupivacaine, is important and problem of unpredictability of the sensory block level exists.The vigilance of anesthesiologist and close hemodynamic monitoring, availability of respiratory support gadgets and fluid coloading, can help significantly reduce maternal morbidity and improve neonatal outcome.

CONCLUSION

The administration of colloid preload and crystalloid coload may require less need of vasopressors to correct spinal associated maternal hypotension. The use of slow speed of injection is helpful in decreasing the incidence of hypotension.

Author's Contribution:

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Data Analysis:	Muhammad Umer Draz
Revisiting Critically:	Muhammad Salman Maqbool, Muhammad Umer Draz
Final Approval of version:	Muhammad Salman Maqbool, M. Umer Draz

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Guidelines & Instructions

Guidelines and Instructions to Authors

The Journal MEDICAL FORUM agrees to accept manuscripts prepared in accordance with the Uniform Requirements submitted to the Biomedical Journals published in the British Medical Journal 1991;302:334-41. Revised in February 2006.

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Basic Requirement

The material submitted for publication should be forwarded containing;

1) 3 Hard copies of Laser Print.
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3) Letter of Undertaking with Authors Name, Address, Mobile Numbers, Degrees, Designations, Department of Posting and Name of Institution.

ORIGINAL ARTICLE: It should be of 2000 to 3000 Words, not more than 6 Tables or Figures and at least 20 References but not more than 40.

REVIEW ARTICLE: It should be of 3000 Words with at least 40 References but not more than 60.

SHORT COMMUNICATIONS OR CASE REPORTS: It should be 600 Words with one Table or Figure and 5 References.

LETTER TO EDITOR: It should be 400 Words with 5 References.

TITLE OF THE ARTICLE; Accurate, Effective and Represent the main message of Article.

ABSTRACT

In Original Article, It should consist of the following seven subheadings: **Objective, Study Design, Place and Duration of study, Materials & Methods, Results, Conclusion & Key Words** and should not more than 250 Words.

The second part consists of Introduction, Materials and Methods, Results, Discussion, Conclusion and References

References should be entered in text Vancouver Style in ascending order and in shape of numbers & superscript (e.g. [1,2,3,4])

INTRODUCTION

The start of the introduction should be Relevant. Reasons and Importance of the study should be clear. Give only strictly pertinent References and do not include data or conclusions from the work being reported.

MATERIALS & METHODS

The Population taken for the study should be uniform and Sample selection criteria should be reliable. Inclusion & Exclusion criteria should be clearly specified.

RESULTS

Present yours results in a logical sequence in the Text, Tables, Illustrations, figures and Graphs.

DISCUSSION

Emphasize the new and important aspects of the study and conclusions that follow from them.

CONCLUSION

In this link write the goals of the study.

RECOMMENDATIONS

When appropriate, may be included.

ACKNOWLEDGMENTS

List of all contributors who do not meet the criteria for Authorship, such as a person who provided purely technical help, writing assistance or department chair who provided only general support. Financial & Material support should be acknowledged.

REFERENCES

It should be in the **Vancouver style**. References should be numbered in the order in which they are cited in the text. At the end of the article, the full list of references should give the names and initials of all the authors. **(if the authors are more than 6, then et al should be followed after the 6th name).** Vancouver Style should be used like' The healing of tissues by C02 laser. Br J Surg 1971;58:222-5.

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