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Editorial

Fasting

Dr. MohsinMasud Jan

Editor

“O you who believe! Fasting is prescribed for you, as it was prescribed for those before you, so that you may guard (against evil).” Qur'an (2:183).

We, as Muslims have been enjoined by our religion to fast for this blessed, holy month of Ramazan. And hopefully, most of us are fasting, and those who aren't able to, may they be able to make up for it later. But, let us for a while consider something. As we all are well aware that in Islam, Allah has not enjoined on us anything that is not beneficial to us in one way or the other. Considering that, how many of us have actually pondered, let alone researched the effects and the benefits of fasting on our bodies, on a physiological, molecular level? I would wager to say that not many, barely a handful of us might've done so. So, we'll dedicate this issue to Fasting, its benefits and its impact on our bodies, looking at it from a medical and scientific point of view.

1. Helps Weight Loss

Starting off with the most obvious one. A study published in The American Journal of Clinical Nutrition came up with the results that fasting in Ramazan leads to an increase in fat oxidation¹. Which basically means that the body gets primed to burn more fat. That in addition to a sensible diet and some exercise can easily lead to some weight loss during this one month.

2. Improves Insulin Sensitivity

Danish researchers found that fasting caused an increase in insulin mediated whole body glucose uptake rates, meaning an increase in insulin sensitivity, thus providing a way to reduce insulin resistance².

3. Promotes Longevity & Improves Your Immune System

Prolonged Fasting Cycles have been found to Protect the Hematopoietic System and Reverse Chemotherapy-Induced Hematopoietic Suppression, Promote Lineage-Balanced Hematopoietic Regeneration, Regulate Stem Cells Independently of Chemotherapy and Help Reverse Immunosenesence³. Considering all of these factors, it can be safe to say that fasting helps improve the Immune system.

4. Improves Your Brain Function

A study conducted on mice, concluded that periods of fasting lead to an increase in the numbers of autophagosomes in the Purkinje cells in the cerebella of the mice along with a reduced mTOR function⁴. Thus fasting might represent a simple, safe and inexpensive means to promote this potentially therapeutic neuronal response, even in humans.

Now, to conclude this topic, these 4 from the myriad of benefits provided by fasting, alone, should be enough to convince anyone that fasting is extremely beneficial for our bodies, and it is a practice that we should try to incorporate into our daily lives on a regular basis.

REFERENCES

1. Ati J, Beji C, Danguir J. Increased fat oxidation during Ramadan fasting in healthy women: an adaptative mechanism for body-weight maintenance. *Am J Clin Nutr* 1995; 62(2):302-307.
2. Halberg N, et al. Effect of intermittent fasting and refeeding on insulin action in healthy men. *J Appl Physiol* 2005; 99(6):2128-2136.
3. Cheng CW, et al. Prolonged Fasting Reduces IGF-1/PKA to Promote Hematopoietic-Stem-Cell-Based Regeneration and Reverse Immunosuppression. *Cell Stem Cell* 2014; 14(6):810-823.
4. Alirezaei M, et al. Short-term fasting induces profound neuronal autophagy. *Autophagy* 2010; 6(6): 702-710.

C-Reactive Protein and Total Leukocyte Count in the Diagnosis of Acute Appendicitis

1. Viqar Aslam 2. Shabab Hussain 3. Muhammad Sherose Khan 4. Sajjad Muhammad Khan 5. Raza Ullah

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ABSTRACT

Objective: The objective was to calculate the sensitivity and specificity of C reactive protein and Total leukocyte count by taking histopathological diagnosis of acute appendicitis as the gold standard.

Study Design: Observational study

Place and Duration of Study: This study was conducted in the Surgical Unit of Lady Reading Hospital, Peshawar from January 2014 to December 2014.

Materials and Methods: The study included 50 adult patients of either gender with clinical diagnosis of acute appendicitis. The patients were admitted through the emergency department. The decision to operate was made by the senior surgeon on call, on the basis of clinical features. All the cases were operated within 12 hours of admission. Blood samples for Total leukocyte count and C-reactive protein measurement were collected from all the patients before surgery. Operative findings were recorded. Removed appendices were sent for histology. The data was entered and processed on the SPSS 16 version.

Results: The patients included 32 males and 18 females. Male to female ratio was 1.8:1. Mean age was 24 years. Frequency of negative appendectomy was 16%. Sensitivity, specificity and positive predictive value of Total leukocyte count were 80.5%, 62.5% and 91.8% respectively. Sensitivity, specificity and positive predictive value of C-reactive protein were 85.7%, 75% and 94.5% respectively. In patients with histopathologically confirmed acute appendicitis, both the TLC and C - reactive protein were found to be statistically significant.

Conclusion: C-reactive protein and Total Leukocyte Count supplement the clinical diagnosis of acute appendicitis.

Key Words: Appendicitis, Total leukocyte count, C-reactive protein, Appendicectomy

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INTRODUCTION

Appendicitis is one of the commonest acute surgical conditions of the abdomen,^{1,2} with a life time cumulative incidence of 8.6% for men and 6.7% for women.³ The diagnosis of appendicitis is made primarily on the basis of patient's history and clinical examination.^{3,4} A typical patient presents with right lower abdominal pain, nausea, vomiting and anorexia. He has tenderness, rebound tenderness and guarding in right iliac fossa. However, the clinical features are not specific for appendicitis and can mimic other acute abdominal conditions.^{3,5-7} Variable position of the appendix further adds to the diagnostic difficulty. Consequently appendicitis remains a difficult diagnosis.^{3,4}

The percentage of negative appendectomies varies between 10% and 30%.^{3,8,9} The reported post-operative morbidity associated with these negative explorations is

5-15%.^{3,8} The overall accuracy for diagnosing acute appendicitis clinically is about 80%.^{3,4} It is considerably low at extremes of age and in females of child bearing age.^{3,4,6,7} It also varies according to the experience of surgeon.³ In most cases junior surgeons and residents have to diagnose and decide whether to operate or not. Hence the diagnostic accuracy can be quite low.

Therefore, additional tests, which would improve the diagnostic accuracy and reduce the number of unnecessary operations, are needed. These investigations range from simple laboratory tests like Total Leukocyte Count (TLC), Differential Leukocyte Count (DLC), to more sophisticated and expensive radiological investigations like: helical CT scan, MRI scan and radio labelled studies.³

TLC is the most commonly used test. Unfortunately it is also elevated in patients with other causes of right lower quadrant pain. Many studies have suggested that it has low specificity.^{3,4,6} A recently suggested test is the measurement of C- reactive protein (CRP) level in serum. However, role of CRP in the diagnosis of acute appendicitis is controversial.^{4,5,10}

In this study the sensitivity, specificity and positive predictive value of TLC and serum CRP in patients

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with clinical diagnosis of acute appendicitis were checked. The purpose of this study was to see whether simple investigations like TLC and CRP help in the diagnosis of acute appendicitis.

MATERIALS AND METHODS

An observational study was conducted in surgical unit of Lady Reading Hospital, Peshawar during the period from Jan 2014 to Dec 2014. The study included 50 patients above 12 years of age, of either gender with clinical diagnosis of acute appendicitis. The criteria for diagnosis of acute appendicitis were pain in right iliac fossa, tenderness and rebound tenderness in the same region. Patients with generalized abdominal pain, appendicular mass, patients with coexisting conditions like recent myocardial infarction, known malignancy, rheumatic disorders, respiratory tract infection were excluded from the study. Informed consent was taken from all the patients before including them in the study. All the cases were assessed by the senior surgeon on call and operated within 12 hours' of admission. The decision to operate was made on the basis of clinical features. Blood samples for TLC and CRP measurement were collected from all the patients before going to operating room. The cut-off value for TLC was $11 \times 10^6/L$. Quantitative CRP was measured in serum by Fluorescence Polarization Immunoassay (FPIA) technology. Normal CRP level in our laboratory was less than 1.0 mg/dl. Preoperative care included intravenous fluid resuscitation and broad spectrum antibiotics. Appendicectomy was done through Gridiron muscle splitting or small transverse incision. Operative findings were recorded. Removed appendix was sent for histological examination in each case. The results were used to get the frequency of negative appendicectomy. All the data was entered on a pre-designed proforma. The proforma included: demographic detail of the patient, TLC, serum CRP level, operative and histological findings. All the data was processed on the SPSS 10 version. The results of the tests were subjected to statistical analysis using the same program. Sensitivity and specificity of TLC and CRP were calculated by taking histopathological finding as the gold standard. P value of less than 0.05 was considered as significant.

RESULTS

During the study period, a total of 50 patients were admitted through the accident and emergency department of the hospital, with the clinical diagnosis of acute appendicitis. The patients included 32 males and 18 females. Thus, males outnumbered the female patients. Male to female ratio was 1.8:1. Age distribution ranged from 12-55 years with mean being 24 years. In 8 cases (16 %) appendix was found to be normal on histopathology. Out of these, 3 cases (37.5%) were males and 5 cases (62.5%) were females.

Sensitivity, specificity and positive predictive value (PPV) of TLC were 80.5%, 62.5% and 91.8% respectively, as shown in table 1. Sensitivity, specificity and PPV of CRP were 85.7%, 75% and 94.5% respectively, as shown in table 2. In patients with histopathologically confirmed acute appendicitis, both the TLC and CRP were found to be significant, $p=0.021$ and $p=0.001$ respectively.

Table No.1: TLC and histopathology

Histopathological Diagnosis	TLC $<11 \times 10^6/L$	TLC $>11 \times 10^6/L$	Total
Acute Appendicitis	8 (FN)	34 (TP)	42
Normal Appendix	5 (TN)	3 (FP)	8
Total	13	37	50

Sensitivity= $TP/TP+FN = 34/34+8 = 80.5\%$

Specificity= $TN/TN+FP = 5/5+3 = 62.5\%$

Positive Predictive Value= $TP/TP+FP =$

$34/34+3=91.8\%$

P value=0.021

Table No. 2: CRP and histopathology

Histopathological Diagnosis	Serum CRP ($<1\text{mg/dl}$)	Serum CRP ($>1\text{mg/dl}$)	Total
Acute Appendicitis	6 (FN)	36 (TP)	42
Normal Appendix	6 (TN)	2 (FP)	8
Total	13	37	50

Sensitivity= $TP/TP+FN = 36/36+6 = 85.7\%$

Specificity= $TN/TN+FP = 6/6+2 = 75\%$

Positive Predictive Value= $TP/TP+FP = 36/36+2 =$

94.5%

P value=0.001

DISCUSSION

Acute appendicitis is a common surgical emergency.³ It is a disease of the young.^{11,12} In this study the mean age was 24 years. This is consistent with the results reported from other studies.^{11,13-15} However no age is immune, the age range in this study was from 12 years to 55 years which conforms with the findings of other studies.^{11,12,16,17} Moreover, in all age groups male preponderance was noted. Male to female ratio was 1.8:1. These observations are similar to those observed in other studies.^{11,12,14,16,18,19}

Accurate clinical diagnosis of acute appendicitis is difficult. Diagnosis may be delayed in some patients leading to increased risk of perforation, gangrene and abscess formation. On the other hand, removal of a normal appendix is also not uncommon. Negative appendicectomy is associated with significant morbidity.^{16,20,21} According to a study by Flum et al²² stated that negative appendicectomy is associated with a significantly longer hospital stay, higher total cost, case fatality rate and rate of infectious complications. In this study, frequency of negative appendicectomy was 16% and most of these were females (62.5%). Except for a few reports of rate of negative appendicectomy below 10%,^{12,13,23} recent studies report the rate between 10% and 30%.^{11,14,16-18,24} A study has

reported that women, patients younger than 5 years and older than 60 years have higher rate of negative appendectomy.²²

TLC is widely used to aid the diagnosis of acute appendicitis. Its diagnostic value varies from useful to misleading.^{12,16} Many studies have been done on the diagnostic value of TLC in appendicitis with conflicting results.^{12,16,25,26}

In this study, the sensitivity, specificity and PPV of TLC were 80.5%, 62.5% and 91.8% respectively. These findings are consistent with that of other studies.^{12,16,18}

Raised TLC is regarded as a sensitive test for acute appendicitis but is not diagnostic because of its relatively low specificity.^{12,16,20} Many studies have suggested a more supportive role for TLC in the diagnosis of acute appendicitis.^{27,28}

Recently attention has been focused on other inflammatory markers which can be raised in acute appendicitis. CRP is one of them. It is an acute phase protein, produced in the liver in response to tissue trauma, inflammation. Several studies have been done on the role of CRP in the diagnosis of appendicitis.^{12,16-18,28,29}

In this study the sensitivity, specificity and PPV of CRP in the diagnosis of acute appendicitis were 85.7%, 75% and 94.5% respectively. These figures are consistent with the results reported in other studies.^{12,16-18,28,29}

Afsar et al³⁰ in a prospective study reported that the sensitivity, specificity and PPV of CRP were 93.6%, 86.6% and 96.7%. The author concluded that normal CRP level was unlikely to be associated with acute appendicitis. However, some authors have suggested that CRP is more effective in supporting the clinical diagnosis of acute appendicitis than in excluding it.^{28,31,32} According to Shakhathreh CRP is very helpful in the diagnosis of acute appendicitis but it does not replace the clinical skills of a surgeon.³²

CRP alone is not effective in preventing negative appendectomies.³³ Studies have reported that the frequency of negative appendectomy can be reduced if CRP is added to other lab tests.^{33,34} A prospective study done in Scotland showed that the sensitivity, specificity and PPV of CRP were 75.6%, 83.7% and 96% respectively.¹⁶ The study also concluded that the specificity and PPV increased if TLC and CRP were used together.¹⁶

CONCLUSION

CRP and TLC supplement the clinical diagnosis of acute appendicitis. These tests should be used together. These are readily available and of particular value to a junior surgeon making the diagnosis of appendicitis.

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

REFERENCES

1. Menendez-Arzac R, Cardenas-Lailson E, Sanjuan-Martinez CA, Rebolledo-Lopez G, Parraguirre-Martinez S, Leon L, et al. Acute intestinal ischemia serum markers for the diagnosis of acute appendicitis. *Cir Cir* 2005; 73:449-52.
2. Anderson REB. Metaanalysis of the clinical and laboratory diagnosis of appendicitis. *Br J Surg* 2004; 91:28-37.
3. Birnbaum BA, Wilson SR. Appendicitis at the millennium. *Radiol* 2000; 215: 337-48.
4. Iqbal M. Appendicitis: a diagnostic dilemma. *Rawal Med J* 2005; 30:51-2.
5. Dalal I, Somekh E, Bilker-Reich A, Boaz M, Gorenstein A, et al. Serum and peritoneal inflammatory mediators in children with suspected acute appendicitis. *Arch Surg* 2005; 140:169-73.
6. Qureshi WI, Durrani KM. Surgical audit of acute appendicitis. *Proceeding Shaikh Zayed Med Inst* 2000; 14: 7-12.
7. Salari AA, Binesh F. Diagnostic value of anorexia in acute appendicitis. *Pak J Med Sci* 2007;23: 68-70.
8. Perez J, Barone JE, Wilbanks TO, Jorgensson D, Corvo PR. Liberal use of computed tomography scanning doesnot improve diagnostic accuracy in appendicitis. *Am J Surg* 2003;185:194-7.
9. Nabipour F, Daneshalab MB. Histopathological features of acute appendicitis in Kerman-Iran. *Rawal Med J* 2005;30:53-5.
10. Amalesh T, Shankar M, Shankar R. CRP in acute appendicitis - is it a necessary investigation? *Int J Surg* 2004; 2:88-9.
11. Singhal R, Angmo N, Somaiah N, Majumdar H, Chaturvedi KU. A retrospective review of the histopathology and clinicopathologic correlates of appendices removed from patients of acute appendicitis. *Minerva Chir* 2007; 62:11-8.
12. Gulzar S, Umar S, Dar GM, Resheed R. Acute appendicitis – importance of clinical examination in making a confident diagnosis. *Pak J Med Sci* 2005; 21: 125-32.
13. Channa GA, Amin-ul-Haq H, Najmi K. Correlation of macroscopic assessment in acute appendicitis with histopathology findings. *Pak J Surg* 2005; 21:10-4.
14. Bergeron E. Clinical judgment remains of great value in the diagnosis of acute appendicitis. *Can J Surg* 2006; 49: 96-100.
15. Zoguereh DD, Lemaitre X, Ikoli JF, Delmont J, Chamlian A, Mandaba JL, et al. Acute appendicitis at the national University Hospital in Bangui, Central African Republic: epidemiologic, clinical, paraclinical and therapeutic aspects. *Sante* 2001; 11:117-25.

16. Khan M N, Davie E, Irshad K. The role of white cell count and C-reactive protein in the diagnosis of acute appendicitis. *J Ayub Med Coll* 2004;16: 17-9.
17. Shoshtari MHS, Askarpour S, Alamshah M, Elahi A. Diagnostic value of quantitative CRP measurement in patients with acute appendicitis. *Pak J Med Sci* 2006; 22:300-3.
18. Shabbir MN. Significance of C-reactive protein levels in reducing negative explorations for acute appendicitis. *Pak J Surg* 2005; 21: 6-9.
19. Khan JS, Hassan H, Khan JA. Investigations for Acute Appendicitis: Can we rely on them? *Pak J Surg* 2002; 18:27-30.
20. Mohammed AA, Daghaman NA, Aboud SM, Oshibi HO. The diagnostic value of C-reactive protein, white blood cell count and neutrophil percentage in childhood appendicitis. *Saudi Med J* 2004;25: 1212-5.
21. Shakhatreh HS. The accuracy of C-reactive protein in the diagnosis of acute appendicitis compared with that of clinical diagnosis. *Med Arh* 2000; 54:109-10.
22. Flum DR, Koepsell T. The clinical and economic correlates of misdiagnosed appendicitis: nation wide analysis. *Arch Surg* 2002; 137:799-804.
23. Richter M, Laffer U, Ayer G. Is appendectomy really performed too frequently? Results of the prospective multi center study of the Swiss Society of General Surgery. *Swiss Surg* 2000; 6:101-7.
24. Ali N, Sadiq M, Bacha J, Hadi G. Correlation of clinical and histological diagnosis of acute appendicitis. *J Postgrad Med Inst* 2003; 17:254-7.
25. Cardall T, Glasser J, Guss DA. Clinical value of the total white blood cell count and temperature in the evaluation of patients with suspected appendicitis. *Acad Emerg Med* 2004; 11:1021-7.
26. Khalid K, Ahmad N, Farooq O, Anjum I, Sial GA. Acute appendicitis - laboratory dependence can be misleading: audit of 211 cases. *J Coll Physicians Surg Pak* 2001; 11:434-7.
27. Andersson RE, Hugander A, Ravn H. Repeated clinical and laboratory examinations in patients with an equivocal diagnosis of appendicitis. *World Surg* 2000; 24:479-85.
28. Birchley D. Patients with clinical acute appendicitis should have pre-operative full blood count and C-reactive protein assays. *Ann R Coll Surg Engl* 2006; 88:27-32.
29. Wu HP, Lin CY, Chang CF, Chang YJ, Huang CY. Predictive value of C-reactive protein at different cutoff levels in acute appendicitis. *Am J Emerg Med* 2005; 23:449-53.
30. Asfar S, Safar H, Khoursheed M, Dashti H, Al-Bader A. Would measurement of C-reactive protein reduce the rate of negative exploration for acute appendicitis? *J R Coll Surg Edinb* 2000; 45: 21-4.
31. Yang HR, Wang YC, Chung PK, Chen WK, Jeng LB, Chen RJ. Laboratory tests in patients with acute appendicitis. *ANZ J Surg* 2006;76:71-4.
32. Yildirim O, Solak C, Kocer B, Unal B. The role of serum inflammatory markers in acute appendicitis and their success in preventing negative laparotomy. *J Invest Surg* 2006; 19:345-52.
33. Chopal FG, Ahmed BSH, Ahmed M, Ahmed M, Khan JS, et al. Role of TLC and C-Reactive Protein in the diagnosis of Acute Appendicitis. *J Surg Pak* 2003; 8:14-7.
34. Eryilmaz R, Sahin M, Alimoglu O, Bas G, Ozkan OV. The value of C-reactive protein and leucocyte count in preventing negative appendectomies. *Ulus Travma Derg* 2001; 7:142-5.

Compare the Effectiveness of Prostaglandin E2 Vaginal Gel Versus Vaginal Tablets for the Induction of Labour at Term

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ABSTRACT

Objective: To compare the effectiveness of prostaglandin E2 vaginal gel versus vaginal tablets for the induction of labour at term.

Study Design: Retrospective comparative study

Place and Duration of Study: This study was conducted in Gynaecology and obstetric unit B, Lady Reading Hospital Peshawar, from 1st January 2013 till 31st December 2014.

Materials and Methods: Study population was women with singleton, term pregnancy with cephalic presentation undergoing induction of labour after 37 weeks of gestation. Prostaglandin E2 (PGE2) vaginal tablets (3 mg) or vaginal (2 mg) was administered at 6-hourly intervals, two doses administered. Main outcome measured was rate of failed induction of labour, besides failed induction in primigravida and multigravida and mode of delivery was also observed in both groups. Descriptive statistics was used to analyze the data and the results are expressed in the form of frequency and percentages.

Results: The number of patients induced with PGE2 tablet (3mg) were 39.71% (n=563) while 60.20 (n=761) were induced with PGE2 gel (2mg). It was observed that failed induction was more in patients induced with PGE2 tablets 14.11% (n=71) as compared to PGE2 gel 8.67% (n= 66). Sub analysis showed failed induction was more in primigravida as compared to multigravid women. Spontaneous vaginal birth was found to be the most common mode of delivery 75.31% (n=952)

Conclusion: Prostaglandin E2 vaginal gel is superior to vaginal tablets for the induction of labour.

Key Words: Induction of labour, Failed induction, Prostaglandin E2 tablet, Prostaglandin E2 Gel.

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INTRODUCTION

Induction of labour (IOL) is a common procedure, about 20% of women undergo IOL for different reasons.. Induction of labour is artificial initiation of uterine contractions resulting in birth of baby. IOL is indicated only when the benefits of delivering the baby is more than continuing the pregnancy.¹

There are different methods of IOL at term gestation, commonly used methods are artificial rupture of membrane, oxytocin and prostaglandins. Vaginal PGE2 is the preferred method of induction of labour, unless it is contraindicated. It can be given in form of gel, tablet or controlled release pessary. The endorsed regimens is that two doses of vaginal PGE2 tablets or gel is administered 6 hours apart if labour is not established (up to a maximum of two doses) or one cycle of vaginal PGE2 controlled release pessary only one dose over 24 hours. In case of uneffaced cervix

artificial rupture of the fetal membranes is usually difficult, the likelihood of failed induction of labour is less if PGE2 is administered in these cases.^{2,3}

Failed induction is defined as failure to establish labour after one cycle of treatment, which is administration of two vaginal PGE2 tablets (3 mg) or gel (1–2 mg) at 6-hourly intervals, or one PGE2 controlled released pessary (10 mg) over 24 hours. It is estimated that a failed induction occur in 15% of cases .

Failed induction of labour with PGE2 tablet versus Gel is not analysed in previous studies till date, these studies reported that need for augmentation of labour with oxytocin was reduced with PGE2 gel , and that there is no difference among the two in terms of achievement of vaginal delivery or need for caesarean section. One study in which primary outcome analyzed was overall time interval from induction to delivery reported that PGE2 vaginal gel is more effective as compared to vaginal tablets for the induction of labour.⁴⁻¹⁰

This study was conducted to compare the clinical effectiveness of the two formulations (PGE2 gel and tablet) in terms of failed induction which is not analyzed in previously conducted studies.

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MATERIALS AND METHODS

This study was retrospective comparative study conducted in Gynae B unit LRH from 1st January 2013 till 31st December 2014. Patients with singleton term pregnancy with cephalic presentation induced with prostaglandin E2 tab/gel were included in this study, patients with multiple pregnancy, previous one or more caesarean sections were excluded. Those patients with bishop score of more than 6 were also not included. Total number of patient induced with PGE2 were 1264, out of these 39.74 % (n=503) were induced with PGE2 tablet (2mg) and 60.20 (n=761) were induced with prostaglandin E2 gel, failed IOL was noticed in both groups. A criterion of failed induction was, failure to initiate labour after one cycle of treatment, which consist of the vaginal administration of two PGE2 tablets (3mg) or gel (2 mg) at 6-hours apart ⁽³⁾. Besides failed induction of labour was also observed in primigravida versus multigravida and mode of delivery was also noticed in patients induced with PGE2 tablet and Gel. Descriptive statistics was used to analyze the data and the results are expressed in the form of frequency and percentages.

RESULTS

Total numbers of patients fulfilling the induction criteria were 1264. Out of them 59.24% (n= 749) were primigravida while multigravida were 40.74% (n=515). Failed induction was more in PG as compared to multigravida as shown in table 1.

Table No.1: Failed IOL in primigravida versus multigravida

Induction of labour	No.		Failed IOL	
	No.	%	No.	%
Primigravida	749	59.24	88	11.74
Multigravida	515	40.76	45	9.51

Table No.2: Failed IOL with PGE2 Tablet and PGE2 gel

	No.		Failed IOL	
	No.	%	No.	%
IOL with PGE2 Tablet	503	39.74	71	14.11
IOL with PGE2 gel	761	60.20	66	8.67

Table No.3: Mode of delivery

Mode of delivery	PGE2 Tablet		PGE2 gel		Overall	
	No.	%	No.	%	No.	%
Caesarean section	71	14.1	66	8.7	137	10.8
Instrumental delivery	74	14.7	101	13.3	175	13.8
Spontaneous vaginal birth	358	71.2	594	78.0	952	75.4

The main outcome observed was failed induction in both groups. It was observed that failed induction was

more in patients induced with PGE2 tablets as compared to PGE2 gel as shown in Table 2. Mode of delivery was observed and Spontaneous vaginal birth was found to be the most common mode of delivery (75.31%) in both groups, caesarean section were more in patients induced with PGE2 tablet as compared to PGE2 tablet as shown in table 3.

DISCUSSION

The rate of induction of labour (IOL) is increasing throughout the world along with rise in cases of failed induction, it has a psychological impact on patient as well as on her management plan, method of induction should be evaluated for each patient accordingly. Vaginal PGE2 is favoured method of induction of labour Few studies are available comparing PGE2 tablet and gel. ^{3, 11}

In this study it was observed that failed induction of labour is more in case of PGE2 tablet 14.11%(n=71) as compared to PGE2 gel 8.67% (n= 66), while another similar study reported nearly similar results, where women administered with PGE2 tablet had increase rate of failed induction of labour (10.84 versus 1.22%). ¹⁰

Nulliparity is risk factor for failed induction. In our study failed induction was observed more in primigravida as compared to multigravida (11.74% versus 9.51%), these results are comparable to another study where ripening of cervix was observed in primigravida induced with PGE2 tablet and gel and it was found that number of patients requiring Caesarean section is less in PGE2 gel group as compared to those induced with PGE2 tablet (30 vs. 15%). Another study comparing multiparous and nulliparous patients reported that Failed induction was 4.6 times more likely in nulliparous patients. ^{4, 12}

Mode of delivery was observed in both groups and it was found that in patients induced with PGE2 tablet rate of caesarean section (14.11% versus 8.67%) and instrumental delivery was high as compared to PGE2 gel group (14.71% versus 13.27%), in similar study rate of caesarean section was 33.7% (n=28) in PGE2 tablet group versus 35.37%(n=29) in patients induced with PGE2 gel while instrumental delivery was 24.1% (n=20) versus 16.85% (n=13). ¹⁰

CONCLUSION

In conclusion PGE2 gel should be used in preference over PGE2 tablet, as there are fewer cases of failed induction and caesarean section with PGE2 gel.

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

REFERENCES

1. Royal College of Obstetricians and Gynaecologists; RCOG Clinical Effectiveness Support Unit. Induction of labour. Evidence-based

- Clinical Guideline Number 9. London: RCOG Press, 2001.
2. Kelly AJ, Cavanaugh J, Thomas J. Vaginal prostaglandin (PGE2 and PGF2a) for Induction of labour at term. Cochrane Database Syst Rev 2003; 4:CD003101.
 3. National Collaborating Centre for Women's and Children's Health. Induction of labour. Clinical Guideline. London: NICE press, 2008.
 4. Mahmood TA. A prospective comparative study on the use of prostaglandin E2 gel (2 mg) and prostaglandin E2 tablet (3 mg) for the induction of labour in primigravid women with unfavourable cervix. Eur J Obstet Gynecol Reprod Biol 1989; 33(2):169–75.
 5. Murray HG, Buonocore A, Hawley J. A randomized trial of two preparations of vaginal prostaglandin for pre-induction cervical ripening. Obstet Gynecol 1995;86(6):880–5.
 6. Greer IA, MacLaren M, Calder AA. Vaginal administration of PGE2 for induction of labour stimulates endogenous PGF2a production. Acta Obstet Gynecol Scand 1990;69:621–5.
 7. Payne E, Reed MF, Cietak KA, Anderson WR, Sant-Cassia LJ. A comparison of prostaglandin E2 vaginal tablets with vaginal gel for ripening the unfavourable cervix and induction of labour. J Obstet Gynaecol 1993;13:103–6.
 8. Al-Sebai MAH, Manasse PR. Induction of labour in primigravida women with an unfavourable cervix: a prospective comparative study of prostaglandin E2 vaginal tablets and gel. J Obstet Gynaecol 1993;13:112–3.
 9. Kelly AJ, Malik S, Smith L, Kavanagh J, Thomas J. Vaginal prostaglandin (PGE2 and PGF2a) for induction of labour at term. Cochrane Database Syst Rev 2009;4:CD003246.
 10. Taher S, Inder J, Soltan S, Eliahoo J, Edmonds D, Bennett P. Prostaglandin E2 vaginal gel or tablets for the induction of labour at term: a randomised controlled trial. BJOG 2011;118:719–725.
 11. Talaulikar VS, Arulkumaran S. Failed induction of labor: strategies to improve the success rates. Obstet Gynecol Surv 2011;66(11):717–28.
 12. Khan NB, Ahmed M, Malik A, Sheikh L. Factors associated with failed induction of labour in a secondary care hospital. JPMA 2012;1.

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Histopathological Evaluation of Uterine Curettings in Patients with Abnormal Uterine Bleeding

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ABSTRACT

Objective: The main objective of the present study is to determine the histopathological patterns and diagnostic value of endometrial curettings in patients presenting with abnormal uterine bleeding.

Study Design: A prospective study

Place and Duration of Study: This study was conducted at Department of Pathology Liaquat University of Medical and Health Sciences Jamshoro during March 2010 to February 2011.

Materials and Methods: A total of 100 cases of endometrial curettage were processed for routine staining with Haematoxylin and Eosin and slides were evaluated for histopathological diagnosis.

Results: The results showed that patient's age ranged between 40-52 years and most of the patients about 77% presented with menorrhagia. The histological findings showed normal phase (Proliferative and Secretory phase) of menstrual cycle in 52% of cases followed by simple hyperplasia without atypia 23%, chronic endometritis 13%, polyp 2%, tuberculous endometritis 2%, anovulatory cycle 1%, a ovulatory cycle with chronic endometritis 1%, atrophic changes 1%, atypical complex hyperplasia 2% and malignancy in 3% of cases. The Simple hyperplasia 23% and chronic endometritis 13% were the commonest pathological alteration. The accidental findings of organic lesions including polyps and malignancy in 5% cases focused the diagnostic importance of curettage in patients presenting with abnormal uterine bleeding.

Conclusion: It is concluded that simple hyperplasia without atypia and chronic endometritis are most important causes of abnormal uterine bleeding in the perimenopausal age groups.

Key Words: Abnormal uterine bleeding, Uterine curettage, Menorrhagia

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INTRODUCTION

In gynaecological practice majority of the patients seen at out patients clinics usually present with Abnormal uterine bleeding (AUB).

Bleeding is considered abnormal when either the abnormalities occur in total duration of the menstrual cycle i-e less than 21 days or more than 35 days, or there are abnormalities in duration of menstrual flow i-e less than two days or more than seven days.^{1,2}

Both the dysfunctional uterine bleeding (DUB) and bleeding due to structural lesions are considered as Abnormal uterine bleeding. Of these dysfunctional bleeding is mostly characterized by heavy and regular periods (i-e, menorrhagia) due to anovulatory cycles. Structural lesions of abnormal uterine bleeding include leiomyoma, adenomyosis, endometrial polyp,

adenocarcinoma endometrium and complications of pregnancy. Abnormal bleeding can also result from use of contraceptive as well.^{1,3}

In peri & postmenopausal women it is very essential to exclude endometrial carcinoma, endometrial hyperplasia & structural causes, such as uterine fibroids, comprise the main pathology in younger women.⁴

According to WHO, perimenopause is the period 2 – 8 years before menopause and 1 year after the menopause. It is better defined as the phase generally occurring around 40-50 years of age, during which the regular cycle of a women transition to a pattern of irregular cycles.⁵

There are variety of methods used to investigate patients with AUB, such as, endometrial cytology, transvaginal ultrasound, hysteroscopy, D & C and endometrial biopsy.⁶

The recommendation regarding investigation of AUB is that women, over the age of 45, should be investigated with endometrial biopsy, which is frequently being obtained by uterine curettage (D & C) and this is performed as an inpatient procedure⁴. This is the most

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common procedure used to evaluate the endometrial cavity of a patient with AUB.⁷ However the value of uterine curettage is great in the establishment of histopathological diagnosis.⁵

The main objective of the present study is to determine the histopathological patterns and diagnostic value of endometrial curettings in patients presenting with abnormal uterine bleeding.

MATERIALS AND METHODS

This prospective study was conducted at Department of Pathology Liaquat University of Medical and Health Sciences Jamshoro during March 2010 to February 2011.

Sample Size: 100 cases of abnormal uterine bleeding clinically diagnosed followed by dilatation and curettage.

Sampling Technique: 100 consecutive cases were studied prospectively.

Inclusion Criteria: All perimenopausal women with abnormal uterine bleeding.

Exclusion Criteria: Patients with lower genital tract infection and known case of cervical stenosis. Those cases where biopsy specimen show autolytic changes.

Data collection method: A total of 100 cases of endometrial curettage with abnormal uterine bleeding were selected from the specimens received from all Gynae wards Liaquat University Hospital, Hyderabad and data was collected regarding patient's age, parity, pattern of bleeding and dominant histopathological features using a printed proforma. Detailed history was taken from the hospital records.

The specimens obtained were fixed in 10% formalin and were further processed for paraffin blocks. Three to five microns sections were taken and stained with Haematoxyllene and Eosin stain. All slides were prepared and viewed under light microscope. Different morphological features were observed and findings were recorded on the proforma. The hyperplasias and malignancies were diagnosed according to the W.H.O criteria.⁸

Data management and analysis: Data regarding age, parity, pattern of bleeding, microscopic features were analyzed using SPSS version 11. Categorical data were expressed using proportions and percentages.

Ethical considerations: Confidentiality of data was maintained throughout the study. Permission was obtained from LUMHS administration.

RESULTS

A total of 100 endometrial curettings from 100 patients in perimenopausal age with abnormal uterine bleeding were studied from March 2010 to February 2011. The ages of patients ranged from 40-52 years, with a mean age of 44.17 ± 3.44 . All were in perimenopausal age. Majority of patients were multiparous (73%) with more than five pregnancies while only 5 were nulliparous. The incidence was high in parity III (13%) and grand multipara (73%) (Table 1).

This shows incidence of abnormal uterine bleeding increases as the parity increases. The pattern of bleeding in majority of patients was menorrhagia (75%), followed by metrorrhagia (10%), menometrorrhagia (7%), Polymenorrhea (6%) and polymenorrhagia (2%). Most of the cases of menorrhagia, metrorrhagia, menometrorrhagia, Polymenorrhea were found in the age group 40-45 years (Table 2).

Table No.1: Correlation of 100 cases of AUB with of age and parity

Parity	40-45 years	46-50 years	> 50 years	Total
0	3(3%)	2(2%)	0	5(5%)
I	2(2%)	0	0	2(2%)
II	3(3%)	4(4%)	0	7(7%)
III	13(13%)	0	0	13(13%)
Grand multipara	47(47%)	20(20%)	6(6%)	73(73%)
Total	68(68%)	26(26%)	6(6%)	100

Table No.2: Clinical Presentations of abnormal uterine bleeding in various age groups

Symptoms	40-45 Years	45-50 Years	> 50 Years	Total
Menorrhagia	49	20	6	75
Metrorrhagia	8	2	0	10
Polymenorrhea	5	1	0	6
Menometrorrhagia	6	1	0	7
Polymenorrhagea	0	2	0	2
Total cases	68	26	6	100

Table No.3: Histological diagnosis in various age groups (n=100)

Histological pattern	40-45 Years	45-50 Years	> 50 Years	Total
Secretory Phase	25	3	0	28
Proliferative Phase	22	2	0	24
Chronic endometritis	9	4	0	13
Simple hyperplasia without atypia	8	14	1	23
Tuberculous endometritis	2	0	0	2
Atypical complex hyperplasia	0	0	2	2
Endometrial polyp	0	2	0	2
Squamous cell carcinoma	0	0	2	2
Anovulatory cycle	1	0	0	1
Anovulatory cycle + chronic endometritis	1	0	0	1
Adenocarcinoma	0	0	1	1
Atrophic changes	0	1	0	1

Histopathological report revealed that normal physiological phases of menstrual cycle such as secretory phase in 28% cases and proliferative phase in 24% cases and they were found most common histological finding i-e 52% cases (Table 3).

Endometrial pathology was detected in 48% cases. The leading pathology was simple hyperplasia without atypia (23%). Other pathologies were found, such as, endometrial polyp 2%, tuberculous endometritis 2%, atypical complex hyperplasia 2%, squamous cell carcinoma 2% (invasion from the cervix into endometrium), endometrial adenocarcinoma 1%, anovulatory cycle in 1%, anovulatory cycle with chronic endometritis 1%. Atrophic endometrium was found only in 1% cases (Table 3).

Simple hyperplasia without atypia was found mostly in age group 45-50 years, chronic endometritis in 40-45 years, endometrial polyp in 45-50 years, atypical complex hyperplasia and malignancy in more than 50 years age group (Table 3).

DISCUSSION

In gynaecological practice majority of the patients seen at out patients clinics usually present with Abnormal uterine bleeding (AUB).¹ Approximately 20% of patients have this complaint. This proportion rises to 69% when the perimenopausal and postmenopausal age groups are considered.⁹ The endometrium shows irregular changes if there is increased resistance of gonadotrophic stimulation due to low levels of estrogen or due to decreased number of ovarian follicles in perimenopausal women.¹⁰ The commonest procedure used to evaluate the endometrial cavity of a patient with AUB is dilatation and curettage.⁹ Endometrial curettage is also advised in patients with abnormal uterine bleeding to exclude the possibility of structural lesions, such as leiomyoma, adenomyosis, endometrial polyp, adenocarcinoma endometrium, hormone response and incomplete abortion as a cause of bleeding. The more irregular the bleeding, the greater is the indication for dilatation and curettage.¹¹

Our study also revealed that with the increasing age the severity of the menstrual disorders also increased. The commonest age group in our patients was 40-45 years (68%), accounting for higher number of cases as compared to 48%¹², 38.06%¹³ in other studies.

In our study most common presenting symptom was menorrhagia (75%), however more number of cases were found in other studies.^{12, 13} Normal physiological phases of menstrual cycle, such as secretory and proliferative phases of endometrium, were the more common histological findings present in 28% and 24% cases respectively in this study. This result correlated with other studies done previously.^{12, 13} In this study, proliferative phase was found to be 24%, this is because in cases of AUB, diagnostic D & C can be performed at any stage of cycle and clinically proliferative and

secretory phase of cycle cannot be distinguished due to irregularity of cycle, until diagnosed on histopathological examination.

In our study, chronic endometritis was found in 13% cases which was similar to Muzaffar's study¹², but it is 24%¹¹ and 3.28 %¹⁴ in other studies. Chronic endometritis is characterized by irregular fibrous stroma and lymphocyte and plasma cell infiltration.¹¹ It is usually caused by pregnancy or abortion or may be the result of intrauterine contraceptive device, viral, chlamydial or gonococcal infection.¹² The possible cause in our setup may be incomplete abortion and not properly handled due to inadequate medical cover and ignorance. The extension of this infection may be contributing to high incidence of pelvic inflammatory disease in our country.¹¹

Tuberculous endometritis has been detected in 2% of all our cases undergoing curettage for abnormal uterine bleeding, which is compared to 4%¹¹ in one study. It is the important medical problem in Pakistan and India.¹⁵ Tuberculosis is the world's 2nd leading cause of death from a single infectious agent. Deaths from the disease are expected to increase to over 3.5 million per annum. Currently most of these cases and more than 98% of deaths occur in developing world.¹⁶ So that, tuberculous endometritis has to be looked for in all female patients presenting with AUB and should be considered in differential diagnosis of the abnormal uterine bleeding.

Hyperplasia was commonest endometrial pathology diagnosed (25%) in this study, among which simple hyperplasia without atypia (23%) and atypical complex hyperplasia (2%) and it is very much similar in one study.¹² Atypical complex hyperplasia compared favourably with these studies.^{11, 12} Endometrial hyperplasia is a precursor of endometrial carcinoma, the most common malignancy of female reproductive tract. It accounts for 6% of new female cases and 3% of female cancer deaths.¹⁷ Hyperplasia is classified according to two criteria. I.e. glandular complexity and nuclear atypicity. According to new ISGP, FIGO and WHO classification (2000), there are four diagnostic categories of endometrial hyperplasia: 1. Simple hyperplasia without atypia, 2. Complex hyperplasia without atypia, 3. Atypical simple hyperplasia, 4. Atypical complex hyperplasia.¹⁸ If it is treated in time, incidence can be reduced and early treatment can increase life expectancy and quality in women over 45 years. Diagnostic curettage remains the "gold standard" for its diagnosis.⁸

As the women get elder, the incidence of structural abnormality including malignancy increases.¹⁰ We have found 3% of all patients had malignancy (of endometrium/endocervix) and it is compared to other study in which 17% patients had malignancies.¹⁰ The reason for this difference is, we have taken all patients in a perimenopausal age and the incidence of

malignancy is very much high in postmenopausal bleeding.

The percentage of atrophic endometrium was 1% in present study which was compared to other studies as 1.3%¹³ and 2%¹⁴ which is just similar to present study. Endometrial polyps were found lesser as compared to 3.2%³ in one study. It is associated with decreased menstrual cycle lengths, endometriosis and decreased parity. Larger polyps are more likely to cause abnormal bleeding.

CONCLUSION

In conclusion, the abnormal uterine bleeding is common in the age group 40-45 years and the incidence increases as the parity increases. Histopathologically, simple hyperplasia without atypia and chronic endometritis are most important causes of abnormal uterine bleeding in the perimenopausal age groups. Fortunately, the frequencies of uterine malignancy (including cervix) is lower in our country as compared to studies conducted by western countries.

Recommendation: It is recommended that every woman with abnormal uterine bleeding of perimenopausal age should be evaluated properly and diagnostic curettage should be done for early detection of malignancy.

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

REFERENCES

1. Khan S, Hameed S, Umber A. Histopathological pattern of endometrium on diagnostic dilatation and curettage in patients with abnormal uterine bleeding. *Annals* 2011;17:166-70.
2. Fraser IS, Critchley HO, Broder M, Munro MG. The FIGO recommendation on terminologies and definitions for normal and abnormal uterine bleeding. *Semin Reprod Med* 2011;29:383-90.
3. Ely JW, Kennedy CM, Clark EC, Bowdler NC. Abnormal uterine bleeding: A management algorithm. *J Am Board of Fam Med* 2006;590-602.
4. Hunter DC, McClure N. Abnormal uterine bleeding: An evaluation of endometrial biopsy, vaginal ultrasound and outpatient hysteroscopy. *Ulster Med J* 2001;70:25-30.
5. Bhosle, Fonseca M. Evaluation and histopathological correlation of abnormal uterine bleeding in perimenopausal women. *Bombay Hospital J* 2010;52:69-72.
6. Tabata T, Yamawaki T, Ida M, Nishimura K, Nose Y, Yabana T. Clinical value of dilatation and curettage for abnormal uterine bleeding. *Arch Gynecol Obstet* 2001;264:174-6.
7. Madan SM, Al-Jufairi ZA. Abnormal uterine bleeding. Diagnostic value of hysteroscopy. *SMJ* 2001;22:153-6.
8. Silverberg SG. Problems in the differential diagnosis of endometrial hyperplasia and carcinoma. *Mod Pathol* 2000;13:309-27.
9. Jyotsna, Kamlesh M, Sharma S. Role of hysteroscopy and laparoscopy in evaluation of abnormal uterine bleeding. *J Med Edu and Res* 2004;6:23-27.
10. Dangal G. A study of endometrium of patients with abnormal uterine bleeding at Chitwan valley, Kathmandu Uni Med J 2003;1:110-12.
11. Luqman M, Bukhari L. Abnormal/excessive uterine hemorrhage: A histopathological study. *Pak J Pathol* 1998;9:22-4.
12. Muzaffar M, Rasheed S, Iqbal W, Akhter KA, Rehman M, Khan MA. Menstrual Irregularities with excessive blood loss: A clinico-pathological correlation. *JPMA* 2005;55:486-89.
13. Yusuf NW, Nadeem R, Yusuf AW, Rehman R. Dysfunctional uterine bleeding: A retrospective clinicomorphological study over two years. *Pak J Obstet & Gynecol* 1996; 9:27-30.
14. Moghal N. Diagnostic value of endometrial curettage in abnormal uterine bleeding. A histopathological study *J Pak Med Assoc* 1997;47: 295-9.
15. Nawaz K. Frequency of endometrial tuberculosis: A histopathological study of endometrial specimens. *JPMI* 2005;19:97-100.
16. Qureshi RN, Samad S, Hamid R. Female genital tract tuberculosis revised. *JPMA* 2001;51:16-18.
17. Takreem A, Danish N, Razaq S. Incidence of endometrial hyperplasia in 100 cases presenting with polymenorrhagia/menorrhagia in perimenopausal women. *J Ayub Med Coll Abbottabad* 2009; 21:60-63.
18. Barati M, Masihi S, Ilkhan S. Location, size and clinical symptoms of uterine polyps. *Pak J Med Sci* 2010;26:380-3.

Serum Magnesium Level in Migraineurs Versus Non Migraineurs

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ABSTRACT

Objective: The objective is to observe relationship between low serum magnesium level and Migraine.

Study Design: Prospective Observational.

Place and Duration of Study: This study was conducted in Dow University Hospital, Dow University of Health Sciences, Karachi from 1st January 2013 to 31st December 2014.

Materials and Methods: One hundred and fifty patients attending the medical and Neurology OPD at Dow University Hospital were included in study. They were diagnosed according to International Headache Society (IHS) criteria for migraine headache.

Results: 150 patients were enrolled in study 49 (32.7%) were male and 101 (67.3%) were female patients mean age was 28 (± 6.2) years, After excluding other causes migraine was diagnosed in 102 (68%) patients. Out of 102 patients 71 (69.7%) were have low serum magnesium level. In the remaining patients with non migrainous headache, only 6 patients (12.5%) have low serum magnesium level because of some other causes for example medications.

Conclusion: Migraine is frequently associated with Serum low level of Magnesium compare to patient with non migrainous headache.

Key Words: Serum Magnesium, Headache, Migraine

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INTRODUCTION

Migraine is a neurological disorder that usually occurred with the constitutional symptoms like nausea, vomiting and photophobia that disturb patients' daily routine activities. The prevalence of migraine in women is 3-20%, and in men is 4-6%. About 50% patients came to neurology OPD with complaints of Headache have migraine.

The exact pathology of migraine is not clear. Various researches had been done that indicate the change in the vascular tone and increased brain irritability can cause migraine headache.

There are various factors have been suggested for increased irritability of brain. One of the factors is low serum magnesium level. Low serum magnesium level can cause opening of calcium channels, leads to increased intracellular calcium, which in turn leads to release of glutamate, and increased concentration of extracellular potassium, which lastly causes brain depression in migraine¹. It has been proposed that low serum magnesium is involved in pathogenesis of migraine by vasodilation, preventing platelet aggregation, and the stabilization of cell

membranes². The conclusion of this study was, low serum magnesium levels and to some extent low salivary magnesium levels indicate the deficiency of brain extracellular magnesium, which usually seen in patients with migraine either during or between the acute headache².

Magnesium deficiency is related with release of excitatory neurotransmitters such as acetylcholine and serotonin³.

The purpose of our study was to determine serum magnesium levels in patients with migraine in this part of world.

MATERIALS AND METHODS

The data was collected by face to face history taking, clinical examination including optic fundoscopy and baseline laboratory investigations. Brain imaging was also done in all the suspected cases to rule out other causes of headache. The blood samples to assess serum magnesium levels were collected between 8 a.m. to 11 a.m. The reference value of 1.8-3.6 mg/dL or 1.5-3.0 mmol/L was considered normal serum magnesium level.

Inclusion Criteria: One hundred and fifty migraine patients will randomly be selected. All patients were more than 18 years and they had first episode of headache before the age of 50 years. The patients were selected by using International Headache Society criteria for migraine⁴. Serum magnesium level will

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measure with spectrophotometry technique during Headache free period. The patients are selected who had not taking prophylactic medications like beta blockers, calcium channel blockers, ortopiramate for 1 month or more. The patients were included who were headache free for 1 week.

Exclusion Criteria: Patients who concurrently suffered from other types of headache for example headache due to hypertension, raised intracranial pressure, sinusitis, or who were on certain medications which increase the renal excretion of magnesium for example aminoglycoside, furosemide, acetazolamide, and thiazides etc. were excluded from the study.

Data analysis: All the statistical analyses were performed using SPSS version 18.0.

RESULTS

Between 1st January 2014 to 31 December 2014, the patients, who visited outpatient clinics of Neurology and medicine, at Dow University Hospital with the complain of headache were included in this study. 150 patients were selected with Primary Headache for this study. They were investigated for secondary causes if headache and were diagnosed according to International Headache Society criteria for Migraine.

Age Distribution: The mean age was found 28 (± 6.2) years, when migraine found to be most prevalent. (Table: 1)

Gender Distribution: Out of 150 patients, 101 (67.3%) patients were female. Migraine was diagnosed in 76 (75.2%) females and in 26 (53.1%) male patients. 25 (24.8%) females had non migrainous headache. (Table 2).

Table No.1: Age Distribution

Age of Patients (Years)	Frequency (n=150)	Percentage (%)
<30	92	61.3
>30	58	38.7

Mean Age: 28 (± 6.2) years

Table No.2: Gender Distribution

Total Number of Patients n=150	Male n=49 (32.7%)	Female n=101 (67.3%)
Migraine	26 (53.1%)	76 (75.2%)
Non Migraine	23 (46.9%)	25 (24.8%)

Table No.3: Serum Magnesium Deficiency

Total Number of Patients n=150	Low Serum Magnesium	Normal Serum Magnesium
Migraine Headache n = 102	71 (69.7%)	31 (30.3%)
Non Migraine Headache n = 48	06 (12.5%)	42 (87.5%)

Serum Magnesium and Migraine: Out of 102 patients who were diagnosed as a case of migraine, 71 (69.7%) patients have low serum while 31 (30.3%) patients have normal serum magnesium levels. Six Patients with non migrainous headache for example cluster headache, chronic daily headache or hemicrania had low serum magnesium level because of some other causes. (Table 3) Forty two (87.5%) patients had normal serum magnesium level and they had non migrainous headache.

DISCUSSION

This study focus on the low level of serum Magnesium in patients with migraine in comparison with headache other than migraine. According to a study published in 2011, serum hypomagnesaemia was frequently seen in migraine patients than the normal persons and associated with the increase frequency of migraine attacks, which support the use of oral or intravenous magnesium both in prevention and treatment of acute migraine⁵.

Another study published in Cephalgia, showed that oral magnesium can be given as a prophylaxis of Migraine⁶. Serum magnesium in migraine patients found in significantly lower concentration than the normal peoples and related to the increase frequency of headache, supporting the prophylactic use of magnesium and to abort the acute headache (Mahdavi N, Tarigat EA)⁷.

Sarchielli and his associates⁸ studied that the patients with classical or common migraine and those who had tension-type of headache showed considerably lower levels of serum and salivary magnesium concentrations in the inter-ictal periods than a group of healthy young individuals. This study also signifies that serum magnesium levels further decreased during the acute headache in almost all the migraineurs. Similar results were found in our study which showed 69.7 % patients had significantly low serum magnesium level, as compare to patients with non migrainous type of head ache, who had only 12.5% positive result.

Some studies also shown that patients with migraine or cluster headache have low levels of magnesium⁹. In contrast, our study showed low serum magnesium level mostly in migraine patients, though some of the patients found to have cluster headache.

A study published in Cephalgia, showed about 50% reduction in intensity and duration of Migraine headache after the prophylaxis therapy with Magnesium¹⁰. According to American Headache Society, Magnesium can be used for migraine prophylaxis.

Another study done in Italy suggested hyper-excitability of Neurons because of low level of serum magnesium in patients with migraine^{11,12}.

Oral or parenteral magnesium can be used as a therapeutic drug for the prophylaxis and treatment of acute migraine headache¹³.

CONCLUSION

Migraine is frequently associated with decrease serum level of magnesium. So according to our hypothesis, replacing serum magnesium either orally or parentally will be a better measure to control migrainous headache, either alone or in combination with other prophylactic medications, for example beta blockers, calcium channel blockers or sodium valproate.

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

REFERENCES

1. Bussone G. Pathophysiology of migraine. *Neurol Sci* 2004;25 Suppl 3:239-241.
2. McCarty MF. Magnesium taurate and fish oil for prevention of migraine. *Med Hypotheses* 1996; 47(6):461-6.
3. Gupta VK. Pharmacotherapeutics of migraine and the blood-brain barrier: serendipity, empiricism, hope, and hype. *Med Gen Med* 2006;8:89.
4. Headache Classification Subcommittee of the International Headache Society. The International Classification of Headache Disorder. 2nd ed. *Cephalgia* 2004; 24 Suppl 1: 9-160.
5. Talebi M, Savadi-Oskouei D, Farhoudi M, Mohammadzade S, Ghaemmaghamihezaveh S, Hasani A, et al. Relation between serum magnesium level and migraine attacks. *Neurosciences (Riyadh)*. 2011;16(4):300-3.
6. Peikert A, Wilimzig C, Kohne R. Prophylaxis of Migrain with Oral Magnesium, *Cephalgia* 1996; 16(4):257-263.
7. Mahdavi R, Tarigat EA, Ebrahimi M, Talebi M, Ghaemmagami J. Effects of oral magnesium for migraine prophylaxis. *Pharmaceutical Sci* 2009; 15:103-108.
8. Sarchielli P, Coata G, Firenze C, Morucci P, Abbritti G, Gallai V. Serum and salivary magnesium levels in migraine and tension-type headache. Results in a group of adult patients. *Cephalgia* 1992;12(1):21-7.
9. Mauskop A, Altura BT, Altura BM. Serum ionized magnesium levels and serum ionized calcium/ionized magnesium ratios in women with menstrual migraine. *Headache* 2002;42: 242-248.
10. Pfaffenrath V, Wessely P, Meyer C, Magnesium in the prophylaxis of Migrain, A double Blind placebo controlled study. *Cephalgia* 1996;16: 436-440.
11. Aloisi P, Marrelli A, Porto C, Tozzi E, Cerone G. Visual evoked potentials and serum magnesium levels in juvenile migraine patients. *Headache* 1997;37(6):383-5.
12. Cete Y, Dora B, Ertan C, Ozdemir C, Oktay C. A randomized prospective placebo-controlled study of intravenous magnesium sulphate vs. Metoclopramide in the management of acute migraine attacks in the Emergency Department. *Cephalgia* 2005;25: 199-204.
13. Masoud A. Study on Relation Between Attacks of Migraine Headache and Serum- Magnesium Level, *Iranian J Publ Health* 2003;32(4)27-30.

Predicting Wellbeing in Irregular Shift Workers

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ABSTRACT

Objective: Objective of the study was to assess wellbeing and its relationship with sleep pattern from the biological rhythm science aspect.

Study Design: Cross sectional study

Place and Duration of Study: This study was carried out at Dow University Hospital. Dow university of Health Sciences Karachi from November 2013 to January 2014.

Materials and Methods: This was a non-interventional cross sectional study. Wellbeing was measured in the study subjects (health care provider) working in irregular shift. To profile wellbeing, the instrument used was an integrated questionnaire. This measuring tool has a established scale based on subjective feeling of wellbeing (happiness) where higher score suggested a higher level of wellbeing, low scores suggested a fragile level of wellbeing. Subjects were interviewed and their reply was documented. Influences of a misaligned sleep cycle was measured on positive emotion scale quantitatively.

Results: Results revealed a decreased strength of wellbeing amongst rotatory shift workers. Mean scores inferred from happiness scale in the present study was 3.75 ± 1.02 .

Conclusion: It was concluded that sleep/wake misalignment is associated with emotional fatigue. With the introduction of biofeedback as an intervention in certain stress related disease. It has become mandatory to open new windows and option which has become essential in experimental research for applied purpose.

Key Words: Sleep Cycle, Wellbeing, Shift Workers, Environment, Biological Rhythm.

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INTRODUCTION

An important need of psychosocial growth of human behavior is the want of emotional support and a happy feel for wellbeing. Wellbeing of an individual has now emerged as a dynamic equilibrium between environment and man. Subjective component of wellbeing according to psychologist is stated as quality of life which is unanimously accepted as an important component of a perfect life and happiness¹. The thoughts and perception that create psychological environment and the ability of the person to function in equilibrium within the environment is a major aspect of broad models of psychological efficiency. Appraisal of happiness or wellbeing is vital for certifying concepts and models of happiness². The significance of optimistic approach towards life and its evaluation is a method to examine human feelings and emotional functioning in order to raise and enhance productivity of an individual³. We chose sample of health care providers working in irregular shifts as our study population to analyze the role of misalign working environment and its effect on wellbeing⁴. Proximate research has explained the links between coordinated human body's biological rhythms for instance sleep

cycle with environment and psychological wellbeing. The hypothesis was if an environment is not synchronized, and if normal biological rhythm of an individual is made irregular as in rotating work in health care provider like nurses would it be possible by this type of working environment to result in sadness and whether misaligned sleep rhythms in irregular shift workers has psychological penalties^{5,6}.

Nurses and other health care providers have to be accessible to patients on a 24/7 basis which is only possible through irregular shift work, since their sleep cycle is not entrained, shift workers are often tired, irritated, and not happy⁷. A phenomenon called entrainment is described as a course during which two oscillating systems adjust with in the similar time. This specify the harmonization of endogenous physiological rhythms in the individual with an exogenous rhythm in the environment. There are various biological rhythms in human body, for example there is a and menstrual cycle (~30 days), sleep-wake/wake cycle (~24 hours), rapid-eye-movement sleep (~3 hours). Respiratory cycle made up of inspiration and expiration (~0.15-0.4 Hz), cardiac pulse (~1-2 Hz), and EEG activity (~1-100 Hz)⁸. Exhaustion and fatigue in shift workers is considered accountable for concentration loss, increases in errors and accidents. Moreover, the endogenous biological rhythm is subsequently distorted that influence quality of sleep, therefore result in to sleep

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disorders particularly in those , working in irregular shifts as compare to health care providers with fixed shifts⁹. A positive environment precede a healthy and positive behavior reduce human errors and is needed for better efficiency. It is observed that depression, somatic disturbances, sleep disorders, and burnout, are more commonly seen in over worked health care providers ,moreover, scarce sleep inhibits, time orientation, problem-solving capacity, and attention, that can further threaten patient safety¹⁰. All these factors compromise the quality of their life, satisfaction and health care they provide to the patients. The aim of this study was to evaluate the relationship between misaligned sleep/wake environment in human and subjective experience of positive emotion. Thus, precise and valid measures of happiness could be determined.

MATERIAL AND METHODS

This cross sectional design study was conducted at Dow University Hospital Karachi Ojha campus ,from November 2013 to January 2014 by convenient sampling technique .Entire eligible study population of health care providers working in rotatory schedule (n=110) were included. Informed consent was obtained from all respondents .Demographic characteristic of the subjects included age, education, and gender. Exclusion criteria comprised, Participants with history of any illness or drug abuse . Subjects were estimated by the Investigator who confirmed answer of each participant by means of integrated questionnaire (ToolPhenX Toolkit having psychosocial domain ,subjective happiness Scale By Sonja Lyubomirsky) to examine well being. This was a non-interventonal study therefore a formal ethical approval was not required by the institution, albeit, it fulfilled existing ethical standards. A formal written approval from the hospital administration was obtained. To examine data gathering process by the measuring instrument .A pilot study was conducted on 15 rotatory health care providers. The self-rating questionnaire included four components that assessed scores obtained by the individual 's response . The first question was pertinent to individual's general extent of happiness, next question was an assessment of the individual 's wellbeing with that of his or her peers. The last two questions were positively and negatively formatted questions about individuals that are either very happy or very unhappy. The subjects were asked to what degree the described characteristics apply to them. A higher rating indicated a better sense of wellbeing and lower scoring was indicative of fragile emotions . All data analysis was carried out on SPSS version 20 for windows. Quantitative variables were presented by their mean and SD values, the qualitative variables were presented by frequency and percentages. T-Test was employed at 0.05 level of significance to find out significant association of happiness with gender. A

nova was used to find out any difference between different groups with happiness ,results were considered significant at $P<0.05$.

RESULTS

The entire eligible subjects (health care provider) in rotatory shifts (n= 130) were enrolled in this study but we were able to analyze 110 Subjects because of incomplete information. Response rate of the study was 84.6%. Table.1 describe demographic features of the study population. Age range of the study population was from 16 to 56 years, mean age estimated was 27.94 ± 5.97 . Screening tool used in this study had 4 components (score range from 4-28)The mean score we obtained from study population on the measuring scale was 3.75 ± 1.02 . (Individual mean extent from 1.5-7.00) However mean scores based on gender , female secured 3.45 ± 0.89 and for male mean was 3.93 ± 1.06 . T-Test was employed to find any significant difference between the gender and results were found to be significantly different $P=0.015$ Based on functional job description. A nova was applied to find out any significant difference between different groups but result were not significant $P=0.116$.

Table No.1: Demographic features of study population . (n=104)

Variables	N	(%)	Mean $\pm$ S.D
Age (years)			28.14 ± 6.0
Gender			
Male	68	61.8	
Female	42	38.2	
Nurses	54	49.09	
Technicians	49	44.54	
Nurse Assistants	7	6.36	

Table No.2: Depicting the overall and individual Meanscores in different groups.

Overall score	3.75 ± 1.02
Nurses Score	3.93 ± 0.99
Technician's Score	3.63 ± 1.07
Assistant nurses score	3.20 ± 1.83

DISCUSSION

Our results supported the hypothesis of significant behavioral penalties in a highly fragmented sleep schedules these health care provider has to face due to the nature of their job. There was evidence of decreased strength of well beings amongst shift workers. These health care provider in the present study demonstrated an association between disturbed sleep rhythm and "stress" produced with the temporal organization of physiology resulting in behavioral penalties. This study reconfirmed the prior findings that happiness with life in shift workers was reduced. The current study was focused on subjective feeling of happiness. Appropriate assessment of happiness index

necessitates evaluation of one's own life, and positive and negative responses¹¹. Moreover, people can feel happy and euphoric without possessing the picture of a psychologically healthy and happy person. Another dilemma in irregular shift workers is that they eventually end up in burnout. Burnout, is a psychological defense mechanism that develop in to human psyche when they are under persistent mood stress and interpersonal conflicts or job-related trauma, it is defined by three features – emotional fatigue, depersonalization, and reduced personal achievement¹². Other studies has shown that nurses and other health care providers were sleepy at work hence were more prone to needle stick injuries, and sleep disorders were also common amongst nurses working in irregular shifts, linked with a multitude of complex, disorders and diseases with diverse pathology, such as diabetic autonomic neuropathy, hyperhidrosis, orthostatic intolerance/postural tachycardia syndrome¹³⁻¹⁴. Shift work disturbs sleep and natural biological rhythms in humans, which might increase psychosocial stress and predispose the individual to physiological disturbances related to the metabolic syndrome¹⁵⁻¹⁶. proximate research has evidenced the relationship where an extremely emotionally imbalanced incident followed immediate death of the individual¹⁷. Some other researches focused on subjective social provisions, like monetary security, and subjective health which did not appear as important predictors of happiness¹⁸. Furthermore, there was no sign that money act as mechanisms of happiness. Some of the conclusion of the subject of influence of income on happiness was resulted due to false assessment. Psychologists and sociologists usually examined subjective happiness against income, but there was dispute of income as the ideal scale. Another observation was, if an individual is suffering from hypomania he might report extremely positive feelings and euphoria with life without optimal daily functioning. Waterman pointed out that “experiences of eudaimonia are always accompanied by experiences of hedonia¹⁹. Positive effect and well-being is prerequisite for a balanced family unit. However it is significant that life satisfaction and happiness do not simply measure hedonic well-being. The hedonic events are intensely linked to eudaimonic features and ideal living. Beside hedonic and eudaimonic variance, some researchers tried to magnify this viewpoint through counting social dimension of individual happiness along with general development which include cognitive development, emotional development and social needs that had an important role and seemed to be relevant across most developmental stages, along with insight of the social depth of human functioning and satisfaction was broadly acknowledged. However, comprehensive social well-being had a broader vision. Females related marginally greater positive affect and life analysis, however they had more blue affect and

more stress. This trend was observed in the present study too, the mean wellbeing score determined in females was less as compare to males. However prior researches had established certain other factors likewise making person happy for instance as reported recently, older people living in combined family system were evidenced better on happiness scale, most notably a significant reduction in the experience of stress and anger. Smoking was significant major predictor of low well-being especially its emotional aspect, even when monetary basis and education are balanced. Smoking is in part genetically determined and is a known indicator of a tense personality^{20,21}

CONCLUSION

The current study demonstrated that irregular sleep cycle has injurious effect on the wellbeing of the individual. This negative impact of circadian rhythms on human physiology and the added time pressures which shift workers are subjected should be further investigated.

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REFERENCES

1. Hervás G, Vázquez C. Construction and validation of a measure of integrative well-being in seven languages: The Pemberton Happiness Index. *Health and Quality of Life Outcomes* 2013;11: 66-72.
2. Ryan RM, Deci EL. On happiness and human potential: A review of research on hedonic and eudaimonic well-being. *Annu Rev Psychol* 2001; 52:141-166.
3. Keyes CL, Annas J. Feeling good and functioning well: Distinctive concepts in ancient philosophy and contemporary science. *J Posit Psychol* 2009;4: 197-201.
4. Zencirci DA, Arslan S. Morning-evening type and burnout level as factors influencing sleep quality of shift nurses: a questionnaire study. *Croat Med J*. 2011; 52: 527-37.
5. Fitzpatrick JM, While AE, Roberts JD. Shift work and its impact upon nurse performance: current knowledge and research issues. *J AdvNurs* 1999;29(1):18-27.
6. Wirth M, Burch J, Violanti J, Burchfiel C, Fekedulegn D, Andrew M, Zhang H, et al. Shift work Duration and the Awakening Cortisol Response Among Police Officers. *Chronobiol Int* 2011;28(5): 446-457

7. Boivin DB, Tremblay GM, James FO. Working on atypical schedules. *Sleep Med* 2007;8(6): 578–589.
8. Ellis JR, Thayer FJ. Music and Autonomic Nervous System (Dys) function. *Music Percept*. 2010;27(4): 317–326.
9. Winwood PC, Lushington K. Disentangling the effects of psychological and physical work demands on sleep, recovery and maladaptive chronic stress outcomes within a large sample of Australian nurses. *J AdvNurs* 2006;56:679-89.
10. Coffey LC, Skipper JK, Jung FD. Nurses and shift work: effects on job performance and job-related stress. *J AdvNurs* 1988;(2):245–54.
11. Diener ED, Eunkook MS, Lucas ER, et al. subjective wellbeing. Three decades of progress. *psychological bulletin*. 1999;(125):276-302.
12. Maslach C, Jackson ES. The measurement of experienced burnout. *J Occupational Behaviour* 1981;2:99-113
13. Ellis RJ, Thayer JF. Music and Autonomic Nervous System (Dys) function. *Music Percept* 2010;27(4): 317–326.
14. Ray CA. Melatonin attenuates the sympathetic nerve responses to orthostatic stress in humans. *J Physiol* 2003;551(3):1043–1048.
15. Puttonen S, Viitasalo K, Härmä M. The relationship between current and former shift work and the metabolic syndrome. *Scand J Work Environ Health* 2012;38(4):343–348.
16. Esquirola Y, Perret B, Ruidavets JB, Marquie J C, et al . Shift work and cardiovascular risk factors: New knowledge from the past decade. *Arch Cardiovasc Dis* 2011;104(12):636–668.
17. Taggart P, Boyett RM, Logantha RS, et al. Anger emotion, and arrhythmias from brain to heart frontiers in physiology. 2011;(2):1-11
18. Kahneman 1D, Deaton A. High income improves evaluation of life but not emotional well-being. *PNAS* 2010;(107) 16489–16493.
19. Lyubomirsky S. Why are some people happier than others? The role of cognitive and motivational processes in wellbeing. *Am Psychol* 2001;56: 239–249.
20. Munafò MR, Zetteler JJ, Clark TG. Personality and smoking status: A meta-analysis. *Nicotine Tob Res* .2007;9:405–413.
21. Terracciano A, Costa PT, Jr..Smoking and the five-factor model of personality. *Addiction* 2004; 99:472–481.

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Health Care Service Quality: A Comparison of Public and Private Hospitals in Karachi

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ABSTRACT

Objective: The objective of the study was to compare the levels of patient satisfaction with the health service quality between the public and private hospitals in Karachi, so that their gaps, if any, may be identified and incorporated in future programs and policies.

Study Design: Cross sectional comparative study

Place and Duration of Study: This study was conducted in one public and one private hospitals in Karachi from May 2013 to July 2013.

Materials and Methods: A random sample of 400 patients, 200 each from both public and private hospitals was drawn. Data was collected, on a pre-tested and pre coded questionnaire, and analysed using SPSS version 16.0. level of satisfaction between patients in both the public and private health care settings were compared.

Results: The results of the study revealed that 75% of the patients availing health care services at the public hospital were not satisfied with the overall hygiene and cleanliness. 58.5% of the patients at public hospital were not involved in decision making regarding their own treatment. As for the patients availing services at the private hospital, 83.5% mentioned that they were provided with adequate privacy by their physician and hospital staff; however, 51% of the respondents replied that they had to pay huge medical bills which were beyond their affordability.

Conclusion: Significant difference was found in the patients' satisfaction level with the quality of health care services provided in the private and public hospitals, with private hospitals performing better in most of the aspects of health care service delivery.

Key words: Health-care Services, Patient Satisfaction, Quality of Services, Public and Private Hospitals, Karachi

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INTRODUCTION

It has been proved by research that unlike the quality of products, which can be assessed very conveniently, it remains a difficult task to define and measure quality of services, mainly because of its elusive and abstract nature¹. In terms of health, the quality of health services may be explained as the application of appropriate procedures and technologies in such an efficient way that best possible balance is maintained between risks and benefits². Measuring the quality of services is highly dependent on patients' perceptions and expectations³. Quality in terms of health services may be technical, that is, provision of appropriate diagnostic and treatment procedures that expresses what exactly has been provided to the patient. However, this aspect of quality is difficult to judge by the patient. Whereas, functional quality of health services is expressed as how

the service is provided to the beneficiary, who is hence well in the position to judge this aspect of the quality of the service⁴.

In this rapidly changing and advancing world, patients are now better equipped with information regarding their ailments, available therapies, their side effects and success or failure of these treatment modalities. Although, utmost efforts are made to enhance universal accessibility to health care, the quality of the health care services is overlooked at all levels. In their efforts to be better than their competitors, hospitals are trying to deliver a wide range of services, but unfortunately the quality assurance of these services is neglected⁵. Patient satisfaction plays a pivotal role in ascertaining the quality of services. However, it is believed that patient satisfaction is influenced by their expectations and patients' satisfaction may not correspond to the level of treatment outcome⁶, and patients' perceptions about provision of quality service improves the reputation and profitability of the hospital⁷.

In literature, most patient satisfaction surveys are dependent on patients' experience at a specific visit rather than overall experience extended over a

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particular length of time, and some researchers intentionally avoid to investigate about the quality of health care provided to them because it is believed that patient may not be in the position to judge the technicalities of their treatment modalities⁸.

In Pakistan, the health system revolves around public and private health care providers. Majority of the public hospitals are located in major cities, but facilities provided by these hospitals are inadequate to fulfill the needs of even the urban dwellers⁹. Although, a number of researches have been conducted in Pakistan to quantitatively measure the patient satisfaction level in different cities of Pakistan^{10,11}, but not much literature is available to compare patient satisfaction level in public and private sector hospitals. One of the studies conducted in Lahore Pakistan revealed that private hospitals are focusing more on their development and providing maximum health care facilities to their customers¹². A study in Greece¹³ investigated the provision of health care service quality in public and private hospitals. Their findings with regards to the public hospitals were that the patients availing public health care facilities were more satisfied with the competence of physicians and nurses as compared to those visiting private hospitals. On the other hand, patients attending private hospitals were found to be more satisfied with physical facilities and infrastructure, waiting queue and admission procedures as compared to patients visiting public hospitals. In another study¹⁴, comparing the health care services quality between public and private hospitals in UAE, significant differences were found between the two health care systems, with regards to reliability, empathy, tangibility, administrative responsiveness and supporting skills. In this study, public hospitals were found to be better in quality service provision than the private hospitals. Similar findings were encountered during another study¹⁵ that compared the level of satisfaction between private and public health care users in different European countries. This study suggests that level of satisfaction is more in patients attending public health care facilities. However these studies are more representative of developed countries. One of the study¹⁶ conducted in Lahore city of Pakistan, concluded that public hospitals nor deliver good quality services to their patients, neither are they making any serious effort to mend this gap.

This study was therefore conducted with the view to compare the level of patient satisfaction between public and private hospitals in Karachi, so that this information could be utilized to bridge the gap in performance between the two systems of health care delivery in Pakistan.

MATERIALS AND METHODS

It was a cross sectional comparative study, conducted in one public and one private hospitals in Karachi. The

duration of the study was from April 2013 to October 2013. A total of 400 patients, over the age of 18 years, 200 each from public and private hospitals were included in the study through systematic random sampling. Only the patients admitted in the ward were included in the study so that they may inform us about not only the health care service provision at the out-patient departments, but also share their experience during their stay at the hospital wards. However, patients with critical illnesses, unconsciousness, unwillingness and psychiatric illnesses, those undergoing chemotherapy and those who were unable to communicate because of language barrier were excluded from the study. The major task during data collection was to develop a reliable and valid questionnaire, so that errors of response and bias can be minimized as much as possible. For this purpose, the internationally recognized and most popular instrument for the measurement of service quality, SERVQUAL, was consulted. Moreover, other patient satisfaction questionnaires were searched and modified accordingly to develop our own data collection instrument. The data collecting tool was pre-coded and pre-tested on 10% of the sample. Written informed consent was taken from each respondent prior to data collection and the purpose of study was properly explained along with assurance of maintenance of confidentiality. Data was entered and analyzed with SPSS version 16.0. Relative frequencies were calculated and cross tabs were run for individual analysis of private and government hospitals. Chi square test was used to compare the level of satisfaction between private and public hospitals.

RESULTS

A total of 400 patients, 200 each from government and private hospitals were included in the study through random sampling. The mean age of the sample in government hospital was found to be 36.5 ± 14.18 years, where as that of the sample in private hospital was 34.5 ± 11.90 years. Other demographic data are shown in table 1.

The mean waiting time in public hospital was found to be 88.56 ± 20.14 minutes, which is significantly higher than that of waiting time in private hospital which was 62.51 ± 32.45 minutes.

In government hospitals, about 75% of the respondents were not satisfied with the overall hygiene and cleanliness, whereas only 18% of the patients attending private hospital expressed their dissatisfaction with the hygienic conditions.

With regards to the involvement of the patients and their families in decision making about their treatment, 58.5% of the respondents in government hospitals complained that they have not been involved in decision making regarding their own health (fig.1).

Only 12% of the respondents, attending public hospital opined that they sometimes encounter good behavior

and satisfactory answers from nursing staff, whereas majority of the people visiting private hospitals felt more dignified, especially with respect to the good staff behavior.

Majority of the patients at the public hospital disclosed that they had difficulty in getting appointment from the doctor, whereas 34% patients visiting private hospital encountered this problem, and they were more satisfied with their choice of physician. 51% of the respondents in private hospitals affirmed that they had to pay bills beyond their affordability.

Only 27% of the respondents, availing facilities at the public hospital mentioned that their physician explained adverse effects of the medicines to them, as compared to 47.5% of the patients visiting private hospital.

Concerning the issue of privacy and confidentiality, 83.5% of the patients availing services at the private hospital responded that they were satisfied with the privacy provided to them by their physician or other hospital staff, with regards to their health issues. (fig.2) Whereas only 7.5% of the respondents were provided with adequate privacy during their treatment at public hospital.

Table No.1: Frequencies of different variables in government and private hospitals.

Government hospital (n=200)			Private hospital (n=200)		
		Frequency	%	Frequency	%
Doctors treat in hurry	Always	126	63	19	9.5
	Sometimes	39	19.5	70	35
	Never	35	17.5	111	55.5
Medical terminologies used by doctors	Always	45	22.5	13	6.5
	Sometimes	70	35.5	96	48
	Never	85	42	91	45.5
Have to wait too long after calling the staff	Always	105	52.5	26	13
	Sometimes	45	22.5	69	34.5
	Never	50	25	105	52.5
Patients' involvement in decision making	Always	49	24.5	147	73.5
	Sometimes	34	17	42	21
	Never	117	58.5	11	5.5
Explanation of adverse effects of medicines	Always	55	27.5	95	47.5
	Sometimes	71	35.5	78	39
	Never	74	37	27	13.5
Privacy given by doctors	Always	15	7.5	167	83.5
	Sometimes	34	17	24	12
	Never	151	75.5	9	4.5

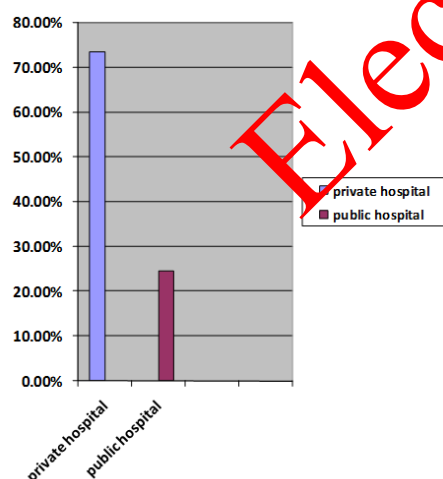


Figure No.1: Involvement of patients in decision making at private and public hospitals

To compare the levels of patient satisfaction between government and private sector hospitals, Chi square test was applied on different variables. Significant

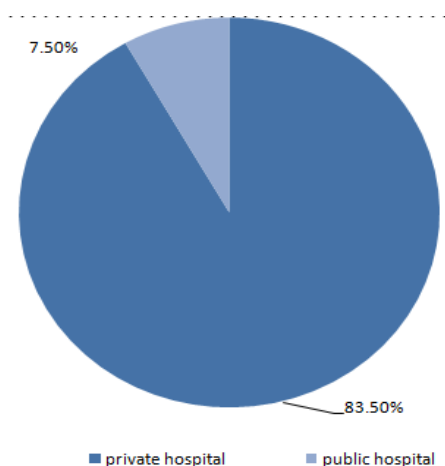


Figure No.2: Provision of privacy to patients by the staff at private and public hospitals

differences were found between quality of health care services in both type of health care systems with regards to hygiene, explanation of adverse effects of medicines by hospital staff, efficiency of nurses and

involvement of patients in decision making process about their treatment, with private hospitals performing better where difference exists. However, majority of the respondents availing health care services at the public sector hospital were satisfied with the competence and capabilities of doctors serving at these hospitals. Moreover, private hospitals showed an overall better level of patient satisfaction in most of the domains of health care.

DISCUSSION

The idea of quality means higher performance and excellence¹⁷. Delivering quality services has a directly proportional relationship with customer satisfaction, gaining their confidence and their loyalty^(18, 19). In this rapidly expanding globe, where knowledge is only a click away, patients are now more aware of their own health conditions, prognosis of their diseases, the reasoning and justifications behind medical decisions taken by their physicians and the level of health outcomes to be expected of various treatment modalities²⁰. Patient satisfaction is regarded as an important indicator for assessment of the quality of the health care²¹. Quality of the health services has been based on professional practice standard, however, over the last decade, patients' perception about health care services has been accepted as an indicator to measure quality of health care²².

This study was conducted with the purpose to ascertain patients' level of satisfaction between public and private hospitals in Karachi, so that the gaps, if any, may be identified and which may be addressed in future health care programs and policies.

Findings of the study show that there exists significant difference between public and private hospitals, with regards to overall hygiene and cleanliness as well as the availability of modern equipments and physical facilities, private hospitals being more cleaner and well equipped than the government hospitals. Our results are similar to the study which was conducted in Turkey²³. Similarly, the waiting time to see a health care provider was found to be shorter at the private hospitals as compared to public sector hospital.

With regards to the financial expenditures on health care facilities, patients attending private hospitals had to pay bills which were beyond their affordability. This may be mainly because private hospitals are dependent on the profits that they generate and this profit is in turn used to upgrade the facilities at the private health care facilities, leading to greater patient satisfaction. Whereas public hospitals are totally dependent on government support and funds, and this fact reflects on the overall poorly managed facilities supplied at these hospitals.

Similar studies were found in the literature^(6,16,23,24), which revealed that private hospitals perform better in most of the aspects of health care services delivery.

However, one study conducted in Islamabad²⁵ revealed that public hospitals in Islamabad are providing better services than private hospitals, which is in contrast to the results of our study.

CONCLUSION

It is evident from the above discussion that private hospitals are mobilizing their resources in order to provide better health care services to their patients, resulting in better patient satisfaction level among these patients, whereas public hospitals are not making any serious efforts to improve the quality of their services, nor they are satisfactorily meeting up with the health care demands of the public.

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

REFERENCES

1. Lee H, Delane I, M Bunda M A, Kin C. Methods of measuring health care service quality. *J Bus Res* 2000;46:133-46.
2. Niaz, Aziz A, Alah H. Health care quality theoretical foundations and practical application. Ministry of health, Saudi Arabia 2007.
3. Samson, Parker. Service delivery: the gap in the Australian consulting engineering industry. *Int J Quality and Reliab Manag* 1994;11(7): 60-67.
4. Gronroos, C. A service quality model and its marketing implications. *Eur J Market* 2001; 18(4): 36-44.
5. Youssef FN. Health care quality in NHS hospitals. *Int J Health Care Qual Assur* 1996;9(1):15-28.
6. Saifuddin Ekram ARM, Fazlur Rahman M, Abdullah Salim S, Jawadul Haque M. Preliminary Report on a Comparative Study on Patient's Satisfaction in Private and Public Hospital in the Perspective of Prevailing Health Management Constrains in Rajshahi. *TAJ* 2008;21(1):23-30.
7. Williams SG, Calman M. Key determinants of consumer satisfaction with General Practice. *J Family Pract* 1991; 8:237-242.
8. Thiedke C. What do we really know about patient satisfaction? *Farm Pract Manag* 2007;14(1): 33-36
9. Saeed A, Ibrahim H. Reasons for the problems faced by patients in government hospitals: Results of a survey in a government hospital in Karachi, Pakistan. *J Pak Med Assoc* 2005; 55(45) (http://jpma.org.pk/full_article_text.php?article_id=563)
10. Qidwai W, Dhanani RH, Khana FM. Implications for the practice of a patient expectation and satisfaction survey, at a leading hospital in Karachi, Pakistan. *J Pak Med Assoc* 2003;53(3): 122-5.
11. Shaikh BT. Quality of Health Care: An absolute necessity for patient satisfaction. *J Pak Med Assoc* 2005;55(11):514-6.

12. Shahbaz S, Kaufmann HR, Shehzad M. Service quality, word of mouth and trust: Drivers to achieve patient satisfaction, Scientific Research and Essays 2010;5(17):2457-2462.
13. Angelopoulou P, Kangis P, Babis G. Private and Public medicine: A comparison of quality perceptions. Int J Health care Qual Assur 1998; 11(1):14-20.
14. Jabnoun N, Chaker M. Comparing the quality of private and public hospitals. Manag Ser Qual 2003;13(4): 290-299.
15. Bleich S, Ozaltin E, Murray C. How does satisfaction with health care system relate to patient experience? Bull World Health Organ. 2009;87:271-8.
16. Irfan SM, Ijaz A, Farooq MM. Patient satisfaction and Service Quality of Public Hospitals in Pakistan: An Empirical Assessment. Middle East J Sci Res 2012; 12(6):870-877.
17. Zeithmal VA, Berry LL, Parasuraman A. The behavioral consequences of service quality. J Mark 1996;31-46.
18. Kara A, Lonial S, Tarim M, et al. A paradox of service quality in Turkey: The seemingly contradictory relative importance of tangible and in tangible determinants of service quality. Eur Bus Rev 2005; 17(1): 5-20.
19. Boshoff C, Gray B. The relationship between service quality, customer satisfaction and buying intentions in the private hospital industry. South Afr J Bus Manag 2004;35(4): 27-37.
20. Gask L, Usherwood T. ABC of psychological medicine. The consultation. BMJ 2002;324: 1567-1569.
21. Boulding W, et al. A dynamic process model of service quality: from expectations to behavioral intentions. J Mark Res 1993; 30(1):7-27.
22. Harris, Lisa E, Swindle, et al. Measuring patient satisfaction for quality improvement. Med Care 1999;37(12):1207-1213.
23. Yesilda F, Direktor E. Health care service quality: A comparison of public and private hospitals. Afri J Bus Manag 2010; 4(6): 962-971.
24. Mostafa MM. An empirical study of patient's expectations and satisfaction in Egyptian hospitals. Int J Health care Qual Assur 2005; 18(7):516-532.
25. Irfan SM, Ijaz A. Comparison of service quality between private and public hospitals: Empirical evidences from Pakistan. J Qual Tech Manag 2010;8(1): 1-22.

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Health Education for Enhancement of Self Efficacy of Young Females

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ABSTRACT

Objective: This study aimed to examine the impact of health education on health related self efficacy of young females as well as the relationship between self efficacy and one's health knowledge.

Study Design: Cross sectional study

Place and duration of study: This study was conducted at Gender & Development Study Department, Lahore College for Women University, Lahore and was completed over a span of two weeks.

Materials and Methods: A purposive sample of 50 young females was exposed to breast cancer related information. Their self efficacy was measured before and after being health educated. The information gathered before and after health information provision was compared. Two instruments were used for gathering information; a) Breast cancer related self-efficacy scale developed by this author which includes three items pertaining to the perceived self-efficacy of the respondents regarding breast cancer, and b) Preaction BSE Self-efficacy scale by Luszczyńska and Schwarzer for assessing perceived self-efficacy of the respondents regarding the confidence in performing BSE/ breast self examination in spite of hurdles.¹

Results: Data analysis revealed that breast cancer related self efficacy was significantly enhanced after health education provision. Young women who seemed to be clueless about a proactive approach to identification and treatment of breast cancer, exhibited significantly higher self efficacy after receiving proper health education.

Conclusion: Considering the risk of many life threatening diseases in women there is a need to improve their health behaviors by nurturing self efficacy. Provision of health education at educational institutions and through media can be an effective strategy for attaining this goal.

Key Words: Breast cancer, Health Education, Self Efficacy

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INTRODUCTION

Women comprise a major segment of our population. Considering the growing risk of life threatening diseases in women, such as cancer, it becomes imperative to devise strategies for cultivating health promoting and protective behaviors. Self efficacy and health education are considered to be significant variables in promotion of healthy lifestyles. Self efficacy is defined as "a proximal and a direct predictor of intention and of behavior" by Schwarzer, and Luszczyńska. These authors describe self-efficacy as a belief about a person's sense of control over her environment and behavior. Whether people will indulge in health protective or health promoting behaviors may be affected by their self-efficacy.²

Shwarzer's Health Action Process Approach (HAPA) explains the process involved in health action in terms of three variables namely the decision-making preceding the health action, the consequent intention, and the measurable behavior. The 'process' also

involves a number of ideas, cognitions, or plans. These sets of plans and cognitions are used for decision making, which in turn leads to intention, and intention determines motivation; the actual behavior then depends upon motivation.³

The model can be seen as comprising two phases. The motivation phase consists of three types of cognitions including perceived self-efficacy, assessment of the health threat, and outcome expectancies. In the volitional phase the person exercises what had been concluded at the previous phase. The health action considered by a person may be influenced by cognitive factors and the situational or environmental factors.

Self efficacy and resulting health action becomes very important in some cases e.g. early detection of breast cancer. Available research literature suggests that Pakistan has a very high rate of breast cancer. Additionally the age of onset is very low in many cases whereas the stage of reporting is generally late.⁴⁻¹⁰

At the same time there is also no dearth of evidence suggesting that awareness, health knowledge provision, and health literacy can bring about significant improvement in health behaviors and that they need to be promoted.^{9,11,12,13}

The role of self efficacy in adopting preventive and protective behaviors as well as quitting unhealthy

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behaviors and similar actions has also been highlighted by researchers.¹⁴⁻²⁰

The main idea behind designing the present research was the assumption that by enhancing women's self efficacy their health related behaviors can be improved. In order to enhance self efficacy women need to be health educated so that they learn that health protection and promotion are 'doable'. It was hypothesized that health knowledge provision will result in enhanced self efficacy.

There is no denying the fact that a self efficacious person will take proactive measures for health enhancement.

MATERIALS AND METHODS

A purposive sample of 50 female university students, aged 18 to 21 years, belonging to middle socio-economic class, was selected for this study. Only students having the same academic background and having no previous exposure to information about nature, risk factors, detection, or treatment of breast cancer were included.

Breast cancer related self-efficacy scale was used. The first half of the scale was developed by this author

while the second one, along with a question on procrastination, was taken from Preaction BSE Self-efficacy scale by Luszczyńska and Schwarzer.^{21,22}

The study followed a three step approach. In the first phase, pre treatment, the respondents' baseline breast cancer related self efficacy was measured. In the second phase, treatment, they were educated about the nature, etiology, treatment, and significance of early diagnosis of breast cancer. They were given the message through an educative lecture, discussion, and video presentation that early detection can lead to a very good prognosis. Respondents were also given take home literature on the same subject. The post treatment session was conducted after a fortnight wherein respondents' post treatment self efficacy was measured. The two readings, before and after treatment, were compared to gauge improvement.

RESULTS

The participants' pre and post exposure responses to the self-efficacy scale revealed an interesting pattern (Table 1; Post exposure readings are given in bold face).

Table No.1: Pre- exposure self-efficacy of the participants

Sr.#	Self-efficacy statements	*Option 1		*Option 2		*Option 3		*Option 4		*Option 5		Total	
		f	%	f	%	f	%	f	%	f	%	f	%
1.	I am confident that I can myself detect breast cancer if I ever develop it	25	50	8	16	8	16	0	0	9	18	50	100
		8	16	9	18	9	18	12	24	12	24	50	100
2	I am confident that I can be fully cured of cancer if I detect it in time, even if I have a family history of this disease	13	26	7	14	13	26	9	18	8	16	50	100
		1	2	4	8	7	14	19	38	19	38	50	100
3	I am confident that I can discuss my health problems with a doctor even if it involves my private body parts	12	24	5	10	5	10	7	14	21	42	50	100
		8	16	3	6	4	8	7	14	32	64	50	100
4	I am able to perform breast self examination regularly even if I have to make a detailed plan describing how to remember about breast self examination	13	26	9	18	10	20	7	14	11	22	50	100
		3	6	2	4	6	12	21	42	18	36	50	100
5	I am able to perform breast self examination regularly even if I will have to rethink my behaviors and opinions concerning breast self examination	0	0	19	38	9	18	4	8	8	16	50	100
		2	4	1	2	11	22	19	38	17	34	50	100
6	I am able to perform breast self examination regularly even if I will have to overcome my habit of non examination	15	30	8	16	11	22	3	6	13	26	50	100
		3	6	3	6	6	12	17	34	21	42	50	100

*Options: 1= definitely not true, 2= very slightly true, 3= true to some extent, 4= true to greater extent, 5= exactly true

Out of a total of six statements, in pre exposure responses, five had response options 1, 2 and 3 as the most frequently marked. These options were 'definitely not true', 'very slightly true' and 'true to some extent'. It was only in case of statement 3 that 'exactly true' or option 5 was noted to be the most frequently marked option, chosen by 42% of the participants. This statement measured the self-efficacy in terms of the confidence that one could discuss one's health problems with a doctor even when it involved private parts of one's body.

In response to a question regarding procrastination and a tendency to reschedule or postpone breast self-examination, most participants, 56%, said that they will not procrastinate or reschedule).

A similar trend was observed in the post-exposure self-efficacy of the participants.

While most participants stuck to just options 1 to 3 in pre-exposure assessment, greater percentages of participants marked option 4 and 5 the second time. In all of the statements, option 5 attracted most people in comparison to other options. 64% for item 3, 42% for item 6, 38% for item 2 and 36% for item 4 marked option 5 as their choice. This can be understood as an indication of a stronger perceived self-efficacy.

The frequency of response to the procrastination question improved as 58% of the respondents said that they would not procrastinate or delay breast-self examination.

A statistically significant difference was observed between the pre and post treatment self-efficacy scores. An increase of 7.26 points was obtained in the post treatment mean score ($M = 23.24$, $SD = 4.87$) as compared to the pre treatment mean ($M = 15.98$, $SD = 5.25$). A highly significant t value (49) = 8.249 , $p < .05$; .000 supported the assumption that health information provision can help enhance health related self efficacy.

However the difference between the pre and post treatment responses to the procrastination question was not found to be significant in chi square analysis.

Significant improvement nevertheless was obtained in the correlation between health knowledge and self efficacy (Table 2).

Table No.2: Pre and post exposure correlations between health knowledge and self efficacy

Pre-exposure health knowledge and pre-exposure self-efficacy	Pearson Correlation	.087
	Sig. (2-tailed)	.549
	N	50
Post-exposure health knowledge and post exposure self-efficacy	Pearson Correlation	.300
	Sig. (2-tailed)	.034
	N	50

Pre exposure correlation was $r(50) = 0.087$, $p > 0.05$, whereas the post exposure readings were $r(50) = 0.300$, $p < 0.05$ indicating a significant change which implies

that better health knowledge is strongly associated with self efficacy.

DISCUSSION

This study has yielded some very useful information for the enhancement of health related self efficacy and the possible subsequent improvement in young females' health protective and health promoting behaviors. It was observed that the respondents, in the absence of adequate health knowledge, did not have a self efficacious or proactive approach toward detecting and handling the threat or risk of breast cancer. However, proper information provision brought about a statistically significant improvement in their health belief. Some earlier research in other parts of the world had indicated that self efficacy can be an important contributory variable to health related behaviors. Considering the health status and risk of serious ailments in Pakistani women, there is a serious need to plan and devise strategies for promoting healthy behaviors. A woman's health means a family's health. Health promotion strategies will in turn not only lead to women's better health status but will also reduce the burden on the hospitals and ultimately the national exchequer.

CONCLUSION

Women may not be taking up healthy actions because they do not have adequate knowledge of the possibility of being in charge of their own health and of the fact that many health conditions can be either avoided or successfully treated if they could detect them early. There is a genuine need to introduce health education interventions. This can be done at all levels; by the curriculum developers, print and electronic media, and last but not the least the civil society..

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

REFERENCES

1. Luszczynska A, Schwarzer R. Planning and self-efficacy in the adoption and maintenance of breast self-examination: A longitudinal study on self-regulatory cognitions. *Psychology & Health* 2003; 18:93-108.
2. Schwarzer R, Luszczynska A. Self- Efficacy. DCCPS: Health Behavior Constructs: Theory, Measurement, and Research. Retrieved November 24, 2007, from <http://.dccps.gov/brp/ constructs/ self-efficacy/index.html>.
3. Foreshaw M. *Essential Health Psychology* 2002; London: Arnonld.
4. Aziz Z, Sana S, Akram M, Saeed A. Socioeconomic Status and Breast Cancer Survival in Pakistani Women. *JPMA* 2004;54:448.

- Retrieved April 20, 2010, from http://www.jpma.org.pk/full_article_text.php?article_id=477.
5. Bhurgri Y, Bhurgri A, Hasan SH, Usman A, Hashmi KZ, Khurshid M, et al. Pakistan, South Karachi. In: Parkin DM, Whelan SL, Ferlay J, Teppo L, Thomas DB, editors. *Cancer Incidence in the Five Continents*, 8th ed. France: IARC Scientific Publications; 2003.
 6. WHO (World Health Organization) - GOP (Government of Pakistan). *National Action Plan for Prevention and Control of Non-Communicable Diseases and Health Promotion in Pakistan*. Islamabad: tripartite collaboration of the Ministry of Health, Government of Pakistan, WHO, Pakistan Office, and Heartfile 2004; Retrieved April 20, 2010, from <http://heartfile.org/napmou.htm>
 7. Sohail S, Alam SN. Breast cancer in Pakistan—awareness and early detection. *J Coll Physicians Surg Pak* 2007;17:711–2.
 8. Naeem M, Khan N, Aman A, Nasir A, Samad A, Khattak A. Pattern of Breast Cancer: Experience at Lady Reading Hospital, Peshawar. *J Ayub Med Coll Abbottabad* 2008;20(4):22-25.
 9. Taj MN, Akbar Z, Hassan H, Yusuf A, Pattern of Presentation of Breast Diseases in a General Hospital. *Rawal Med J: J Pak Med Assoc* 2009; 34(2).
 10. Mahmood S, Rana TF, Ahmad M. Common determinants of Ca Breast—a case control study in Lahore. *Ann King Edward Med Coll* 2006;2: 227–8.
 11. Avci IA. Factors associated with breast self-examination practices and beliefs in female workers at a Muslim community. (Electronic version. Also in press). *Eur J Oncol Nurs* 2007; Retrieved April 9, 2008, from www.science-direct.com.
 12. Carelli I, Pompei L M, Matos C S, Ferreira H G, Pescuma R, Fernandes CE, et al. Knowledge, attitude and practice of breast self-examination in a female population of metropolitan São Paulo. (Electronic version, also in press). *The Breast* 2007; Retrieved April 2, 2008, from www.science-direct.com.
 13. Cho YI, Lee SD, Arozullah AM, Crittenden KS. Effects of health literacy on health status and health service utilization amongst the elderly. *Social Sci Med* 2008;66(8):1809-1816.
 14. DiClemente CC, Prochaska JO, Gilbertini M. Self-efficacy and the stages of self – change of smoking. *Cognitive Therapy and Research* 1985; 9, 181-200.
 15. Di Clemente CC, Prochaska JO, Fairhurst SK, Velicer WF, Velasquez MM, Rossi JS. The process of smoking cessation: An analysis of precontemplation, contemplation and preparation stages of change. *J Consult Clin Psychol* 1991;59, 295 – 304.
 16. Borrelli B, Mermelstein R. Goal setting and behavior change in a smoking cessation program. *Cognitive Therapy and Research* 1994;18: 69-82.
 17. Gwaltney CJ, Shiffman S, Paty JA, Liu KS, Kassel J D, Gnys M, et al. Using self-efficacy judgments to predict characteristics of lapses to smoking. *J Consult Clin Psychol* 2002;70:1140-1149.
 18. Shiffman S, Balabanis M H, Paty I A, Engberg J, Gwaltney CJ, Liu KS, et al. Dynamic effects of self-efficacy on smoking lapse and relapse. *Health Psychol* 2000;19:315-323.
 19. Schwarzer R, Luszczynska A. Self- Efficacy. *DCCPS: Health Behavior Constructs: Theory, Measurement, and Research* 2007; Retrieved November 24, 2007, from <http://dccps.gov/brp/constructs/self-efficacy/index.html>.
 20. Christiansen M, Vik PW, Jarchow A. College student heavy drinking in social contexts versus alone. *Addictive Behaviors* 2002; 27, 393-404.
 21. Shahed S. Health locus of control, health beliefs, and health related behaviors: a study of urban females. PhD thesis, University of the Punjab 2008.
 22. Shahed S. Impact of Health Information Provision on Breast Cancer Related Knowledge and Protective Behaviors: An Experiment in Health Education. *Lahore J Econ* 2013;18(1).

Ocular Manifestations in Xeroderma Pigmentosum; A Series of 20 Patients

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ABSTRACT

Objective: To assess the various ocular manifestations in xeroderma pigmentosum seen at Eye and Dermatology Department of Chandka Medical College Hospital Larkana.

Study Design: Prospective study

Place and Duration of Study: This study was carried out at two Departments, i.e. at Departments of Dermatology and Ophthalmology of Chandka Medical College Larkana from January 2013 to December 2014.

Material and methods: Twenty cases were enrolled from outpatient of Eye and Skin Department, Chandka Medical College Hospital Larkana. Patients were subjected to detail history, complete eye and skin examination and relevant investigations.

Results: 20 patients, 12(60%) males and 8 (40%) females with xeroderma pigmentosum in a gender ratio of 1.5 : 1 were recruited. All patients had skin freckles and increased sensitivity to sun light. Photophobia and conjunctivitis was seen in 18(90%) cases, keratitis and dry eyes was seen in 12 (60%) cases and 20% cases had malignancies of lids and conjunctiva proved on biopsy. Our cases belongs to Larkana and Sukkur division.

Conclusion: The present study highlights the eye involvement in xeroderma pigmentosum and thereby early detection of eye disease prevent the malignancies and blindness

Key Words: Xeroderma pigmentosum,—Ocular manifestations

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INTRODUCTION

Xeroderma pigmentosum is a group of rare inherited disorders with autosomal recessive inheritance and is manifested by increased skin sensitivity to ultraviolet (UV) light, abnormal skin pigmentation, photophobia, conjunctivitis and increase tendency to develop skin cancer, especially on sun exposed areas of body.¹ Neurological abnormalities may also be found in some patients. Many enzymatic defects are also observed in these patients^{2,3}. According to classification there are eight genetic complementation subgroups of this disorder from XP-A to XP-G and a variant group XP-V⁴ with each group having a different gene alteration⁵. Its incidence varies from one region to another. In USA the incidence is 1:250 000 in general population⁵; however it is much higher in some other countries like Japan 1 : 40 000.

There is frequent eye involvement in xeroderma pigmentosum and there is tendency of skin and eye lesions to become malignant in adolescence or early adult life. The skin may become atrophic and ectropion may occur. The bulbar conjunctiva may become thin and atrophic, with inflamed patches resembling phlyctenules. With infiltration of cornea the patients

become photophobic and may also start having blepharospasm^{6,7}.

MATERIALS AND METHODS

This prospective study comprised of 20 patients recruited from two departments, Department of Dermatology and Ophthalmology of Chandka Medical College Larkana and was completed in two years period from January 2013 to December 2014. All cases were examined by a dermatologist and an ophthalmologist and clinical diagnosis was made. Complete eye examination like lids, adnexa, anterior segment, posterior segment was done in all cases. Lids and conjunctival incisional biopsy was done in cases where lids and conjunctiva was ulcerated.

RESULTS

There were 12 (60%) males and 8 (40%) females in a ratio of 1.5 : 1. Their ages range from 2 to 26 years with a mean age of 14 years. All cases belonged to Larkana and Sukkur division. All patients showed skin freckles and pigmentation of face and exposed parts of body and sensitivity to sunlight. Ocular manifestations were frequently seen in all cases, like photophobia and conjunctivitis in 18 (90%) cases, keratitis and dry eyes in 14 (60%) cases, lid skin squamous cell carcinoma 2 (10%) cases, basal cell carcinoma 1 (5%) case, conjunctival carcinoma in situ 1(5%) case. All patients were advised to avoid sun light and to apply sun block

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whenever needed and were treated accordingly. All patients with eye complaints were given topical ciprofloxacin eye drops 2 hourly, methyl cellulose eye gel 2 hourly during the day times and tobramycin eye ointment at night. 1 patient with conjunctival carcinoma in situ, corneal abscess and perforation was treated by enucleation. 3 patients with lid carcinoma were treated by excisional biopsy and lid reconstruction by plastic surgeon.



Figure No.1: Basal cell carcinoma of eye lid



Figure No.2: Perforation and endophthalmitis of left eye

DISCUSSION

Defective repair of DNA damaged by ultraviolet radiation play a key role in pathogenesis however there is a great influence of latitude and weather over the symptoms of Xeroderma pigmentosum.^{8,9} Pakistan is a tropical country and its climate varies from one region to another. Eyes are commonly involved in xeroderma pigmentosum. We found photophobia and conjunctivitis in 90% of our patients which is markedly higher than reported by Kraemer *et al* and Brian P *et al*, 21% and 51% of their cases respectively.^{10,11} Conjunctival changes such as conjunctivitis, xerosis and congestion was seen in 90% cases. Corneal involvement in xeroderma pigmentosum may lead to

dryness, exposure keratitis, opacification, angiogenesis, ulceration and even perforation. In our study corneal involvement was seen in 60% cases which is comparable with the study done by Goyal *et al*¹² who noticed in 40% cases. In our cases 2 (10%) patients showed squamous cell carcinoma and 1 (5%) patient showed basal cell carcinoma of eye lid (Figure 1). One patient showed extensive globe conjunctival carcinoma in situ with secondary corneal abscess, perforation and endophthalmitis of left eye (Figure 2), which is enucleated. In the same patient also there was right eye conjunctival carcinoma in situ, and growth was excised completely. We observed ocular malignancies in 20% cases while another study done by Kraemer *et al* found in 11% of cases.¹³

CONCLUSION

In our study we conclude that early detection, continuous surveillance and timely intervention may prevent many complications especially ocular malignancies and blindness in patients with xeroderma pigmentosum.

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

REFERENCES

1. Lehmann AR, McGibbon D, Sttefainin M. Xeroderma pigmentosum. Orphanet J Rare Dis 2011;6:70.
2. Reed WB, Landing B, Sogarmen G, et al. Xeroderma pigmentosum. Clinical and laboratory investigations of its basic defect. JAMA 1969; 207:2073-9.
3. Thompson LH. Nucleotide excision repair: in relation to human disease in Dna repair in higher Eukaryotes. Vol 2, Torowo NJ. Human press 1998; 335-93
4. Sovoboda DI, Brlley LP, Vosj HM. Defective bypass replication of a leading strand cyctobutane thymine dimer in xeroderma pigmentosum variant cell extract caver Rs 1998;58:1445-8.
5. Robbins JH, Kraemer KH, Luzner MA et al. Xeroderma pigmentosum: an inherited disease with sun sensitivity, multiple cutaneous neoplasm and abnormal DNA repair. Ann Intern Med 1974; 80:221-48.
6. Neil JV, Kodai M, Brever R, et al. The incidence of consanguineous matings in japan: with remarks on estimation of comparative gene frequencies and expected rate of appearance of induced recessive mutations. Am J Hum Genet 1949;1:156-78.
7. Theilmann HW, Edler L, Popanda O, et al. Xeroderma pigmentosum patients from the federal republi of Germany: decrease in post UV colony-forming ability in 30 Xeroderma pigmentosum fibroblast strands is quantitatively corelated with a

- decrease in DNA incising capacity. J Cancer Res Clin Oncol 1985;109:227-40.
8. Clever JE, Carter DM. Xeroderma pigmentosum variants: influence of temperature on DNA repair. J Invest Dermatol 1973;78:295-7.
 9. Takebe H, Nishigori C, sato Y. Genetics and skin cancer of xeroderma pigmentosum in Japan. Jpn J Cancer Res (Gann) 1987;78:1135-43.
 10. Kraemer KH, Slor H. Xeroderma pigmen-tosum. Clin Dermatol 1985;3:33-69.
 11. Brian P, Brooks Amy H, Rachel J, Pishop et al, Opthomol 120(7).
 12. Goyal JL, Roa VA, Srinvasan R et al. Oculo-cutaneous manisfestation in xeroderma pigmentosum. Br J Opthamol 1994;78:295.
 13. Kraemer KH, Lee NN, Scotto J. xeroderma pigmentosum. Cutsneous, Ocular and neurologic abnormalities in 830 published cases. Arch Dermatol 1987; 123:241-50.

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Outcome of Operative and Non Operative Treatment of Glenoid Fossa Fractures in a Tertiary Care Hospital in Peshawar

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ABSTRACT

Objective: This study was aimed at reviewing operative and nonoperative treatment of Glenoid fossa fractures in our hospital and view to identifying measures necessary to improve outcome.

Study Design: Retrospective study

Place and Duration of Study: This study was conducted at Orthopedic Department of Lady Reading Hospital, Peshawar from March 2012 to July 2014

Materials and Methods: 21 patients of glenoid fossa fractures were included in this series with 14 males and 7 females. Patients with displacement of >5 mm who were fit to undergo surgery within 3 weeks of injury were operated using a posterior Judet's approach. Overall 8 patients with displaced fractures were operated (Group A) while 9 patients with displaced fractures (Group B) and 4 patients with undisplaced fractures (Group C) were managed nonoperatively.

Results: The incidence of associated injuries was 57.14%. The mean length of hospital stay was 15.3, 32.5, and 3.9 days in groups A, B, and C, respectively. In group A, average constant score was 86.98. The least constant score was observed for group B (57.97) while group C had an average constant score of 85.9. Brachial plexus injury and fracture-dislocations had poorer outcome.

Conclusion: Operative treatment for displaced glenoid fractures is a viable option at centers equipped to handle critically ill patients and subset of patients with fracture-dislocation as opposed to fracture alone should always be treated operatively due to persistent loss of function.

Key Words: Functional Outcome, Glenoid Fracture, Non operative, Operative

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INTRODUCTION

Fractures of the scapula comprise 0.4-1 per cent of all fractures. Fractures of the glenoid make up around 10 percent of scapular fractures^{1,4}. Of all glenoid fractures, approximately 10 per cent are substantially displaced^{5,6}. Operative treatment therefore is a relatively rare procedure. most common are the anterior avulsion and rim fractures, accounting for 75-85% of all glenoid fractures^{6,7}.

The glenoid fossa fractures are mostly seen in high energy trauma patients in which the humeral head impacts on the glenoid fossa^{8,9}. These fractures are often transverse, creating a fracture line in the direction of the applied force: either through the lateral-inferior part causing an inferior displacement due to the forces

of the triceps, or through the superior part that includes the coracoid process, resulting in an antero-inferior displacement, due to the long head of the biceps and the conjoint tendon¹. the fracture can also extend through the body into the medial border of the scapula^{2,3}. Direct forces in blunt trauma, causing a scapular fracture, may also extend into the articular surface¹⁰. Up to 60% of these high energy fractures are associated with concomitant injuries to chest, clavicle, humerus, head and brachial plexus¹¹⁻¹³. The severity of these injuries may distract the attention from the glenoid fracture leading to a delay in its diagnosis

Scapular fractures are rare injuries and most often treated nonoperatively with acceptable results.¹⁴⁻¹⁶ Most scapular fractures are non or minimally displaced and do well with conservative treatment.^{17,18} This observation, however, has been based on the treatment of scapular fractures in general and its relevance is, therefore, very limited. A more differentiated approach is necessary as good results are not guaranteed with exclusively conservative treatment in all cases.¹⁹

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There is a relative paucity of articles reporting on the outcome of treatment of glenoid fossa fractures. We retrospectively analyzed the outcome in our patients of glenoid fossa fractures.

MATERIALS AND METHODS

This study was conducted at orthopedic department of Lady Reading Hospital, Peshawar from March 2012 to July 2014. On retrospective search of hospital records, we identified patients sustaining glenoid fossa fractures and admitted in our emergency department. We were able to identify 21 cases with glenoid fossa fracture who were available for assessment. All subjects who were available for follow up and gave informed consent for their inclusion in the present series were included.

The mean age of patients at the time of trauma was 29 years (range 18-59) there were 17 males and 4 females. Road traffic accident was the most common mode of injury accounting for 15 cases, followed by fall from height (4), electrocution (1), and fall of heavy object (1). All except one case had closed injury. Associated injuries included brachial plexus injury (2), clavicle fracture (5), coracoids fracture (2), acromion fracture (2), scapular body fracture (3), ipsilateral upper limb fracture(s) (4), rib fracture(s) (9), spine injury (1), pelvic injury (2), lower limb fractures (2), head injury (4), blunt trauma chest (8), and blunt trauma abdomen (1). Overall, 12 patients had significant associated injury (excluding ipsilateral shoulder girdle fractures).

RESULTS

The incidence of associated injuries was 57.14%. The mean length of hospital stay was 15.3, 32.5, and 3.9 days in groups A, B, and C, respectively. Time for fracture union was the least in group C (5.6 weeks) followed by group A (6.5 weeks) and was the longest in group B (9.5 weeks), but union was achieved in all cases without further intervention, with overall mean time of 7.2 weeks for union in this series Table 1.

In group A, the average Constant score was 86.98 with four excellent, two good, one fair, and one poor result. Mean operative time was 103 min (range 45-150 min). The least Constant score amongst the three groups was observed for group B (57.97) with one excellent, two good, two fair, and four poor results. In group C, the average Constant score was 85.9 with two excellent and two good results Table 2. Amongst the different parameters of Constant score, pain and function were the least affected at the final follow up, whereas range of movements followed by strength were the most severely affected.

Predictors of inferior outcome included brachial plexus injury and fracture dislocation of glenoid. Four of 7 cases with poor result in this series had either brachial plexus palsy or fracture dislocation. Only one poor result in group B was not attributable to either of these two factors. Time taken till maximal improvement in

shoulder Constant score was also compared amongst the three groups and yielded the least value for group A followed by groups C and B. There were two cases of superficial wound infection which resolved with prolonged course of antibiotic therapy for 6 weeks.

Table No.1: Mean length of hospital stay and Time for fracture union of all three groups

Sr. No.	Groups	Mean length of hospital stay (days)	Time for fracture union (weeks)	Incidence of Associated Injuries %
01	A	15.3	6.5	
02	B	32.5	9.5	
03	C	3.9	5.6	
				57.14

Table No.2: Constant score of all three groups

Sr. No	Groups	Average Constant score	Mean operative time (mins)
01	A	86.98	103
02	B	57.97	103
03	C	85.9	103

DISCUSSION

The relative infrequency (prevalence 1%) and "benign characteristics" of a scapular fracture probably explains the limited attention in the literature. Glenoid fossa fractures represent 10% of scapular fractures with overall prevalence of 0.1%.^{18, 20} Majority of glenoid fossa fractures are undisplaced and can be managed nonoperatively. This is in contrast to the present series, where majority of fractures were displaced. This may be due to the referral system prevalent in our region whereby we receive higher percentage of patients with high-velocity trauma. Furthermore, inpatient records searched during this study did not include the records of patients with low-velocity trauma who are kept under observation for up to 24 h before being discharged.

The glenohumeral joint affords more degree of freedom of movement than any other joint and is therefore able to compensate for severe deformities and loss of movements. Although traditionally advocated treatment for scapular fractures has been nonoperative,²¹ recent authors have reported on favorable outcome after operative treatment for displaced glenoid fractures.²² We did not encounter any immediate complication related to the operative procedure, which is similar to the observation made in previously published reports, thus indicating the safety of the approach and feasibility of surgery. Nevertheless, postoperative infection remains a major cause of poor result.²³

The most important predictor of poor outcome in the present series was nonoperative treatment in association with dislocation. Patients with persistent brachial plexus injuries also fared poorly, which has been universally accepted as an indicator of poor outcome in

previously published series.²⁴ Excluding these cases with dislocation (gross displacement) and brachial plexus palsy, only one patient of the remaining six in group B had poor result. Thus, a satisfactory result might still be achieved with nonoperative treatment of displaced fractures. Time taken to achieve maximal improvement in shoulder Constant score was the least in group A followed by groups C and B. This earlier recovery of shoulder function was perhaps in part due to shorter period of immobilization and earlier institution of physiotherapy in group A.

The most common mechanism of these injuries is a violent force applied laterally to the proximal part of the humerus, which is then driven into the glenoid cavity.²⁵ A transverse fracture of the glenoid fossa occurs and then propagates in one of several directions, depending on the direction of the traumatic force.²⁵ On account of the amount of force generally required to produce these fractures, the incidence of associated injuries is relatively high.²⁵ Nearly half of these patients have a concomitant injury excluding the shoulder girdle.²⁵ In the present series, 57% (12/21) cases had associated injuries, with rib fracture and blunt trauma of the chest being the most common injuries. The treatment of these associated injuries invariably assumes priority over scapular fracture on account of their severity and often precludes surgical treatment of displaced fractures during the initial period.

Goss was one of the first authors to recommend surgical treatment of glenoid fossa fractures.²⁵ He emphasized on reduction of intra-articular step greater than 5 mm. Instability of glenohumeral joint or of fracture fragments themselves is a more compelling indication for surgery, which can occur with fracture of more than one-fourth of the glenoid cavity.²⁵ In a review of significant published series on operative treatment of scapular fractures, Nevertheless, it seems reasonable to individualize treatment based on the associated injuries, feasibility of surgery and the risks involved, presence of instability between the fractured fragments or at the joint itself, presence of gross displacement of fragment, or a fracture involving >25% of glenoid cavity.

CONCLUSION

To conclude, due to rarity of these injuries, most reported series have included a relatively small number of patients treated operatively and even less often treated nonoperatively. Thus, endorsement of favorable results of these series might be an over simplification as the outcome of these fractures might be often dependent on factors other than the anatomy of the fracture alone. We believe that operative treatment for displaced glenoid fractures is a viable option at centers equipped to handle critically ill patients. However, lack of such treatment does not preclude a satisfactory outcome in all displaced fractures. A subset of patients with

fracture dislocation as opposed to fracture alone should perhaps always be treated operatively due to persistent loss of function with nonoperative treatment, although the sample size is too small for deriving a meaningful conclusion.

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

REFERENCES

1. Bahk MS, Kuhn JE, Galatz IM, Connor PM, Williams GR. Acromioclavicular and sternoclavicular injuries and clavicular, glenoid, and scapular fractures. *J Bone Joint Surg Am* 2009; 91:2492-2510.
2. Goss TP. Fractures of the glenoid cavity. *J Bone Joint Surg Am* 1992;74:299-305.
3. Van noort A. Scapular fractures. In: Bucholz RW, CourtBrown CM, Heckman JD, Tornetta P, editors. *Rockwood and green's Fractures in adults*. 7th ed. Wolters Kluwer: Philadelphia; 2010.p.1144-1164.
4. Wiedemann E. Fractures of the scapula. *Unfallchirurg* 2004; 107(12):1124-1133.
5. Hardegger GH, Simpson LA, Weber BG. The operative treatment of scapular fractures. *J Bone Joint Surg Br* 1984;66:725-731.
6. Ideberg R. Fractures of the scapula involving the glenoid fossa. In: Bateman JE, Welsh RP, editors. *Surgery of the shoulder*. Philadelphia;1984.p. 63-66.
7. Schandelmaier P, Blauth M, Schneider C, Krettek C. Fractures of the glenoid treated by operation. a 5- to 23- year follow-up of 22 cases. *J Bone Joint Surg Br* 2002;84:173-177.
8. Guttentag IJ, Reichtine GR. Fractures of the scapula. a review of the literature. *Orthop Rev* 1988;17:147-158.
9. Theivendran K, McBryde CW, Massoud SN. scapula fractures : A review. *Trauma and Orthopaedics* 2008;(10):25-33.
10. Armitage BM, Wijdicks CA, Tarkin IS, Schroder IK, Marek DJ, Zlowodzki M, et al. mapping of scapular fractures with three-dimensional computed tomography. *J Bone Joint Surg Am* 2009;91:2222-2228.
11. Cole PA, Gauger EM, Schroder IK. management of scapular fractures. *J Am Acad Orthop Surg* 2012; 20:130- 141.
12. lantry JM, roberts CS, Giannoudis PV. Operative treatment of scapular fractures : A systematic review. *Injury* 2008;39:271-283.
13. leung KS, lam TP, Poon KM. Operative treatment of displaced intra-articular glenoid fractures. *Injury* 1993;24:324-328.
14. Imatani RJ. Fractures of the scapula: A review of 53 cases. *J Trauma* 1975;15:473-8.

15. Lindholm A, Leven H. Prognosis in fractures of the body and neck of the scapula. *Acta Chir Scand* 1974;140:33–6.
16. Zlowodzki M, Bhandari M, Zelle BA, Kregor PJ, Cole PA. Treatment of scapular fractures: Systematic review of 520 fractures in 22 case series. *J Orthop Trauma* 2006;20:230–3.
17. Wilber MC, Evans EB. Fractures of the scapula: An analysis of forty cases and review of the literature. *J Bone Joint Surg Am* 1977;59:358–62.
18. McGahan JP, Rab GT, Dublin A. Fractures of the scapula. *J Trauma* 1980;20:880–3.
19. Bauer G, Fleischmann W, Dubler E. Displaced scapular fractures: Indications and long-term results of open reduction and internal fixation. *Arch Orthop Trauma Surg* 1995;114: 215–9.
20. Ideberg R, Grevsten S, Larsson S. Epidemiology of scapular fractures: Incidence and classification of 338 fractures. *Acta Orthop Scand* 1995;66:395–7.
21. Ideberg R. Unusual glenoid fractures: A report on 92 cases. *Acta Orthop Scand* 1987;58:191–2.
22. Aulicino PL, Reinert C, Kornberg M, Williamson S. Displaced intra-articular glenoid fractures treated by open reduction and internal fixation. *J Trauma* 1986;26:1137–41.
23. Hardegger FH, Simpson LA, Weber BG. The operative treatment of scapular fractures. *J Bone Joint Surg Br* 1984;66:725–31.
24. Schandelmaier P, Blauth M, Schneider C, Krettek C. Fractures of the glenoid treated by operation. *J Bone Joint Surg Br* 2002;84:173–7.
25. Goss TP. Fractures of the glenoid cavity. *J Bone Joint Surg Am* 1992;74:299–305.

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Etiology and Epidemiology of Patients Presenting with Liver Disease During Pregnancy

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ABSTRACT

Objective: We conducted this study to elaborate the etiology and epidemiology of liver diseases presenting during pregnancy.

Study Design: It was a prospective, observational study.

Place and Duration of Study: This study was conducted in the Department of Gastroenterology, Fatima Memorial Hospital in collaboration with the Department of Obstetrics and Gynaecology from June 2011 –May 2013.

Materials and Methods: 73 patients were evaluated. Data was evaluated for quantitative and qualitative variables. Outcome of mother, pregnancy and neonates was also recorded where available.

Results: During the study period 73 pregnant patients were evaluated for the presence of liver disease giving an incidence of 3.6%. The mean age of the patients was 26.3 ± 3.8 (median: 26, range: 16 – 45) years. The patients presented at a mean gestational age of 5.8 ± 2.4 (median: 6, range: 1- 9) months. The mean STB and ALT levels were 11.5 ± 8.5 (median: 9.3, range: 1.4 – 48) mg/dL and 943.5 ± 887.4 (median: 765, range: 13 – 4810) IU/L respectively. The mean duration of jaundice and mean hospital stay were 6.82 ± 5.32 (median: 5, range: 2 – 30) days and 5.6 ± 2.7 (median: 5, range: 1 – 18) days. Fulminant hepatic failure was seen in 6.8% of the patients. Acute Hepatitis E was the most frequent diagnosis in our population. Maternal deaths were seen in 8.2%, foetal deaths were seen in 12.3% and neonatal deaths in 6.5%.

Conclusions: Liver diseases during pregnancy can have multiple causes and may predict poor outcomes for the patients and neonates.

Key Words: Hepatitis, Jaundice, Hepatitis in Pregnancy.

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INTRODUCTION

Pregnant women may suffer from a variety of liver diseases and usually present with jaundice. Clinicians should be aware of the clinical presentations and causes of jaundice and be able to manage these conditions keeping in mind the peculiarity of the situation where foetus is also at risk because of the maternal condition.

The work up of these patients should be undertaken on an urgent basis and every effort should be made to elucidate the cause of jaundice. The liver diseases that present or flare up during pregnancy may have variable effects on maternal and foetal outcomes. The management of these patients will require close collaboration between a hepatologist, neonatologist and obstetrician preferable in a setup where advanced management facilities are available.

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MATERIALS AND METHODS

This was a prospective observational study carried out in our tertiary care centre with fully functional obstetrics and hepatology departments. The study was approved by the Institutional Review Board of our hospital. 73 patients were enrolled over a period of two years from June 2011 –May 2013. These patients were either admitted under obstetrics service or were referred to us in the out- patient department for evaluation of symptomatic jaundice and/or deranged liver profile.

The demographics of the patients were recorded in specially designed proforma after taking informed consent and patients were triaged according to the severity of the condition for admission, follow up on outdoor basis or follow up on telephone. Every effort was made to follow these patients up to and beyond the completion of the pregnancy.

RESULTS

A total of 2012 gestations were managed by our Department of OBGYN during the period from June

2011 – May 2013. A total of 73 patients were referred to us with complaints of jaundice, giving a point incidence of 3.6%. The demographic profile of these patients is given in table 1. Maternal and fetal outcomes are tabulated in table 2 whereas table 3 shows the incidence of obstetric complications and neonatal outcomes. The frequencies of various signs and symptoms are given in table 4. Figure 1 shows the etiology of diseases leading to jaundice in pregnancy.

Table No.1: Demographic Profile

Total number of patients.	73	Parity	
Mean age	26.3 $\pm$ 3.8 years.	0 – 1	46 (63%)
Age range (years)		2 – 4	22 (30%)
15 – 25	30 (41.1%)	More than 4	5 (6.8%)
26 – 35	37 (50.7%)	Single/Multiple	
36 – 45	6 (8.2%)	Single	69 (94.5%)
Mean gestational age.	5.8 $\pm$ 2.4 months.	Multiple	4 (5.5%)
Pregnancy trimester			
1 st Trimester	4 (5.5%)	Mean duration of jaundice.	6.82 $\pm$ 5.32 days.
2 nd Trimester	16 (21.9%)	Mean duration of hospital stay	5.6 $\pm$ 2.7 days.
3 rd Trimester	53 (72.6%)		
Mean presentation serum total bilirubin.	11.5 $\pm$ 8.5 mg/dL.		
Mean presentation serum ALT	943.5 $\pm$ 887.4 IU/L.		
ALT range (IU/L)			
0 – 39	5 (6.8%)		
40 – 299	12 (16.4%)		
300 and above	56 (76.7%)		

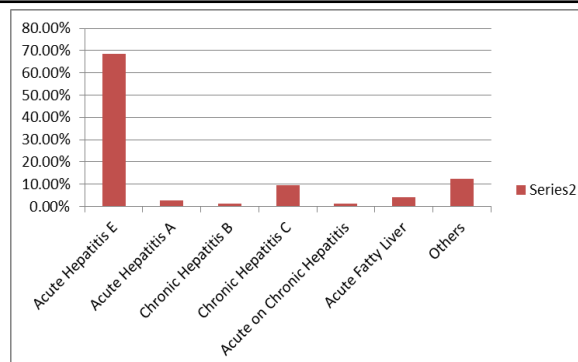


Figure No.1: Incidence of Liver Diseases at our centre.

Table No.2: Maternal and fetal outcomes

Maternal outcomes		Fetal outcomes	
Delivered, term, no complications	38 (52%)	Intrauterine Death	9 (12.32%)
Delivered, term, complications	5 (6.8%)	Full term delivery	43 (58.9%)
Delivered, preterm, no complications	7 (9.6%)	Spontaneous preterm	10 (13.7%)
Delivered, preterm, complications	6 (8.2%)	Induced preterm, foetal distress	6 (8.2%)
Discharged with viable pregnancy	12 (16.43%)	Induced preterm, maternal distress	4 (5.5%)
Terminated Hepatic Failure	5 (6.8%)	Abortion	1 (1.4%)

Table No.3: Obstetric complications

Obstetric complications		Neonatal outcomes. N=63	
Ante-partum Hemorrhage	4 (5.5%)	Alive	58 (93.5%)
Intra-partum Haemorrhage	2 (2.7%)	Expired	5 (6.8%)
Postpartum Haemorrhage	5 (6.8%)		
Premature Rupture of Membranes.	2 (2.7%)		
None	60 (82%)		

Table No.4: Frequencies of various signs and symptoms

Symptoms	Frequency	Signs	Frequency
Fever	35 (47.9%)	Jaundice	69 (94.5%)
Lethargy	37 (50.7%)	Hepatomegaly	12 (16.4%)
Anorexia	39 (53.4%)	Splenomegaly	2 (2.7%)
Right Upper Quadrant Pain	24 (32.9%)	Encephalopathy	5 (6.8%)
Dark coloured urine	49 (67.1%)	Ascites	8 (11%)
Altered mental status	5 (6.8%)	Oedema	6 (8.2%)
Hematemesis	1 (1.4%)		

DISCUSSION

Our study was undertaken with a view to describe the causes and demographic profile of pregnant patients presenting with manifestations of liver disease. Our tertiary care department boasts of a fully functional OBGYN and Gastroenterology – Hepatology unit.

Our study shows that gestation is complicated by the presence of liver diseases in up to 3.6% of the cases. This incidence is in confirmation to some of the previously published studies.^{1,2}

The mean age at presentation was 26.3 ± 3.8 years (range: 15 – 45 years) and the mean gestational age was 5.8 ± 2.4 months (range 1 – 9 months). As expected most patients (53, 72.6%) presented in the third trimester. Some of the liver diseases have a predilection to present during the third trimester e.g. acute fatty liver of pregnancy and preeclampsia/HELLP syndrome.

The cardinal features of liver disease seen in our cohort are presented in table. It should be kept in mind that some of the physiological changes of pregnancy can give rise to symptoms and signs that can be ascribed to liver diseases such as vomiting, spider angioma, telangiectasia, palmer erythema and lower limb edema.^{3,4} However an astute clinician will always order liver enzymes to exclude liver disease in these patients. It is not surprising that the most common symptom were fever and subjective complaints of lethargy and anorexia. Jaundice was the most common sign and encephalopathy was seen in 5 (6.8%) of the patients who were all diagnosed to have Fulminant Hepatitis leading to liver failure.

Serum albumin was found to be normal (more than 3.5 mg/dL) in 54 (74%) patients, between 2 – 3.5 mg/dL in 14 (19.2%) patients and less than 2 mg/dL in 5 (6.8%) patients. It should be kept in mind that a normal physiological response to pregnancy is hemodilution which will lead to decreased albumin as observed by Almashhrawi AA et al.⁵ However in our cohort patients with liver failure had significantly decreased serum albumin not explainable by hemodilution alone.

The etiology of liver disease experienced by our cohort is given in table. As expected Hepatitis E was the most common (n=50, 68.5%) and cause of fulminant hepatitis leading to liver failure in 5 (6.8%) patients. The incidence of Hepatitis E in our cohort is similar to Sultana R et al (25 out of a total of 38 patients, 65.8%)⁶, however it differs from other regional studies.^{7,8} Shukla S et al observed that most common viral hepatitis during pregnancy was hepatitis B. This is far from our experience as well as that of Sultana R and Kumara A. In our setup most of the patients booked with the department of OBGYN receive Hepatitis B vaccination either prior to or during the initial period of gestation. This probably explains such low incidence of Hepatitis B in our study population. Apart from the causes enumerated in the table, 1 of our patients had

hyperemesis gravidarum with deranged liver profile. This patient became stable in the next few days but was kept on follow up for the duration of pregnancy. One patient developed jaundice in second trimester and the clinical picture was consistent with Intrahepatic Cholestasis of Pregnancy along with previous history of episodes of jaundice during pregnancy. Seven patients were diagnosed to have Preeclampsia/ Eclampsia/HELLP syndrome. All except one of these patients presented during the third trimester.

There were six maternal deaths in our cohort (8.2%). 5 patients had fulminant hepatic failure (FHF) all due to Hepatitis E infection and one patient had acute fatty liver of pregnancy (AFLP). 5 deaths (4 with FHF and 1 with AFLP) occurred pre-partum and one death (FHF) occurred post-partum. Fulminant Hepatic Failure during pregnancy has a high maternal mortality rate as reported by the local data ranging from 30% to 90%^{9,10}

The management requires specialist care in hepatobiliary intensive care units which are not available widely in this part of the world. The incidence of maternal death with acute fatty liver of pregnancy is thought to vary widely from 1.1%¹¹ to 12.5%¹².

Total perinatal mortality was 20.54%. This is slightly less than that reported by Sultana R et al.⁶ There were 9 (12.32%) intrauterine deaths (4 in mothers with FHF, 2 in AFLP, 3 in mothers having preeclampsia/eclampsia/HELLP syndrome) and one abortion in a patient with chronic hepatitis C. The foetal outcomes are generally thought to be poor in mothers with FHF. All of our patients who developed FHF had Acute Hepatitis E.

The incidence of stillbirth was reported to be 54% from advanced centres.¹³ The foetal mortality in AFLP which was considered to be around 50% is now thought to be around 23%¹⁴. However, it has to be noted that the foetal mortality in preeclampsia, eclampsia and HELLP syndrome can not only be ascribed to liver involvement. These are considered to be widespread systemic conditions involving all the organs of the body leading eventually to multi-organ failure. According to regional data the outcome of pregnancies complicated by HELLP syndrome is considered to be poor.^{15, 16} (This impression is shared by other studies as well.²)

There were 5 (7.9% of alive births) neonatal deaths in our cohort. Two of the deaths occurred after pregnancies were complicated by AFLP and one each was observed in neonates born to mothers with Chronic Hepatitis B, AFLP and HELLP syndrome. Three neonates expired because of respiratory distress syndrome and one each because of asphyxia and neonatal sepsis.

CONCLUSION

Liver diseases in pregnant patients at our institute show similar characteristics to patients reported from other regional centres. Acute Hepatitis E is the most common

cause of liver disease and has a bearing on the maternal and foetal outcomes.

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

REFERENCES

1. Ch'ng CL, Morgan M, Hainsworth I, Kingham JG. Prospective study of liver dysfunction in pregnancy in Southwest Wales. *Gut* 2002;51:876-80.
2. Hay JE. Liver Disease in Pregnancy. *Hepatology* 2008; 47(3):1067-76.
3. Henry F1, Quatresooz P, Valverde-Lopez JC, Piérard GE. Blood vessel changes during pregnancy: a review. *Am J Clin Dermatol* 2006; 7(1):65-9.
4. Beard MP, Millington GW. Recent developments in the specific dermatoses of pregnancy. *Clin Exp Dermatol* 2012;37(1):1-4.
5. Almashhrawi AA, Ahmed KT, Rahman RN, Hammoud GM, Ibdah JA. Liver diseases in pregnancy: Diseases not unique to pregnancy. *World J Gastroenterol* 2013;19(43):7630-38.
6. Sultana R, Humayun S. Fetomaternal Outcome in Acute Hepatitis E. *JCPSP* 2014;24 (2):127-130.
7. Shukla S, Mehta G, Jais M, Singh A. A Prospective Study on Acute Viral Hepatitis in Pregnancy; Seroprevalence, and Fetomaternal Outcome of 100 cases. *J Biosci Tech* 2011;2(3):279-86.
8. Kumara A, Beniwal M, Karb P, Sharma JB, Murthy NS. Hepatitis E in pregnancy. *Int J Obstet Gynaecol* 2004;85:240-244.
9. Yasmeen T, Hashmi HA, Taj A. Fetomaternal outcome with hepatitis E in pregnancy. *J Coll Physicians Surg Pak* 2013;23(10):711-4.
10. Iqbal S, Umar M, Mumtaz S, Khurram M, Ghazala, Khar HB, Ahmad M. Acute Hepatitis E: experience at Holy Family Hospital, Rawalpindi. *Pak J Gastroenterol* Mar 2006;20(1):32-6.
11. Knight M, Nelson-Piercy C, Kurinczuk JJ, Spark P, Brocklehurst P. A prospective national study of acute fatty liver of pregnancy in the UK. *Gut* 2008;57:951-956.
12. Fesenmeier MF, Coppage KH, Lambers DS, Barton JR, Sibai BM. Acute fatty liver of pregnancy in 3 tertiary care centers. *Am J Obst Gynecol* 2005;192(5):1416-19.
13. Patra S, Kumar A, Trivedi SS, Puri M, Sarin SK. Maternal and Fetal Outcomes in Pregnant Women with Acute Hepatitis E Virus Infection. *Ann Intern Med* 2007;147:28-33.
14. Williams J, Mozurkewich E, Chilimigras J, Van De Ven C. Critical case in obstetrics: Pregnancy-specific conditions. *Best Pract Res Clin Obstet Gynaecol* 2008;22:835-46.
15. Siddiqui S, Sultana A, Asad F. Maternal and Perinatal outcome in HELLP syndrome at Abbasi Shaheed Hospital. *Ann Abbasi Shaheed Hosp Karachi Med Dent Coll Jun* 2003;8(1):12-5.
16. Gupta T, Gupta N, Jain J, Gupta S, Bhatia P, Bagla M. Maternal and perinatal outcomes in patients with preeclampsia/eclampsia with and without HELLP syndrome. *J Univ Coll Med Sci* 2013;1(4):7-12.

Polydioxanone vs Prolene Closure for Midline Abdominal Incisions: To Compare Postoperative Wound Dehiscence

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ABSTRACT

Objectives: The objective of this study was the comparison of Polydioxanone and Prolene for midline abdominal closure in terms of postoperative wound dehiscence.

Study Design: Randomized control trial

Place and Duration of Study: This study was conducted at Department of Surgery, Sheikh Khalifa Bin Zaid Al Nahyan Hospital Rawlakot Azad Kashmir from 20-12-2012 to 25-12-2014.

Materials and Methods: We studied 106 patients for midline closure of abdominal surgery. We made two groups (Group A consisted patients in whom abdominal closure was done with Polydioxanone no. 1 and Group B contained patients who underwent closure with Prolene no. 1. The outcome variable was wound dehiscence.

Results: The average of age for 106 patients was 36.88 ± 13.28 years. In group A, the wound dehiscence was seen in 4 (3.8%) patients while in group B it was seen in 12 (11.3%) patients. Wound dehiscence was considerably high in group B as compared to groups A, (p-value < 0.05).

Conclusion: Polydioxanone is a synthetic absorbable suture which retains its strength for longer than other absorbable materials. According to our experience Polydioxanone causes less wound dehiscence as compared to Prolene in midline abdominal wound closure.

Key Words: Abdominal closures, suture material, midline surgery and wound dehiscence

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INTRODUCTION

Despite advances in suture materials, abdominal fascial closure reflects a surgeon's personal preference. The value of a particular suture material may be measured by the rate of wound complications. Wound dehiscence is one of the early wound complications¹. Healing process of abdominal layers after surgical incision continues for 9 to 12 months^{2,3}. The mean time for wound dehiscence is 8-10 postoperative days. With recent advances in suture material and the use of mass closure technique the rate of dehiscence has generally been less than 1%,⁴ although a recent report from the Veterans Affairs national quality program has documented a rate of 3.2%.⁵

Abdominal wound dehiscence can be associated with patient's or technical factors.⁷ The rate of wound dehiscence is still very high in our hospitals. The results of a trial showed wound dehiscence of 6.8%.⁷

The choice of material for closing the abdominal layers should depend upon the properties of that material like strength, durability, ease of handling, and resistance to infection. Nonabsorbable materials (e.g., poly

propylene) have been widely used for abdominal fascial closure since many years, but their use is associated with high rate of sinus formation and wound pain.¹

Absorbable materials are designed to approximate the abdominal layers and subsequently to undergo absorption to avoid these problems associated with nonabsorbable sutures. Polydioxanone (PDS) is one of the most commonly used slowly absorbable materials. Its absorption takes about 180 days, and they maintain 50% of their tensile strength for about four weeks. It has shown to have 1.7 times the tensile strength of Prolene. On review of a meta-analysis, absorbable monofilament suture material was found superior in comparison with nonabsorbable monofilament.¹ The most common nonabsorbable materials used are polypropylene, nylon, polyethylene, and polyamide⁸.

Most authors suggest that a slowly absorbable suture material is better than a non-absorbable suture material for closure of the abdominal layers⁹. This study aims to compare two suture materials, polydioxanone and polypropylene, in closure of midline laparotomy wounds in order to find a better choice of suture material in terms of wound dehiscence.

MATERIALS AND METHODS

This study was conducted at Department of Surgery Sheikh Khalifa Bin Zaid Hospital Rawlakot Azad

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Kashmir. The study was completed in two year time from 20-12-2012 to 25-12-2014.

Using WHO sample size calculator, where level of significance was 5%, Power of test = 80%, Population proportion (P_1) = 9% and P_2 was 2.3%.

So, sample size (n) = 106.

(53 patients in each group A and B, randomly allocated). Group A = Polydioxanone was used in abdominal closure. Group B = Prolene was used in abdominal closure.

Sampling Technique: Non-probability purposive sampling

Sample Selection

Inclusion Criteria:

- All patients undergoing midline laparotomy in elective as well as in emergency operation theatres.
- Patients aged 15 years or above.
- ASA (American Society of Anesthesiologists) grade I and II.

Exclusion Criteria

- Coagulopathy .A deranged PT and APTT of more than 10 sec. and INR of more than 3 was excluded.
- Radiotherapy of the abdomen.
- Pregnant woman (if urinary beta HCG is positive).
- Current immunosuppressive therapy.
- Patients who developed post-operative wound infection.

Data Collection Procedure: All patients who met the inclusion criteria, underwent midline laparotomies in elective as well as in emergency operation theatres of our hospital were selected for the study.

Approval by the hospital ethical committee was taken. Informed written consent was taken from each patient. All midline abdominal wounds were closed by continuous single layer mass closure, and the procedure was performed by a single selected team of surgeons of our hospital. The patients were allocated either to group A or B randomly (randomization by Lottery method).

Group A: Patients in whom abdominal closure was done with Polydioxanone n. 1.

Group B: Patients in whom abdominal closure was done with Prolene n. 1.

Patients in each group were administered preoperative prophylactic intravenous antibiotics covering gram negative organisms and anaerobes. The same intravenous antibiotics along with analgesics was continued postoperatively for at least five days. Postoperative wound dehiscence was assessed immediately postoperatively till 7 days by daily wound examinations. If there was any purulent discharge then it was sent in laboratory for regular examination. Culture and sensitivity of the discharge if it was present, was only requested if the white blood cell (WBC) count on regular examination was more than $11,000 \text{ cm}^3$.

Data Analysis: All the data was entered on SPSS. Mean and standard deviation was calculated for quantitative data, i.e., age. Frequencies and percentages was calculated for qualitative data, i.e. wound dehiscence.

Chi-square test was used to compare wound dehiscence in group A and group B. A p-value ≤ 0.05 was considered statistically significant.

RESULTS

In this study, total of 106 patients were divided into two groups; Group A contained 53 (50%) in which Polydioxanone was used for abdominal closure and in Group B 53 (50%) patients were taken in which the abdominal closure was done with Prolene.

In Group A the average of age for patients was 36.32 ± 13.57 years with minimum and maximum ages 16 years and 65 years respectively. In Group B, the average of age was 37.43 ± 13.09 years along with minimum and maximum ages 17 years and 65 years respectively. Hence over all, the average of age for 106 patients was 36.88 ± 13.28 years with range of 49 years. (**Table #1**)

In group A the wound dehiscence was seen in 4 (3.8%) patients while in group B it was seen in 12 (11.3%) patients. Wound dehiscence was considerably high in group B as compared to groups A, (p-value < 0.05). (**Table # 2**).

Table No.1: Statistics of Age (years)

	Polydioxanone	Prolene	Total
Mean	36.32	37.43	36.88
Std. Deviation	13.57	13.09	13.28
Minimum	16	17	16
Maximum	65	65	65

Table No. 2: Frequency Distribution of "Wound Dehiscence" With respect to study groups

		Study Group		Total
		Polydioxanone	Prolene	
Post operative Wound Dehiscence	Present	4 (3.8%)	12 (11.3%)	16 (15.1%)
	Absent	49 (46.2%)	41 (38.7%)	90 (84.9%)
Total		53 (50%)	53 (50%)	106 (100%)

Chi-Square Test = 4.71

p-value = 0.030

DISCUSSION

The midline laparotomy incision is easy to perform, yet there has been substantial variation in the method of the repair of this incision. The ideal suture should avoid incisional wound infection, wound dehiscence, without increasing wound infection, wound pain or the formation of suture sinus.^{10,11,12}

During the last many years the trend of using non-absorbable sutures has been changed. Numerous studies and meta-analyses advocate the use of slowly absorbable sutures, claiming comparable wound strength with significantly lower prevalence of wound complications.^{13,14}

Abdominal layers closure has remained a procedure that often reflects a surgeon's personal first choice. Frequent randomized controlled trials of abdominal layers closure have unsuccessful to decide the ideal suture material with favorable conclusions^{15,16}. Certain studies¹⁷ recommend the use of non-absorbable sutures, where as others^{18,13} advocate slowly absorbable suture material for abdominal layers closure.

There is a verity of literature in which the different kind of suture material has been tested, many of them are in favor of different kind of suture materials (like absorbable and non-absorbable). Similarly we conducted this study to see the effectiveness of Polydioxanone and Prolene in midline closure. We compared these two suture materials in terms of less postoperative wound dehiscence. According to this study, our experience shows that the Polydioxanone has less but statistically insignificant postoperative complications like suture intact suture cutting out of the tissue and protrusion of gut or omentum from the wound.

On the comparison of wound dehiscence low rate of wound dehiscence in the Polydioxanone group has been observed in our study, which is also according to the previously published studies.^{16,19}

According to Dooren VP et al²⁰, after a follow up period of 60 months the use of Polydioxanone and Prolene for closure of the abdominal layers showed no significant difference in the occurrence of wound infection and dehiscence which was clearly contradictory from our study.

CONCLUSION

Polydioxanone is a synthetic absorbable suture, which retains its strength for longer than other absorbable materials. According to our experience Polydioxanone causes less wound dehiscence as compared to Prolene in midline abdominal wound closure.

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

REFERENCES

1. Ceydeli A, Rucinski J, Wise L. Finding the Best Abdominal Closure: An Evidence-based Review of the literature. *Curr Surg* 2005; 62: 220-5.
2. Rath AM, Chevrel JP. The healing of laparotomies: a re-view of the literature. Part 1. Physiologic and pathologic aspects. *Hernia*. 1998;2:145-9.
3. Douglas DM. The healing of aponeurotic incisions. *Br J Surg* 1952;40:79-84.
4. Culver DH, Horan TC, Gaynes RP, Marton WJ, Jarvis WR, Emori TG, et al. Surgical wound infection rates by wound class, operative procedure, and patient risk index. National Nosocomial Infections Surveillance System. *Am J Med* 1991;91:152S-157S.
5. Bucknell TE, Cox PJ, Ellis H. Burst abdomen and incisional hernia: a prospective study of 1129 major laparotomies. *BMJ* 1982;284:931-3.
6. Eva DMF, Adam SRB, Sharif M, Iain AA. Tensile Strength Of Surgical Knots In Abdominal Wound Closure [Surgical Technique]. *ANZ J Surg* 2008; 78:164-6.
7. Waqar SH, Malik ZI, Zahid MA, Shafique M. Frequency of wound dehiscence / burst abdomen in midline laparotomies. *Pann Pak Inst Med Sci* 2005;1:74-8.
8. Paral J, Ferko A, Varga J, Antos F, Plodr M, Lochman P et al. Comparison of sutured versus non-sutured subcutaneous Fat tissue in Abdominal Surgery. *Eur Sur Res* 2007; 39:350-8.
9. Fischer L, Baumann P, Hüsing J, Seidlmayer C, Albertsmeier M. A historically controlled, single-arm, multi-centre, prospective trial to evaluate the safety and efficacy of MonoMax® suture material for abdominal wall closure after primary midline laparotomy. *BMC Surg* 2008;8:12.
10. Weiland DE, Bay RC, Del Sordi S. Choosing the best abdominal closure by meta-analysis. *Am J Surg* 1998;176(6):666-70.
11. Gaikwad V, Kapoor R, Thambudurai. An ideal suture for midline closure? *Ind J surg* 2009;71: 128-32.
12. Pavlidis TE, Galatianos IN, Papaziogas BT, Lazaridis CN, Atmatzidis KS, Makris JG, Papaziogas TB, et al. Complete dehiscence of the abdominal wound and incriminating factors. *Eur J Surg* 2001;167:351-4.
13. Leaper DJ, Pollock AV, Evans M. Abdominal wound closure: a trial of nylon, polyglycolic acid and steel sutures. *Br J Surg* 1977;64:603-6.
14. Rucinski J, Margolis M, Panagopoulos G, Wise L. Closure of the abdominal midline fascia: meta-analysis delineates the optimal technique. *Am Surg*. 2001;67:421-6.
15. Gys T, Hubens A. A prospective comparative clinical study between monofilament absorbable and non-absorbable sutures for abdominal wall closure. *Acta Chir Belg* 1989;89:265-70.
16. Korenkov M, Sauerland S, Arndt M, Bograd L, Neugebauer EAM, H T. Randomized clinical trial

- of suture repair, polypropylene mesh or autoderma-hernioplasty for incisional hernia. *Br J Surg* 2002;89(1):50-6.
17. Weiland DE, Bay RC, Del Sordi S. Choosing the best abdominal closure by meta-analysis. *Am J Surg* 1998;176(6):666-70.
18. van'tRiet M, Steyerberg EW, Nellensteyn J, Bonjer HJ, Jeekel J. Meta-analysis of techniques for closure of midline abdominal incisions. *Br J Surg* 2002;89:1350-6.
19. Carlson MA, Condon RE. Polyglyconate (Maxon) versus nylon suture in midline abdominal incision closure: a prospective randomized trial. *Am Surg* 1995;61(11):980-3.
20. Dooren VP, Bloemen A, Huizinga B, Hoofwijk AGM. Long-term incidence of incisional hernia after abdominal surgery: a prospective randomized trial comparing two suture materials. Department of general surgery at the Orbis Medical Centre, Sittard, the Netherlands. Online available from: http://74.125.155.132/scholar?q=cache:12AgARXL0e0J:scholar.google.com/&hl=en&as_sdt=2000.

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Role of Malignancy Index in Prediction of Malignancy in Ovarian Masses Preoperatively

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ABSTRACT

Objectives: To determine the diagnostic accuracy of risk of malignancy index (RMI) in the preoperative prediction of malignancy in ovarian masses by taking histopathological findings as gold standard.

Study Design: Cross-sectional survey

Place and Duration of Study: This study was conducted at Gynae Unit 111, Lady Willingdon Hospital Lahore and duration was one year from 1.1.2013 to 31.12.2013.

Materials and Methods: 140 cases were recruited for the study. Blood drawn for serum Ca-125 level and sent to hospital laboratory and pelvic ultrasound was done. For each risk of malignancy index was calculated value of RMI ≥ 200 was taken as positive.

Results: Patients were having the mean age 55.8 ± 7.6 . Comparison of malignancy index vs. histopathology for prediction of malignancy in ovarian masses showed 64 malignant cases on histopathology and 69 on RMI. Sensitivity rate: 89.0%, specificity: 84.2%, diagnostic accuracy: 86.4%, PPV: 82.6% and NPV: 90.1%.

Conclusion: The menopausal status, serum CA125 levels and ultrasound reports accumulated together can give us risk of malignancy index which can provide the odds of development of ovarian malignancies.

Key Words: Risk of malignancy index, ovarian malignancies, ovarian cancers

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INTRODUCTION

Among all the gynaecological malignancies, ovarian cancer is the third most commonly treated cancer and highest mortality rate even in developed countries.⁽¹⁾ For every 7 out of every 10 cases the diagnosis takes place at late stage, which means the prognosis is poor, usually 70% patients die within 2 years and almost 90% die within 5 years of diagnosis. It is due to above mentioned facts that has stimulated researches to find screening procedures for ovarian cancer. This cancer is symptomatic and can be detected early if proper screening methods are in place. Constant pelvic and abdominal pain with continuing bloating and loss of appetite are most common symptoms. Among other symptoms urinary complaints and change of bowel habits are more important.⁽²⁾ The PPV is <1% for all symptoms except abdominal distention. However if symptoms are frequent and persistent, it helps to pinpoint patients of ovarian malignancy.⁽³⁾ If malignancy is suspected, pelvic ultrasound and Ca-125 level is ordered but for further details highly specific diagnostic tests are needed and it is important that the

disease is diagnosed at a manageable stage. 50% of suspected malignancy patients are not directly referred to gynaecological cancer clinics⁽⁴⁾. A recommendation of malignancy before operation can escort the gynaecologist to refer the patient with alleged pelvic mass to oncological unit for suitable therapy.

Abdominal or Vaginal ultrasound, colored Doppler ultrasound and markers of tumors can be used to assess pelvic masses but none of these tests separately has shown meaningful performance for detection of malignancy from clinically restrictor ovarian masses. The malignancy index is a score which is obtained by the formula which takes into account the menopausal status, serum level of glycoprotein Ca-125 and results of ultrasound⁽⁵⁾. A risk of malignancy index of > 200 is an indication for referral to central oncology unit. According to one study in Turkey sensitivity of RMI is 85.4% and specificity 96.9% for determination of malignancy in adnexal masses. Another study indicates RMI of 200 has sensitivity of 81% and specificity of 86% in the detection of ovarian malignancy⁽⁶⁾. An extremely high specificity is a requirement of a screening strategy for ovarian cancer.

Objective of this study was to determine diagnostic accuracy of RMI (Risk of malignancy index) in the pre-operative prediction of malignancy in ovarian masses as there is controversies regarding exact sensitivity and specificity of RMI.

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MATERIALS AND METHODS

This cross sectional study was conducted at unit 111 Lady Willingdon Hospital Lahore for a period of one year from 1.1.2013 to 31.12.2013. 140 cases were recruited for the study by non probability sampling technique taking expected percentage of ovarian masses 45% with sensitivity 85.4%, specificity 96.9% of RMI in the detection of malignancy in patients with ovarian masses by taking histopathology as gold standard.

Inclusion criteria was patients age 35 years and above, Simple or complex cyst more than 5cm on ultrasound. However, patients presenting with cyst accidents e.g. rupture/torsion presented as acute abdomen, Pregnancy with ovarian cyst, ovarian cyst with co-existing uterine fibroid assessed on pelvic ultrasound were excluded from the study. Patients were recruited from outpatients department after approval from ethical committee of hospital. Each patient was explained the purpose of the study and only those who give an informed consent were included. A detailed history was taken and complete general physical, systematic and pelvic examination was done. Blood was drawn for serum Ca-125 level and sent to hospital laboratory; pelvic ultrasound was done by hospital senior radiologist. For each patient risk of malignancy index was calculated value of $RMI \geq 200$ was taken as positive. All patients were undergone Laparotomy and a specimen of cyst was sent for histopathological examination.

The data analysis was computer based. SPSS version 16 was used for analysis. Initially, descriptive statistics was calculated. The sensitivity, specificity, PPV, NPV and accuracy of RMI in the prediction of malignancy in ovarian masses was calculated by generating 2x2

contingency table taking histopathological findings as gold standard.

RESULTS

Majority of the patients, 73 (52.1%) were between 46-55 years old and minimum patients 27 (19.3%) were between 35-45 years of age. Mean age of the patients was 55.8 ± 7.6 (Table-1).

Table No.1: Age distribution n = 140

Age (Year)	Number	Percentage
35-45	27	19.3
46-55	73	52.1
56-60	40	28.6
Total	140	100.0
Mean±SD	55.8±7.6	

Table No.2: Comparison of malignancy index vs histopathology for prediction of malignancy in ovarian masses n = 140

Risk of Malignancy index (RMI)	Histopathology (Gold Standard)		Total
	Malignant	Benign	
Malignant	57 (TP)	12 (FP)	69
Benign	07 (FN)	64 (TN)	71
Total	64	76	140

Key:

TP = True positive
 FP = False positive
 FN = False negative
 TN = True negative

Table No.3: Sensitivity, Specificity and accuracy of RMI

Sensitivity rate	$\frac{\text{True Positive}}{\text{True Positive} + \text{False Negative}}$	$\times 100 =$	
	$\frac{57}{57 + 7}$	$\times 100 =$	89.0%
Specificity rate	$\frac{\text{True Negative}}{\text{True Negative} + \text{False Positive}}$	$\times 100 =$	
	$\frac{64}{64 + 12}$	$\times 100 =$	84.2%
Diagnostic Accuracy	$\frac{\text{True Positive} + \text{True Negative}}{\text{True Positive} + \text{False Negative} + \text{True Negative} + \text{False Positive}}$	$\times 100 =$	
	$\frac{57 + 64}{57 + 64 + 12 + 7}$	$\times 100 =$	86.4%

Table No.4: Positive Predictive Value (PPV) and Negative Predictive Value (NPV) of RMI

Predictive value of Positive test	$\frac{\text{True Positive}}{\text{True Positive} + \text{False Negative}}$	$\times 100 =$	
	$\frac{57}{57 + 12}$	$\times 100 =$	82.6%
Predictive value of Negative test	$\frac{\text{True Negative}}{\text{True Negative} + \text{False Positive}}$	$\times 100 =$	
	$\frac{64}{64 + 7}$	$\times 100 =$	90.1%
	$\frac{57 + 64}{57 + 64 + 12 + 7}$	$\times 100 =$	86.4%

Comparison of malignancy index vs. histopathology for prediction of malignancy in ovarian masses showed 64 malignant cases on histopathology and 69 on RMI. True positive cases were 57, false positive 12, false negative 7 and true negative cases were 64 (Table-2). Sensitivity rate was 89.0%, specificity was 84.2%, diagnostic accuracy was 86.4%, PPV was 82.6% and NPV was 90.1% (Table 3 & 4).

DISCUSSION

Seventh most common cancer in women worldwide is ovarian malignancy approximately accounting for four percent of all cancers and with incidence rate of 200,000 each year⁽⁷⁾. Ovarian cancer has 35% five year survival rate which makes it the worst among gynaecological cancers in terms of prognosis⁽⁸⁾. The prognosis is remarkably better if cancer is at early stage (stage 1 or 2) with survival rate of 80-90% while survival rate is reduced to 25% in late stage cancer (stage 3 or 4)⁽⁹⁾. The problem is that only 3 out of every 10 patients are diagnosed at early stages. There is lack of screening tests, so the earlier diagnosis is usually due to improved identification of symptoms⁽¹⁰⁾. Before lately, this cancer was considered a silent killer because of very few symptoms. The newly applied guidance in UK mentions critical investigation only for abnormal vaginal bleeding and palpable masses, but these recommendations are not obligatory⁽¹¹⁾. Many of recent studies show that this cancer is highly symptomatic and symptoms go unacknowledged by patients as well as physicians⁽¹²⁾.

Pain in the abdomen, abdominal distension, pain in the pelvic region, frequency of urine, constipation or diarrhea, abnormal vaginal bleeding, loss of weight, abdominal bloating, and fatigue have all been reported⁽¹³⁾.

Malignancy index is suitable for discriminating malignant from benign masses in those females who have no sign of advanced stage ovarian cancer. This index was more accurate in present population. The strength of the index relies on the number of early and advance stages of cancer and also on number of malignant neoplasm and benign processes⁽¹⁴⁾.

In present study, sensitivity was 89.0%, Specificity 84.2%, diagnostic accuracy 86.4%, PPV: 82.6% and NPV: 90.1%.

In two studies conducted by Jacobs et al⁽¹⁵⁾ and Tingulstad et al⁽¹⁶⁾, in the first study they found a sensitivity of 73% and a specificity of 91%. In the second study they found a sensitivity of 76% and specificity of 82% in 1996, and 74% and 91% respectively in 1999. The index showed itself useful in referring patients with advanced neoplasia to a more complex healthcare unit. These results are comparable with our findings.

The risk of malignancy index plays a crucial role in deciding which cases should be referred to oncological

units and it also allows the surgeon to select the certain surgical procedure.

In another study done by Leelahakorn et al⁽¹⁷⁾, demonstrated the role of ultrasound reports, CA 125, menopausal status, and one type of the RMI in discriminating benign from malignant ovarian tumors. For the RMI, the sensitivity, specificity, PPV and NPV were 88.6%, 90.7%, 70.5%, and 97%, respectively. These figures are comparable with our study.

CONCLUSION

In conclusion, when ultrasound profile, patient menopausal status and serum CA 125 levels are combined then the risk of malignancy index (RMI) is calculated. This simple index can be useful in clinical practice and can be an important tool in the assessment of adnexal mass preoperatively. The usefulness of this index extends to referrals of patients with advanced neoplasia to suitable intricate healthcare units, while this index does not give the prognostic assessment. But, the performance of the existing index must be tested in other studies in the same population by using validation sample.

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

REFERENCES

1. Khaskheli M, Baloch S, Baloch AS. Gynecological malignancies: a continuing threat in the developing world. *J Gynecol Surg* 2010; 26:121-5.
2. Hamilton W, Peters TJ, Bankhead C, Sharp D. Risk of ovarian cancer in women with symptoms in primary care: population based case-control study. *BMJ* 2009 25;339:b2998.
3. Goff BA, Mandel LS, Drescher CW, Urban N, Gough S, Schurman KM, et al. Development of an ovarian cancer symptom index: possibilities for earlier detection. *Cancer* 2007; 109:221-7.
4. Bankhead C, Collins C, Stokes-Lampard H, Rose P, Wilson S, Clements A, et al. Identifying symptoms of ovarian cancer: a qualitative and quantitative study. *BJOG* 2008;115:1008-14.
5. Sturgeon CM, Lai LC, Duffy MJ. Serum tumour markers: how to order and interpret them. *BMJ* 2009;339:b3527
6. van den Akker PA, Aalders AL, Snijders MP, Kluivers KB, Samlal RA, Vollebbergh JH, et al. Evaluation of the Risk of Malignancy Index in daily clinical management of adnexal masses. *Gynecol Oncol* 2010; 116:384-8.
7. Quaye L, Gayther SA, Ramus SJ, Di Cioccio RA, McGuire V, Hogdall E, et al. The effects of common genetic variants in oncogenes on ovarian cancer survival. *Clin Cancer Res* 2008; 14:5833-9.
8. Berrino F, De Angelis R, Sant M, Rosso S, Lasota MB, Coebergh JW, et al. Survival for eight major

- cancers and all cancers combined for European adults diagnosed in 1995-99: results of the EUROCARE-4 study. *Lancet Oncol* 2007; 8:773-8.
9. Colombo N, Van Gorp T, Parma G, Amant F, Gatta G, Sessa C, et al. Ovarian cancer. *Crit Rev Oncol Hematol* 2006; 60:159-79.
 10. Goff BA, Mandel L, Muntz HG, Melancon CH. Ovarian carcinoma diagnosis. *Cancer* 2000; 89: 2068-75.
 11. NICE. Referral guidelines for suspected cancer London: NICE, 2005.
 12. Vine MF, Calingaert B, Berchuck A, Schildkraut JM Characterization of prediagnostic symptoms among primary epithelial ovarian cancer cases and controls. *V Gynecol Oncol* 2003; 90:75-82.
 13. Bankhead C, Kehoe S, Austoker J. Symptoms associated with diagnosis of ovarian cancer: a systematic review. *BJOG* 2005; 112:857-65.
 14. Fures R, Bukovic D, Hodek B, Klaric B, Herman R, Grubisic G. Preoperative tumor marker CA 125 levels relation to epithelial ovarian cancer stage. *Coll Antropol* 1999; 23:189-94.
 15. Jacobs I, Oram D, Fairbanks J, Turner J, Frost C, Grudzinskas. A risk-of-malignancy index incorporating CA 125, ultrasound and menopausal status for the accurate preoperative diagnosis of ovarian cancer. *Br J Obstet Gynecol* 1990;97:922-9.
 16. Tingulstad S, Hagen B, Skjeldestad FE, Onsrud M, Kiserud T, Halvorsen T, et al. Evaluation of a risk-of-malignancy index based on serum CA 125, ultrasound findings and menopausal status in the preoperative diagnosis pelvic masses. *Br J Obstet Gynecol* 1996; 103:826-31.
 17. Leelahakorn S, Tangjitgamol S, Manusirivithay. Comparison of ultrasound score, CA125, menopausal status, and risk of malignancy index in differentiating between benign and borderline or malignant ovarian tumors. *J Med Assoc Thai* 2005; 88:22-30.

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The Analysis of Clinoepidemiological Variables of Psoriasis in a Tertiary Care Hospital in Karachi, Pakistan

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ABSTRACT

Objective: Psoriasis is a chronic inflammatory skin disease of unknown origin. Different factors might be influencing its course. The aim of our study was to observe and analyze different clinoepidemiological variables of psoriasis in patients reporting to a tertiary care hospital in Karachi.

Study Design: Prospective study

Place and Duration of Study: This study was conducted at Jinnah Postgraduate Medical Centre, Karachi, Pakistan from January 2014 to December 2014.

Materials and Methods: 200 patients (116 Males and 84 females) ages 18 and above with mild to severe psoriasis were selected and assessed on one occasion which included detailed history and examination. All data was documented on completion of study.

Results: A total 200 cases were studied. 90% had chronic plaque psoriasis. There was male preponderance with a male to female ratio of 1.38:1. Mean peak age of onset was 11-20 years of age and was earlier in females than males. More than two-third of patients had onset of psoriasis before or at 40 years of age. Familial occurrence was present in 38% of patients and 35% had first degree relative involvement. Psoriatic arthropathy was present in 35% of patients. 86.36% of the patients with arthropathy had onset of psoriasis before 40 years of age. 21% of patients reported worsening of their psoriasis with sun. 32% of the patients in this study were smokers and most of them were males.

Conclusion: The findings of this study done in Karachi, Pakistan correlates with previous hospital-based studies done in different parts of the world.

Key Words: Clinoepidemiological variables, Psoriasis, Pakistan.

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INTRODUCTION

Psoriasis is a common, chronic, genetically determined, intractable inflammatory skin disease characterized clinically by well-circumscribed erythematous plaques bearing large adherent silvery scales involving particularly extensor prominence and the scalp and having a significant negative impact on the physical, emotional, and, psychosocial wellbeing of affected patients.¹ It affects around 2% of the population in the world.²

Morphological variants are common but chronic, symmetrical, erythematous, scaling papules and plaques being the commonest type.^{3,4} In approximately 6% to 42% there may be associated mild to severe inflammatory arthritis of peripheral and/or axial joints usually with a negative rheumatoid factor.⁵ The activity of psoriatic arthritis may correlate with the activity of the cutaneous disease.⁶

Psoriasis can present at any age but usually it has bimodal peaks.⁷ Both genders are affected in about

same proportion. Psoriasis runs highly unpredictable courses with variable periods of waxing and waning causing great disability in some patients.⁸ Psoriasis aggregates in families and family history is positive for the disease in approximately one third of cases. It not only favors the early development of psoriasis, but also increases the probability of its being severe.⁹

Age of onset has been shown to affect the course of psoriasis and psoriasis vulgaris has been divided into an early onset group (Type I) and a late onset group (Type II). Patients with an early onset of psoriasis followed an irregular course with frequent relapses, whereas late onset psoriasis had sporadic courses with less chance of becoming generalised.¹⁰

Sun-light has a beneficial effect on psoriasis in the majority of patients. However it may actually worsen psoriasis in a certain percentage of patients.¹¹

Prevalence of smoking has been found to be high in psoriatics as compared to the control population. Furthermore it was the cause and not the effect of the disease because analysis done in case control studies demonstrated a high prevalence of smoking in psoriatics before the onset of their disease as compared to controls at the same point in time.¹²

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Despite of vast research the exact pathogenesis is still not known. However there is genetic predisposition with environmental factors playing an important role. There is currently no cure for psoriasis. The aim of treatment is therefore to induce remissions and to minimize the patient's disability.¹³

In the past many studies on epidemiological and clinical variables of psoriasis have been done in different countries^{14,15,16,17}. Since we work in a tertiary care hospital in Karachi Pakistan we share our experience of 200 patients reporting to our hospital with psoriasis.

Our aim was to analyze different cliniepidemiological variable of psoriasis in patients treated in Jinnah Postgraduate Medical Centre Karachi, Pakistan.

MATERIALS AND METHODS

This was an open prospective study of 200 patients ages 18 and above, male and female suffering from psoriasis, who were randomly selected from the Dermatology Out-patient Department and the Dermatology ward of the Jinnah Postgraduate Medical Centre Karachi,

Pakistan. Ethical approval was sought. Information leaflet were distributed and informed consent taken. Patients were assessed on one occasion. Detailed history was taken which includes questions regarding general data, age of onset of disease, presence or absence of family history of psoriasis, smoking habits, previous treatments received. Then subjects were examined to note the type of psoriasis and any involvement of the joints. All data was documented on completion of study.

RESULTS

200 patients, 116 males and 84 females were recruited from the out-patient (76%) and in-patient (24%) Departments of the Dermatology of Jinnah Postgraduate Medical Centre Karachi. Their ages range from 21-62 years (Mean 49.82 ± 17.67) with a history of psoriasis ranging from 1-40 years (Mean 20.4 ± 15.92) (Table-1).

Table No.1: Demographic data

	Number	Age		Status		Duration of disease	
		Range	Mean	Out-patient	In-patient	Range Years	Mean
All patient	200	21-62	49.82 ± 17.67	76% (n=152)	24% (n=48)	1-40	20.4 ± 15.92
Male	116	21-62	50.38 ± 19.43	36% (n=72)	22% (n=44)	2-40	21.59 ± 17.03
Female	84	21-60	49.05 ± 15.35	40% (n=80)	2% (n=4)	1-38	18.76 ± 14.47

Most of the patients had chronic plaque psoriasis (90%), Next in frequency were guttate 6%, erythrodermic 2% and palmoplantar pustular psoriasis 2%. 30% of patients had a history of systemic illnesses. 58% of patients were never admitted to the hospital for psoriasis and in 54% of patients disease was controlled with systemic treatment.

21% of patients reported worsening of their psoriasis with sun. All others had either beneficial effect (21%) or no effect.

Onset age of psoriasis in this study ranged from 3-60 years, with males having a range of 5-58 years and females a range of 3-60 years. The peak age of onset was earlier in females (11-20) than in males (31-40). More than 40% of patients had onset of disease before or at 20 years of age and more than 70% had onset before or at 40 years of age (Table-2). The mean age of onset in females was 28.79 ± 21.27 where as in males it was 30.43 ± 17.61 .

Table No.2 Distribution of age of onset in both sexes

Onset age (Years)	All patients	Males	Females
0-20	48%	44.82%	52.38% .
21-40	30%	27.58%	35.71%
41-60	22%	27.58%	11.90%

38% of patients had a family history of psoriasis and in 35% of patients first degree relatives were involved.

When relationship of family history with age of onset of psoriasis was looked into, it was found that 82% of patients who had a history of first degree family member involvement, had onset of psoriasis at or before 40 years of age.

35% of patients had one or more joint involvement. 58.82% were females and 41.18% were males. Most of the patients with arthropathy had onset of psoriasis before 40 years of age (86.36%). 52.94% of patients with psoriatic arthritis had also a family history of psoriasis as compared to 47.06% of patients who had arthritis but no family history.

Smoking: The prevalence of smoking in this study was 32 % (50.86% in males and 5.95% in females) and the ranges of pack years were 0-50 in all patients.

DISCUSSION

Although psoriasis one of the common skin diseases occurring worldwide, its prevalence varies among different countries and races considerably. The results from the systematic review done by Rosa Parisi et al confirmed that psoriasis was more in adults as compared to children and that there was worldwide geographic variation in its prevalence influenced by both genetic and environmental factors with populations located closer to the equator (Egypt, Tanzania, Sri Lanka, Taiwan) were less affected by

psoriasis compared with countries more distant from it (Europe and Australia).¹⁸

Our study showed a higher proportion of males affected by psoriasis, which is similar to finding by Kaur et al.¹⁹ however some studies showed equal distribution in both genders while others found higher prevalence of psoriasis in females.^{4,17,20,19}

Sun exposure has beneficial effect in Psoriasis in majority of patients through its immunosuppressive effect²²; however some patients report worsening with it¹¹. We found worsening of psoriasis with Sun exposure in 21% of cases.

Although psoriasis can start at any age but majority of patients develop it before 40 years of age. The present study found the peak age of onset to be 11-20 years of age and this was found to be earlier in females (11-20) than in males (31-40). These findings are in accordance with the findings of Holgate MC and others.^{23,24} More than three quarters of patients in our study developed disease before 40 years of age, corresponding to the figure found by Tilo Henseler and Enno Christophor.¹⁰ According to Lomholt, age of onset was an important piece of information to know the effect of environment. Presumably an earlier age of onset of psoriasis is manifested in those with a strong genetic tendency for developing psoriasis and environment acts as a cofactor in the precipitation of the disease.⁷

More than one third of our patients had a history of first degree relative involvement with psoriasis in accordance with the findings of others.²⁰ Another study done found family history positivity in 10% of cases.⁴ Most of the patients in our study who had a positive family history also had an earlier onset of psoriasis (<40 years). Farber and Nall²⁰ almost found same figure with approximately three quarter of their patients with family history had an onset of psoriasis before 30 years of age. These findings support that psoriasis has a strong familial tendency.

Most of our patients had plaque psoriasis in accordance with the findings of others.^{4,24}

This study demonstrated a prevalence of 35% of psoriatic arthritis as found by others.^{25,26} However some studies have demonstrated low prevalence rates.^{27,28}

Since all patients in this study were recruited from a referral hospital this might have led to high proportion of psoriatic arthropathy.

Almost 32% of the patients in this study were smokers and most of them were males. This prevalence of smoking is high as compared to the prevalence of 26% in general population of Karachi.²⁹ Several studies in the past have also demonstrated a high prevalence of smoking among psoriatics than non-psoriatics.³⁰

CONCLUSION

Though this was a small prospective study, the results were similar to previous reports published in Pakistan and other countries.

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

REFERENCES

1. Armstrong AW, Schupp C, Wu J, Bebo B (2012). Quality of Life and Work Productivity Impairment among Psoriasis Patients: Findings from the National Psoriasis Foundation Survey Data 2003–2011.
2. World Health Organization Executive Board eb133/5 133rd session 5 April 2013 Provisional agenda item 6.2
3. Dogra S, Yadav S. Psoriasis in India: Prevalence and pattern. *Ind J Dermatol Venereol Leprol* 2010; 76:595-601.
4. Brandrup F, Green A. The prevalence of psoriasis in Denmark. *Acta Derm Venereol* 1981; 61: 344-6.
5. Gladman DD, Antoni C, Mease P, Clegg DO, Nash P. Psoriatic arthritis: epidemiology, clinical features, course, and outcome. *Ann Rheum Dis* 2005;64
6. Leczinsky GS. The incidence of arthropathy in a ten-year series of psoriasis cases. *Acta Derm Venereol (Stockh)* 1948;28: 483-487.
7. Lomholt C. Psoriasis: Prevalence, spontaneous course and genetics. Copenhagen, Denmark: GEC GAD; 1963.
8. Fry L. Psoriasis: Centenary Review. *Br J Dermatol* 1988;119:445-461.
9. Church R: The Prospects Of Psoriasis: *Br J Dermatol* 1958;70: 139-145.
10. Henseler T, Christopher E: Psoriasis of early and late onset: Characterisation of two types of psoriasis vulgaris. *J Am Acad Dermatol* 1985;13: 450-456.
11. Cross AM, Eklund G. Photosensitive psoriasis: An epidemiologic study. *J Am Acad Dermatol* 1987; 17:752-8.
12. Mills CM, Srivastava ED, Harvey IM, et al. Smoking Habits in Psoriasis: A case control study. *Br J Dermatol* 1992; 127: 18-21.
13. Greaves MW and Weinsrein GD. Treatment of psoriasis. *N Engl J Med* 1995; 332: 581-588.
14. Gunawardena DA, Gunawardena KA, Vasanthan NS, Gunawardena JA. Psoriasis in Sri Lanka – a computer analysis of 1366 cases. *Br J Dermatol* 1978; 98: 85-96. 28.
15. Bedi TR. Psoriasis in North India. *Dermatologica* 1977; 155: 310-4. 29.
16. Watson W. Psoriasis: epidemiology and genetics. *Dermatol Clin* 1984;2: 363-71. 30.
17. Kundakci N, Tursen U, Babiker MOA, Gurgey E. The evaluation of the sociodemographic and clinical features of Turkish psoriasis patients. *Int J Dermatol* 2002; 41: 220-4. 31.
18. Parisi R, Symmons DPM, Griffiths CEM, Ashcroft DM. Global Epidemiology of Psoriasis: A

- Systematic Review of Incidence and Prevalence. *J Investigative Dermatol* 2013;133:377–385.
19. Kaur I, Handa S, Kumar B. Natural history of psoriasis: a study from the Indian subcontinent. *J Dermatol* 1997; 24(4): 230-4.
 20. Farber EM, Nall LM. The natural history of psoriasis in 5600 patients. *Dermatologica* 1974; 148: 1-18.
 21. Tsai TF, Wang TS, Hung ST, et al. Epidemiology and comorbidities of psoriasis patients in a national database in Taiwan. *J Dermatol Sci* 2011;63: 40–46.
 22. Søyland HE, Krogstad AL, Rodríguez-Gallego C, Nenseter MS, Jahnsen FL. Sun Exposure Rapidly Reduces Plasmacytoid Dendritic Cells and Inflammatory Dermal Dendritic Cells in Psoriatic Skin. *Br J Dermatol* 2011;165(4):792-801.
 23. Holgate MC. Psoriasis- age of onset and the relationship to the parental psoriasis. *Br J Dermatol* 1975; 92: 443-448.
 24. Ejaz A, Raza N, Iftikhar N, Iftikhar A, Farooq M. Presentation of early onset psoriasis in comparison with late onset psoriasis: A clinical study from Pakistan. *Indian J Dermatol Venereol Leprol* 2009; 75:36-40.
 25. Oriente CB, Scarpa R, Oriente P. prevalence of psoriatic arthritis in psoriatic patients. *Acta Derm-Venereol (Stockh)* 1984; Supp 113: 109-112.
 26. Haroon M, Kirby B, FitzGerald O. High prevalence of psoriatic arthritis in patients with severe psoriasis with suboptimal performance of screening questionnaires. *Ann Rheum Dis* 2013; 72:736–40
 27. FC, Icen M, Crowson CS, McEvoy MT, Gabriel SE, Kremers HM. Incidence and clinical predictors of psoriatic arthritis in patients with psoriasis: a population-based study. *Arthritis Rheum* 2009; 61(2):233-9.
 28. Ahmed TJ, Kapadia N, Ashgaiz H. Patterns of joint involvement in psoriasis: An observational study in local population. *J Pak Assoc Dermatol* 1998;8: 22-8.
 29. Rashid Ahmed, Rizwan-ur-Rashid, Paul W. McDonald, S. Wajid Ahmed. Prevalence of cigarette smoking among young adults in Pakistan. *JPMA* 2008;58:597.
 30. Braathen LR, Botten G and Bjerkedal T. Psoriatics in Norway. *Acta Derm Venereol (Stockh)* 1989; 142 (Supp): 10-12.

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In this link write the goals of the study.

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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.

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