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Editorial

Post COVID Syndrome: An Emerging Threat on Health Care

Post-COVID Syndrome is known as Long COVID, chronic COVID syndrome, long-hauler COVID-19 and can be defined by the National Institute for Health and Care Excellence (NICE) guideline as "signs and symptoms that develop during or after an infection consistent with covid-19 which continue for more than 12 weeks and are not explained by an alternative diagnosis".[1]

Post-COVID syndrome is a pathologic entity which involves persistent physical, medical, and cognitive sequelae following COVID-19, including persistent immunosuppression as well as pulmonary, cardiac, and vascular fibrosis. Pathologic fibrosis of organs and vasculature leads to increased mortality and severely worsened quality of life. The epidemiology of post COVID syndrome has not been well defined because of the unclear medium and long term pathophysiology across organ systems. When post-covid syndrome clinics are established, characterization of the epidemiology of the disease will help with appropriate diagnosis, care, public health interventions and policy, and resource planning.

Post-COVID syndrome has a prevalence of between 10-30% in patients with a recent history of SARS-CoV-2 infection. Patients with severe manifestations of COVID-19 often progress to acute respiratory distress syndrome (ARDS) and require mechanical ventilation. ARDS may cause permanent scarring of the lung tissue, resulting in respiratory problems that persist long after recovery.[2] Between 33 and 75% of patients with COVID-19 require mechanical ventilation, often for weeks at a time,[3] and there are significant short and long-term effects associated with prolonged intubation. Those on ventilators are more prone to respiratory infections, which, in turn, predispose patients to further harm and risk of permanent lung damage. Patients experiencing post intensive care syndrome (PICS) generally report higher incidences of cognitive and physical dysfunction, which often persist long-term.[4] PICS can also lead to disability and moderate or severe pain.[5] Because patients with severe COVID-19 infection frequently require prolonged intensive care unit (ICU) stays,[3] we hypothesize that survivors will be similarly at heightened risk of all these physical and cognitive impairments. This may be further exacerbated by the fact that unlike other patients requiring mechanical ventilation or in the ICU, patients with COVID-19 may not receive the physical and occupational therapy they need to recover due to concerns over spreading the disease or inadequate medical personnel or other resources, resulting in even greater likelihood of persistent functional loss and debility.

COVID-19 infection is also associated with high rates of extra-pulmonary complications that may continue to incur morbidity, disability, and delayed mortality in survivors. These include cardiac injury,[6] acute ischemic or hemorrhagic stroke,[7] neurological deficits,[8] acute kidney injury, including the

need for dialysis, and liver injury.[9] The thromboembolic complications of COVID-19, such as pulmonary embolism, stroke, and other microinfarctions, can cause a wide range of permanent organ damage. Independent of ARDS, severe pneumonia has been associated with increased risk of incident heart disease both in the immediate aftermath of the infection and in later years.[10] It is likely that the risk of heart disease in COVID-19 survivors will be even higher, confounded by high rates of underlying cardiovascular disease, hypertension, and diabetes among patients with severe COVID-19 infection and the independent effects of COVID19 on the cardiovascular system.

Even if patients with COVID-19 recover physically, they are vulnerable to long-lasting mental health problems. Long term psychological distress and post-traumatic stress disorder can develop in more than half of patients who survive critical illness.[11] While there is no long-term data on the psycholoical effects of COVID-19 infection and treatment, an earlier study of patients hospitalized for severe acute respiratory syndrome (SARS) found that more than one-third had moderate to severe depression and anxiety 1 year after physical recovery.[12] The mental health effects of surviving COVID19 may be further compounded by loneliness and isolation, job and economic loss, increased child care and familial responsibilities, and guilt if family members or other contacts contract the virus. Finally, COVID-19 survivors may experience chronic pain, which is commonly reported by ICU survivors,[13] potentially compounding the epidemic of opioid misuse already affecting many of the same vulnerable populations.

During 2020, increasing numbers of case reports, case series, and small observational studies reported long-term complications of corona virus disease 2019 (COVID-19) in patients who had recovered from acute infection with severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). Since May 2020, the Centers for Disease Control and Prevention (CDC) has recorded all reported cases of COVID-19 in USA. In April 2021, the American College of Rheumatology (ACR) revised its clinical guidelines for diagnosing and managing hyperinflammation and chronic multisystem inflammatory syndrome in children (MIS-C). Pulmonary, hematologic, cardiovascular, neuropsychiatric, renal, endocrine, gastrointestinal and hepatobiliary, and dermatologic involvement, and chronic multisystem inflammatory syndrome in children (MIS-C) highlights the requirement for a multidisciplinary approach to the management of patients with long COVID.

Potential long-term effects from post COVID syndrome will assume increasing importance as a surge of treated patients are discharged from the hospital, placing a burden on healthcare systems, patients' families, and society in general to care for these medically devastated COVID-19 survivors. Urgent research is needed to understand the risk factors for post-covid syndrome so that treatment can be targeted better to demographically and clinically at risk populations.

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References

1. National Institute for Health and Care Excellence. COVID-19 rapid guideline: managing the long-term effects of COVID-19. 2020. https://www.nice.org.uk/guidance/ng188
2. Thompson BT, Chambers RC, Liu KD. Acute Respiratory Distress Syndrome. N Engl J Med. 2017;377:562-72.
3. Goyal P, Choi JJ, Pinheiro LC, et al. Clinical Characteristics of Covid-19 in New York City. N Engl J Med. 2020.
4. Pandharipande PP, Girard TD, Jackson JC, et al. Long-term cognitive impairment after critical illness. N Engl J Med. 2013;369:1306-16.
5. Griffiths J, Hatch RA, Bishop J, et al. An exploration of social and economic outcome and associated health-related quality of life after critical illness in general intensive care unit survivors: a 12-month followup study. Crit Care. 2013;17:R100

6 . Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020;395:497-506.

7 . Mao L, Jin H, Wang M, et al. Neurologic Manifestations of Hospitalized Patients With Coronavirus Disease 2019 in Wuhan, China. JAMA Neurol. 2020.8. Helms J, Kremer S, Merdji H, et al. Neurologic Features in Severe SARS-CoV-2 Infection. N Engl J Med. 2020.

9 . Zhang C, Shi L, Wang F-S. Liver injury in COVID-19: management and challenges. Lancet Gastroenterol Hepatol. 2020;5:428-30.

10. Corrales-Medina VF, Alvarez KN, Weissfeld LA, et al. Association between hospitalization for pneumonia and subsequent risk of cardiovascular disease. JAMA. 2015;313:264-74.

11. Hatch R, Young D, Barber V, Griffiths J, Harrison DA, Watkinson P. Anxiety, Depression and Post Traumatic Stress Disorder after critical illness: a UK-wide prospective cohort study. Crit Care. 2018;22:310.

12. Lee AM, Wong JG, McAlonan GM, et al. Stress and Psychological Distress among SARS Survivors 1 Year after the Outbreak. Can J Psychiatry. 2007;52:233-40.

13. Devine H, Quasim T, McPeake J, Shaw M, McCallum L, Mactavish P. Chronic pain in intensive care unit survivors: incidence, characteristics and side-effects up to one-year post-discharge. J Rehabil Med. 2019;51:451-5

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Journal Article on the Internet

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Cancer-Pain.org [Internet]. New York: Association of Cancer Online Resources [updated 2002 May 16; cited 2002 Jul 9]. Available from: http://www.cancer-pain.org/.

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Original Article

Status of serum zinc level in patient with pulmonary tuberculosis

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Abstract

Background: Tuberculosis is an infectious disease caused by the bacillus Mycobacterium tuberculosis. Bangladesh ranks 6th among 22 highest burden TB countries in the world. Micronutrient deficiency is common in pulmonary tuberculosis but still poorly documented. Zinc is essential for immune function, deficiency of zinc lead to impaired immunity and thereby increases susceptibility to infections such as tuberculosis. Several studies in abroad have demonstrated that the serum zinc level is decreased during active pulmonary tuberculosis. The aim of this study is to determine serum zinc levels in pulmonary tuberculosis patients.

Objective: To assess the serum zinc level in pulmonary tuberculosis patient and healthy individual.

Methods: A descriptive, cross sectional study was conducted from January 2016 to December 2016 among 50 pulmonary tuberculosis patients attending at Respiratory Medicine Department of the Dhaka Medical College Hospital and 50 healthy individuals, after obtaining requisite consent from the patients. Data were collected through the interviewing of the patients. The collected data were entered into the computer and analyzed by using SPSS (version 20.1) to assess the serum zinc level in pulmonary tuberculosis patients and healthy individuals. The study was approved by the institutional ethical committee.

Results: In a pool of 50 tuberculosis patients and 50 healthy individuals, serum zinc (μmol/l) (mean ± SD) level was significantly lower ($p < 0.001$) in pulmonary tuberculosis without treatment (8.9 ± 2.1) than normal individuals (15.6 ± 4.8).

Conclusion: Serum zinc level was significantly lower ($p < 0.001$) in pulmonary tuberculosis patients without treatment. Zinc rich food and zinc supplementation may be helpful to improve the immune status of TB patients.

Keywords: Tuberculosis patient, Serum zinc level.

Introduction

Tuberculosis (TB) is a major public health problem in Bangladesh. Bangladesh ranks 6th globally in terms of the burden of TB on the population. According to the World Health Organization, around 3,50,000 Bangladeshi developed TB in 2013 and around 80,000 die from TB every year, which accounts for just under 9% of the deaths in Bangladesh every year. Hence, every hour, nine people die of TB in Bangladesh, despite an effective treatment being available.[1] Tuberculosis is caused by two organisms namely mycobacterium tuberculosis and mycobacterium bovis. It typically affects the lungs (pulmonary TB) but can affect other sites as well (extra pulmonary TB). It is characterized by persistent cough, difficulty in breathing, coughing up blood, generalized weakness, loss of appetite, night sweats, fever, chills, unintentional weight loss etc. In 17th and 18th centuries, tuberculosis caused up to 25% of all deaths in Asia.[2] Malnutrition is frequently observed in patients with pulmonary tuberculosis, but their nutritional status especially of micro nutrients, is still poorly documented. Among the micro nutrients, zinc is essential for human growth, development and immune function, deficiency of this micro nutrient impairs overall immune function and resistance to infection.[3] A study in Uganda demonstrated that poor zinc status is common among adults with pulmonary tuberculosis.[4]

Materials & method

A cross sectional study was conducted in the Department of Biochemistry, Dhaka Medical College, Dhaka in collaboration with Department of Respiratory Medicine, DMC from January 2016 to December 2016.

According to selection criteria 100 subjects were selected age ranged from 20 to 60 years and equally divided into two groups. Group-A was newly diagnosed pulmonary tuberculosis patients before receiving treatment in the TB center of Department of Respiratory Medicine, Dhaka Medical College Hospital and Group-B was apparently healthy volunteers. The study protocol was approved by IEC of Dhaka Medical College Hospital. There are no violations of moral and ethical norms during preparation of this research. Purposive sampling was adopted for collecting data. The interviews were held directly in the corridor just outside the Outpatient Department. The relevant information was entered into the predesigned proforma. The collected data were entered into the computer and analyzed by using SPSS (version 20.1). Data were expressed as mean ± SD. The statistical analysis was done by ANOVA and Chi Square test.

Result

Table-I: Age and sex of study subjects in different groups (N = 100)

Parameter	Group		p-value
	Group A (n=50)	Group B (n=50)	
Age (years)	36.5 ± 9.28	37.2 ± 7.5	0.719 a
Gender			
Male n (%)	28 (56.0)	26 (52.0)	0.722 b
Female n (%)	22 (44.0)	24 (48.0)	

Group-A: Pulmonary TB patients without treatment, Group-B: Healthy individuals

Level of significance $p < 0.05$, Data are express as mean ± SD

a = ANOVA test was done, b = Chi-square test was done

Table-I shows that age (mean ± SD) and gender of pulmonary TB patients without treatment and healthy individuals. Study subjects were age & gender matched.

Table-II: Blood pressure of study subjects in different groups (N= 100)

Parameter	Group		p-value
	Group A (n=50)	Group B (n=50)	
Systolic BP (mm of Hg)	121.8 ± 17.5	120.3 ± 16.7	0.885
Diastolic BP (mm of Hg)	79.5 ± 14.5	78.1 ± 12.3	0.798

Group-A: Pulmonary TB patients without treatment, Group-B: Healthy individuals

Level of significance $p < 0.05$, Data are express as mean ± SD, ANOVA test was done

Table-II shows mean ± SD of systolic BP and diastolic BP, there was no significant difference of SBP and DBP in between groups.

Table-III: BMI of the study subjects in different groups (N=100)

Parameter	Group		p-value
	Group A (n=50)	Group B (n=50)	
BMI (kg/m²)	18.5 ± 2.8	23.4 ± 3.5	< 0.05

Group-A: Pulmonary TB patients without treatment, Group-B: Healthy individuals

Level of significance $p < 0.05$, Data are express as mean ± SD, ANOVA test was done

Table-III shows Mean ± SD of BMI was significantly lower in pulmonary TB patients without treatment and normal healthy individuals.

Table-IV: Serum zinc level of the study subjects in different groups (n=100)

Parameter	Group		p-value
	Group A (n=50)	Group B (n=50)	
Serum zinc (µmol/l)	8.9 ± 2.1	15.6 ± 4.8	< 0.001

Group-A: Pulmonary TB patients without treatment, Group-B: Healthy individuals

Level of significance $p < 0.05$, Data are express as mean ± SD, ANOVA test was done

Table-IV shows serum zinc level in study subjects. Serum zinc level was significantly lower in pulmonary TB patients without treatment than normal healthy individuals.

Discussion

This cross sectional study was done on pulmonary tuberculosis patients in the Department of Biochemistry, Dhaka Medical College, Dhaka during the period of January 2016 to December 2016. A total of 100 subjects were selected according to the selection criteria. Among them, 50 pulmonary TB patients without treatment were included in group A and 50 apparently healthy individuals were included in group B. Serum zinc (µmol/l), BMI (kg/m²) and blood pressure (mm-Hg) was measured. According to this study, mean± SD value of BMI in group A and group B were 18.5 ± 2.8 and 23.4 ± 3.5 kg/m² respectively. Mean BMI was significantly lower in pulmonary TB patients without treatment than that of normal healthy individuals. This finding was consistent with the cohort study which was included 1557 study subjects where the aim was to find out the association of body mass index with timing of

death during tuberculosis treatment. They concluded that for tuberculosis patients, body mass index less than 18.5 kg/m² is an independent predictor for early mortality within the first 8 weeks of treatment.[5]

A case-control study was done to assess the body mass index and nutritional status in pulmonary tuberculosis patients.[6] In this study 60 patients with active pulmonary tuberculosis and 60 controls was selected for study subjects. They concluded that there is a significant degree of nutritional depletion and weight loss in PTB patients than in general population.[6] There are some other studies have been done regarding BMI and PTB patients.[2] A cross-sectional study was done on 319 PTB patients[2] and another retrospective cohort study which includes 1090 TB patients was done.[7] In both studies BMI was found significantly low in PTB patients. All of these observations establish that there was a significant degree of nutritional depletion and weight loss occurred in PTB patients. BMI is considered to be a useful technique for assessment of nutritional state of PTB. According to our study, mean ± SD of serum zinc level was 8.9 ± 2.1 and 15.6 ± 4.8 µmol/l respectively in pulmonary tuberculosis patients without treatment (Group A) and healthy individuals (Group B). Mean serum zinc level was significantly lower ($p < 0.001$) in group A than that of group B. A case-control study was done to evaluate the nutritional status of patients with active pulmonary tuberculosis and compared the values with those of healthy controls.[8] In this study, 41 out-patients aged 15–55 years with untreated active pulmonary TB were compared with 41 healthy controls selected from neighbors of the patients and matched for age and sex. They found poor nutritional status and significantly low serum zinc levels in tuberculosis patients compared to control.[8] This findings is consistent with the results of our study.

Conclusion

Assessment of serum zinc level helps to find out the nutritional status and progress of tuberculosis. In our study, Serum zinc level was significantly lower ($p <0.001$) in pulmonary tuberculosis patients without treatment than healthy individuals. Our study concludes that estimation of the zinc level could be used as a valuable laboratory tool to assess the effectiveness of the ongoing anti-tubercular therapy. We suggest that, in view of the poor nutritional status in patients of pulmonary TB, zinc supplementation be a mandatory constituent of the treatment protocol.

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Conflict of Interest

Authors declare no conflict of Interest.

References

1. Armah, B. 'Sustaining Health for Wealth: Perspectives for the Post-2015 Agenda Comment on- Improving the world's health through the post-2015 development agenda: perspectives from rwanda'. International Journal of Health Policy and Management. 2015; 4(10): 673-675.
2. Benova, L., Fielding, K., Greig, J., Nyang'wa, B., Casas, E., Da Fonseca, M. and Du Cros, P. 'Association of BMI category change with TB treatment mortality in HIV-positive smear-negative and extra pulmonary TB patients in Myanmar and Zimbabwe', PLoS. 2012; 7(4): 1-7.
3. Karyadi, E., Schultink, W., Nelwan, R., Gross, R. and E.West, C. 'Poor micronutrient status of active pulmonary tuberculosis patients in Indonesia'. The Journal of Nutrition. 2000; 130(32): 2953–2958.
4. Lai, H., Lai, Y. and Yen, Y. 'Association of body mass index with timing of death during tuberculosis treatment', PLoS. 2017; 12(1): 1-12.
5. Lettow, V., M., Harries, A., Kumwenda, J., Zijlstra, E., Clark, T., Taha, T. and Semba, R. 'Micronutrient malnutrition and wasting in adults with pulmonary tuberculosis with and without HIV co-infection in Malawi'. BMC Infectious Diseases. 2004; 4(1): 1-8.
6. Okur, E., Yilmaz, A., Saygi, A., Selvi, A., Süngün, F., Öztürk, E. and Dabak, G. 'Patterns of delays in diagnosis amongst patients with smear-positive pulmonary tuberculosis at a teaching hospital in Turkey'. Clinical Microbiology and Infection, 2006; 12(1): 90-92.
7. Shah, S. and Whalen, C. 'Severity of Human Immuno deficiency Virus Infection Is Associated with Decreased Phase Angle, Fat Mass and Body Cell Mass in Adults with Pulmonary Tuberculosis Infection in Uganda'. Journal of Nutrition. 2001; 131(11): 2843-2847.
8. Sultan, K. and Alobaidy, M. 'Assessment of body mass index and nutritional status in pulmonary tuberculosis patients'. Journal of Faculty of Medicine Baghdad. 2012; 54(3): 204-208.

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Original Article

Assesment of Frequency of Distal Radius Fracture in Tertiary Care Hospital

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Abstract

Background: Fracture of the distal radius is one of the most common fractures. It has been estimated to account for one-sixth of all fractures that are seen and treated in the emergency department. No other fracture has a greater potential to devastate hand function. Understanding the epidemiology of distal radius fractures may be of great importance to clinicians for identifying the risk groups and protect them.

Objective: The aim of the present study was to asses the frequency of distal radius fracture.

Methods: A prospective observational study was conducted from July 2016 to June 2018 among 32 patients attending at Orthopaedics and Traumatology department of the Dhaka Medical College Hospital after obtaining requisite consent from the patients. The collected data were entered into the computer and analyzed by using SPSS (version 20.1) to know the epidemiology of distal radius fracture. The study was approved by the institutional ethical committee.

Results: 32 patients were enrolled for the study. The mean age of the patients was 37.56±11.82. More than half of the respondents were male (68.75%). Highest number (31.25%) of patients came from worker community. The commonest cause (62.52%) of distal radius fracture was road traffic accidents. Most of the patients (78.12%) had closed fractures. Out of 32 patients only 6 patients had associated major injury which represents 25.01%.

Conclusion: Male and elderly populations are considered at high risk for distal radius fracture.

Keywords: Distal radius fracture, open fracture, closed fracture.

Introduction

Distal radius fractures are one of the most common types of fractures, accounting for around 25% of fractures in the pediatric population and up to 18% of all fractures in the elderly age group. Although the pediatric and elderly populations are at the greatest risk for this injury, distal radius fractures still have a significant impact on the health and well-being of young adults.[1] The incidence rate of distal radius fractures is known to be higher in males than in females. Patients with fracture of distal end of radius have serious complications more frequently than generally appreciated and failure in management may cause permanent disability.[2] Understanding the epidemiology of this fracture is an important step towards the improvement of the treatment strategies and preventative measures which target this debilitating injury.

Materials & Methods

A prospective observational study was conducted from July 2016 to June 2018 among 32 patients attending at Orthopaedics and Traumatology department of the Dhaka Medical College Hospital after obtaining requisite consent from the patients. Purposive sampling was done to collect the data. The collected data were entered into the computer and analyzed by using SPSS (version 20.1).

Result

Table-I shows distribution of patients by age. In this study the highest number of patients 9 (28.13%) were within 35-43 years. The mean age was 37.56±11.82 years.

Table-I: Age distribution of the study population (n=32

Age in years	Frequency	Percentage (%)
18 – 25 years	7	21.88 %
26 – 34 years	8	25 %
35 – 43 years	9	28.13 %
44 – 52 years	3	9.38 %
≥53 years	5	15.63 %
Total	**32**	**100 %**

Among the study population male (68.75%) was found 22 and female (31.25%) was 10 (Table-II).

Table-II: Sex Distribution of the study population (n=32)

Parameters	Number	Percentage
Sex		
Male	22	68.75 %
Female	10	31.25%
Total	**32**	**100**

According to table III, highest number of patients 10 (31.25%) came from worker community. Next highest group was housewife 7 (21.88%)

Table III: Occupation status of the study population (n=32)

Occupation	Frequency	Percentage (%)
Community worker	10	31.25 %
Housewife	7	21.88 %
Farmer	5	15.63 %
Businessman	4	12.5 %
Student	3	9.38%
Service holder	3	9.38%
Total	**32**	**100%**

Distal radial fractures of this series resulted from different causes. Table IV shows that the commonest cause was road traffic accidents. It happened in 20 (61.90%) out of 32 patients.

Table-IV: Distribution of patients according to the cause of injury (n=32)

Causes of injury	Frequency	Percentage (%)
Road traffic accidents	20	62.50 %
Fall on slippery ground	10	31.25 %
Occupational accident	2	6.25 %
Total	**32**	**100 %**

According to table V, most of the patients had closed fractures. Number of such cases was 25 (78.12%)

Table-V: Distribution of patients according to soft tissue involvement (n=32)

Type of fracture	Frequency	Percentage (%)
Open fracture	7	21.88 %
Closed fracture	25	78.12 %
Total	**32**	**100 %**

Table VI shows that out of 32 patients only 8 patients had associated major injury which represents 25 %. Among them, patients presented more with distal ulnar fracture (12.50%)

Table-VI: Distribution of associated injury (n=32)

Associated injury	Frequency	Percentage (%)
Trochanter fracture	3	9.38 %
Shoulder dislocation	1	3.13 %
Fracture distal end of ulna	4	12.50 %

Discussion

In this study it is observed that mean age of the patient was 37.56 ± 11.82 years and the maximum number of the patients belonged to the age range between 35 to 43 years. Bacron & Kurtzke in a study with two thousand cases in New York between the period of 1945 to 1949 had found that the average age of the patients was 48.2 years 3.In this study 22 patients were male (68.75%) and 10 were female (31.25%). Dissimilar results were obtained in the study conducted by Baron, JA et al.(1996) study. In their study they stated that womens were approximately 4.88 times more likely than men to obtain a distal forearm fracture.[4] In this study most of them (20 patients) sustained injury by road traffic accident, followed by fall on

out-stretched hand (10 patients). It represent 61.90% and 31.25% respectively. In the study by Bacron & Kurtzke, it has been mentioned that fall on the out stretched hand was the most common cause of the injury.[3] In our study only 8 patients out of 32 patients presented with aasociated injury. Common associated injury was fracture of the distal end of ulna. Ahmed bazzi in his study stated that distal radius fractures are commonly associated with ulnar fractures, either at the same level or at the ulnar styloid.[5]

Conclusion

Male and elderly populations are considered at high risk for distal radius fracture. Understanding the frequency of distal radius fractures can help physicians choose the most appropriate treatment options for the fracture, as well as effectively target preventative measures towards at-risk populations.

References

1. Nellans, K.W., Kowalski, E., Chung, K.C. (2012) " The epidemiology of distal radius fracture", Hand clin, Vol. 28 (2), pp. 113-125.
2. Wadsworth, T.G., 1990, "Colles' fracture: Failure in management may cause permanent disability", British medical journal, 301, pp.192-94.
3. Bacorn, R.W. and Kurtzke, J.F., (1953), "Colles' Fracture : A Study of Two Thousand Cases From the New York State Workmen'S Compensation Board", JBJS, vol 35(3), pp.643-658.
4. Baron, J.A., Karagas, M. et al. (1996), "Basic epidemiology of fractures of the upper and lower limb among americans over 65 years of age" vol. 6, pp. 612-628
5. Bazzi A., Shannon B., Sponseller P. (2015) "Distal Radius Fractures", The Pediatric Upper Extremity, pp 1047-1068.

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Original Article

Evaluation of Socio-Demographic Characteristics in Primary Headache Patients in Tertiary Care Hospital

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Abstract

Objectives: To find out socio demographic profile of headache patients who presented in neurology outdoor in Dhaka National Medical College & Hospital.

Methodology: It was a cross sectional observational study among 100 patients presented in Neurology OPD from the period of January 2018 to June 2018 in Dhaka National Medical College Hospital (DNMCH). A preformed questionnaire was used to collection data and was analyzed with STATA 10 software.

Results: Among 100 headache patients most of them were TTH (72%) rest of them were Migraine (28%) and female predominant (76%) age between 34.2±9.8. Most of them are sedentary worker (96%) and from lower middle class family (76%) and according to educational qualification 94% are undergraduate, among them 24% were illiterate and rest of 70% studied up to HSC and only 6% were graduated and above.

Conclusion: Sociodemographic profile has an impact on headache character, so we need to recognize these sociodemographic profiles for proper management of headache patients.

Keywords: Headache, Socio-demographic study

Introduction

Headache is one of the common comorbidities experienced by many populations while headache has been an unaddressed cause of morbidity around the world, it has remained largely unrecognized in the developing world.[1] Most of clinical and epidemiological studies are done in developed countries whereas there are vast socioeconomic and demographic variation between developed and developing countries. Among primary headache types tension type headache is the most prevalent one and after that migraine which hampering daily activities of many of the sufferers. A Canadian study showed lifetime prevalence of migraine was 7.8% in male and 24.9% in females[2] and one American study found that 38.3% of the population had experienced an episode of tension type headache in the past year.[3]

In these circumstances, this study was done to find out socioeconomic and demographic characteristics among headache patients which might influence frequency, duration and severity of headache and thus interfering proper management of headache patients.

Materials and methods

In this cross-sectional observational study, total numbers of 100 headache patients were randomly selected clinically from the period of January 2018 to June 2018 at neurology department of Dhaka National Medical College Hospital. The study was approved by institutional ethical committee.

For each patient a routine clinical questionnaire was completed. The questionnaire consisted of socio demographic details and types of headache among the study population. Patients with secondary cause of headache and other types except tension type and migraine and headache due to medication overuse were excluded from the study.

The International classification of headache disorder, version 3 was applied and as many diagnosis as was necessitated by the criteria and as was clinically justified, were assigned to each patient.[4]

Statistical analysis was done using STATA 10 software.

Results

In this Observational study among Headache patients in Neurology Department of DNMCH, total 100 patients were enrolled fulfilling inclusion and exclusion criteria.

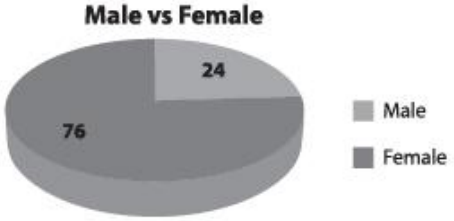

Figure-I: Graphical presentation of distribution of headache patients among Male and Female.

Table -I: Characteristics of participants (n=100)

Age in years	Freq.	Percent.	Cum.
Age	34.2±9.8 (Min 12- Max 50)		
Marital status			
Married	92	92%	92.00
Unmarried	8	8%	100.00
Occupation			
Service	6	6.00	6.00
Business	8	8.00	14.00
Student	16	16.00	30.00
Housewife	70	70.00	100.00
Nature of work			
Sedentary	96	96%	96.00
Moderate work	4	4%	100.00
Total	**100**	**100.00**	

Figure-II: Graphical presentation of socioeconomic status of study population.

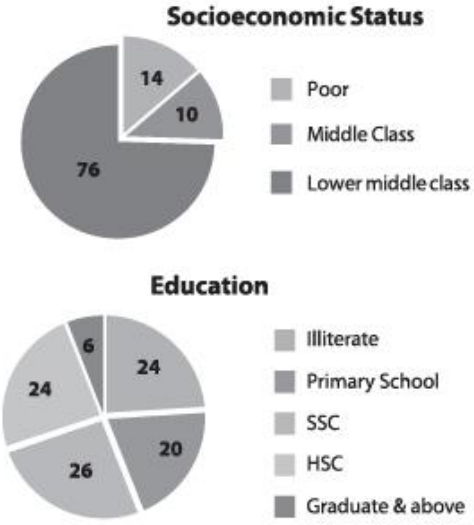

Figure-III: Graphical presentation of distribution of population according to educational qualification among them 24% were illiterate and rest of 70% studied up to HSC and only 6% were graduated and above.

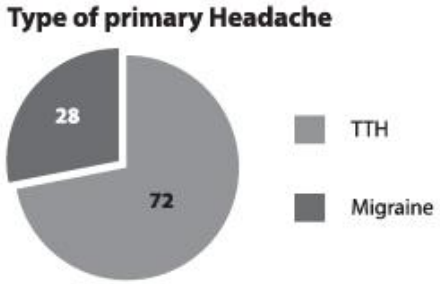

Figure-IV: Graphical presentation showing type of headache among study population (n=100)

Discussion

Socio-demography always playing a major role in precipitating tension/primary headache specially on population of developing countries like Bangladesh. Headache is a major health problem on all continents. Epidemiological study from around the world had suggested that tension type headache (TTH) is the most common cause of primary headache.[5]

In our study we have found female predominance (76%), mean age among population 34.2±9.8 years and most of the patients were married (92%) and maximum were housewife (70%) and leading a sedentary life style (96%) which are supported by Hossain M.A et al.[6] in their study they also found mean age 33.8±8.8 years, female predominance (72.7%) and most of the patients were housewife (57.6%). García-Cabo Fernández C et al and Jeyagurunathan A et al[7,8] also found similar socio demographic profile in their study on migraine patients but in García-Cabo Fernández C study mean age was higher (45 years) than our study may be due to increased life expectancy and most of the elderly people are actively working and on continuous stress and Jeyagurunathan A et al found mean age 26.4 years in Singapore which is lower than our they explained the reason due to increased stress, unhealthy lifestyle and increase obesity.

In our study we have found most of the patients from lower middle class family (76%), middle class (10%) and poor (14%), Haque B et al.[9] in their study in DMCH also found maximum population form middle class (58%) and lower class (40.6%). Another study showed that maximum headache prevalence occurs in lower middle class population.[10]

In our study we also found 24% of study populations were illiterate and rest of 70% studied up to HSC level and only 6% were graduated and above and maximum of these educated patients are young adults. El-Sherbiny et al.[11] and Bahrami P et al.[12] also found almost similar findings.

We also found TTH as the most prevalent type of primary headache (72%) and then migraine (28%) which was also supported by Birru et al.[13]

Limitation of study: As our study was hospital based and with a small sample size the result of our study cannot be extrapolated to general population. Secondary headache profile was not included in this study.

Conclusion

Sociodemographic profile has a significant impact on Headache character, and there is a major variation of these profiles from country to country and among different communities. So by recognizing these sociodemographic profiles and identifying their clinical types in headache patients we can set treatment modalities accordingly.

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References

1. Mateen F, Dua T, Stteiner T, Saxena S. Headache disorders in the developing countries; research over the past decade. Cephalagia. 2008.
2. O'Brien B, Goeree R, Streiner D. Prevalence of migraine headache in Canada: a population-based survey. Int J Epidemiol. 1994;23:1020-6.
3. Schwartz BS, Stewart WF, Simon D, Lipton RB. Epidemiology of tension-type headache. JAMA. 1998;279:381-3.
4. The International Classification of Headache Disorders: 2nd edition Cephalagia 2004; 24 (Suppl 1): 9-160.
5. Stovner LJ, Hagen K, Jensen R, et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia 2007; 27: 193–210
6. Hossain, M. A., Hakim, M., Hasan, M., Rahman, M. A., Rashid, M., Sagir, G., & Hussain, M. E. (2018). Socio-demographic and Comorbidity Profiles of Migraine Patients in a Headache Clinic of a Tertiary Care Hospital in Dhaka City. Journal of National Institute of Neurosciences Bangladesh, 3(1), 48-51. https://doi.org/10.3329/jninb.v3i1.36272
7. García-Cabo Fernández C, Sánchez-Lozano P, Pérez-Álvarez A, Martínez-Ramos JM, Martínez -Rodríguez L, Pascual J. Sociodemographic characteristics of a cohort of patients with chronic migraine from a health district in Asturias. Neurologia. 2016 Apr;31(3):157-60. English, Spanish. doi: 10.1016/j.nrl.2015.06.009. Epub 2015 Aug 21. PMID: 26304652.
8. Jeyagurunathan A, Abdin E, Vaingankar JA, Chua BY, Shafie S, Chang SHS, James L, Tan KB, Basu S, Chong SA, Subramaniam M. Prevalence and comorbidity of migraine headache: results from the Singapore Mental Health Study 2016. Soc Psychiatry Psychiatr Epidemiol. 2020 Jan;55(1):33-43. doi: 10.1007/ s00127-019-01755-1. Epub 2019 Aug 27. PMID: 31456029.
9. Haque B, Rahman KM, Hoque A, Hasan AT, Chowdhury RN, Khan SU, Alam MB, Habib M, Mohammad QD. Precipitating and relieving factors of migraine versus tension type headache. BMC Neurol. 2012 Aug 25;12:82. doi: 10.1186/1471 -2377-12-82. PMID: 22920541; PMCID: PMC3503560.
10. GBD 2016 Headache Collaborators. Global, regional, and national burden of migraine and tension-type headache, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet Neurol. 2018;17(11):954-976. doi:10.1016/S1474-4422(18)30322-3
11. El-Sherbiny, N.A., Masoud, M., Shalaby, N.M. et al. Prevalence of primary headache disorders in Fayoum Governorate, Egypt. J Headache Pain 16, 85 (2015). https://doi.org/10.1186/s10194-015-0569-6
12. Bahrami P, Zebardast H, Zibaei M, Mohammadzadeh M, Zabandan N. Prevalence and characteristics of headache in Khoramabad, Iran. Pain Physician. 2012 Jul-Aug;15(4):327-32. PMID: 22828686.
13. Birru, E.M., Abay, Z., Abdelwuhab, M. et al. Management of headache and associated factors among undergraduate medicine and health science students of University of Gondar, North West Ethiopia. J Headache Pain 17, 56 (2016). https://doi.org/10.1186/s10194-016-0647-

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Original Article

Use Pattern of Smartphone on Young People, Blessings and Risks

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Abstract

Introduction: This paper presented a study on trends in smartphone usages among the young people in Dhaka city. This research provided various purposes of using cell phone and access internet on distinct ways.

Objective: This study was undertaken to compare socio economic characteristics, purposes, behavioral changes, commonly using applications and problems arising from using smartphone.

Methodology: This study was done in some selected area of Dhaka city from February 2019 to February 2020. A cross sectional design was used to collect data from 1000 respondents with the specific age group ranging from 15 to 40 and convenient type of non-probability sampling was used as a sampling technique. Data analysis was done by the computer with the help of SPSS 22 programme.

Result and Discussion: About 79.8% of young people use smartphone for communication, whereas 69.1% for watching videos. Maximum users of smartphone are students. For this excessive use of smartphone they faced some problems such 22% are complaining headache, 27.3% for eye pain and so on.

Conclusion: Results revealed health issues most significantly eye pain, neck pain and headache. Further it showed not only the merits of smartphone but also some demerits of excessive use of it.

Keywords: Smartphone, young people, merits and demerits

Introduction

The smart phone, being a very new invention of humanity, have come to be an inherent part of human`s existence. It permits clients to picture, memories, private data, correspondence, fitness, economic information in single vicinity. According to USAID, mobile devices have following impact on the society" increase of 10% in mobile penetration can raise the annual GDP growth rate by as much as 1.2% in a developing country; 93% of female mobile phone users feel safer with a phone; 85% feel more in independent; 41% use their phones to increase their income and professional opportunities"[1]

Because of convenience, the majority people in developed and developing country countries use mobile phones. the research group estimate that at least 70% of Japanese population and 62% of U.S. inhabitants useds mobile phones in 2005.[2] In Australia, 81% of people used mobile phones in the same year.[3] The author moreover discusses blessings and disadvantages of smart phones utilization via people and brings examples of folks that refuse to use cell phone.

People are also grateful to have smart phone for making their life more easier in this competating world. Smart phone along with the different use of internet that makes the things more easier as well as more helpful. On the other hand, it may be that smart phones are increasingly replacing traditional computers for work tasks, a view spread by some of the popular press.[4]

Now-a-days smart phone is very common by all classes of people, similarly in our study we also found that smart phone is more popular in young people. In our research we took equal varient of male female data. But we found that most of the middle aged people specially students are fond of smart phone. According to PEW research center, the number of smartphone owners comprises 56% of American adults in 2013 and their average daily use of device is about 195 minutes.[5]

However, with maximum amount of facilities, there are some drawbacks such as headache, eye pain or redness, neckpain, finger pain and professional disadvantage like typing difficulties. Research conducted by a group of Korean scientists from Injr University an effect of cell

phone on hamd held device users was "a significant association between the total times spent using a mobile device each day and pain in the right shoulder, and between times spent internet browsing and pain at the base of right thumb."[6]

Although it has some beneficial effects too. As it is convenience, people get too many things so easily through the mobile phone. People can communicate each other in a long distance as well as get health related information and valuable things. People specially the younger generation become addicted by smart phone. In many cases people becoming more and more aggressive. Without mobile phone to be exact smart phones they think life will be stand still.

This special vulnerability of college students to internet addiction has been characterized by: 1) an increasing investment of resources on Internet-related activities; 2) unpleasant feelings when off-line, including anxiety, depression and emptiness; 3) an increasing tolerance to the effects of being on-line and 4) denial of the problematic behaviors.[7] Thus people become more addicted to smart phone same occurance are happened in our society for excessive use of it. prodigious amount of road traffic accidents are happened now a days. For this reason strict traffic rules are taken such as prohibition of use of mobile phone while driving. Some people are obeying the rules in contrast some are denied it. Additional negative concequence of heavier Internet use in college students is impaired academic performence.[8,9] Because of using smart phone while driving, accidental rates are increased. For tackling this issue some citizens are taking some measures.

Smart phone is a blessing for young generation and for society. Now-a-days, it becomes an alarming issue to be discussed however not any work has been done yet. We studies about it and tried to focus on its merits and demerits.

Methodology

The study was a cross-sectional study. Place of the study was some selected area of Dhaka city. Period of the study started from February 2019 to February 2020. For this survey studied population was younger generation between the age of 15 to 40. Convenient type of non-probability sampling was used as a sampling technique and our sampling size was 1000. Structural questionnaire was first prepared, it was pretested. After finalization it was used as research instrument. In this survey face to face interview used as method of data collection. For data analysis aninterpretation of it collected data were checked to exclude any error. Techniques of graphical representation such as pie chart, bar chart & histogram were applied & analyzed using SPSS 22 programme.

Result and Discussion

Table-I: Distribution of the Respondents according to socio-economic characteristics

Sex of the Respondents	Frequency	Percent
Male	500	50.0
Female	500	50.0
Total	**1000**	**100.0**

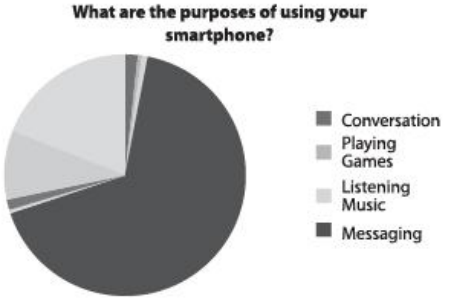
Age of the Respondents	Frequency	Percent
15-20	383	38.3
21-25	322	32.2
26-30	188	18.8
31-35	79	7.9
36-40	28	2.8
Total	**1000**	**100.0**

Education of the Respondents	Frequency	Percent
Illiterate	11	1.1
Primary	8	.8
Secondary	157	15.7
Higher Secondary	320	32.0
Graduate	485	48.5
Post Graduate	19	1.9
Total	**1000**	**100.0**

Occupation of the Respondents	Frequency	Percent
Student	786	78.6
Service Holder	83	8.3
Businessman	44	4.4
Housewife	53	5.3
Garments workers	5	.5
Labour	26	2.6
Jobeless	3	.3
Total	**1000**	**100.0**

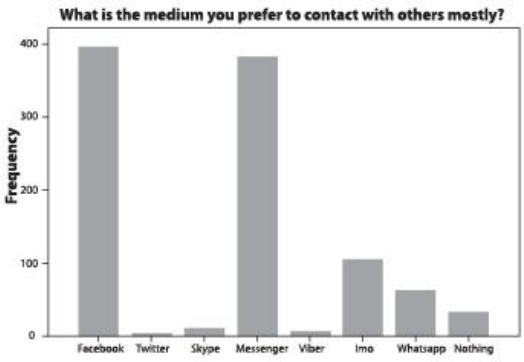
The above table represents socio-economic characteristics of the respondents where half of respondents are male 500(50%) and half of respondents are female 500(50%). So, there are equal users of mobile phone. Among these respondents, more using age of smart phone is 383(38.3%) which ranging from 15-20 years. Among all respondents 11(1.1%) are illiterate and 989(98.9%) are literate. Majority respondents were students (8.3%), 21.1 & were engaged in various types of jobs only 0.3% were jobless during the survey.

Figure-I: Distribution of Respondents according to different types of motives of Respondents



798(79.8%) respondents are using Smart phone only for conversation. In contrast, 202(20.2%) respondents are responding negatively. Other than that, in this survey, respondents have various motives of using Smartphone, such as- 69.1% for watching videos, 53.1% for playing games.55.8% for listening music, 85.3% for online banking, 59.1% for calling Uber/ pathao, 74.6% for ordering food by food panda.

Fiqure-II: Distribution of Respondents according to mostly used apps



Majority of respondents (39.6%) are using facebook mostly to contact with others. all along (38.2%) are using messenger and then about (10.5%) are using Imo, (6.3%) are using whatsapp and (1.1%) are using skype, (0.3%) are using twitter and (0.7%) are using viber to contact with others mostly.

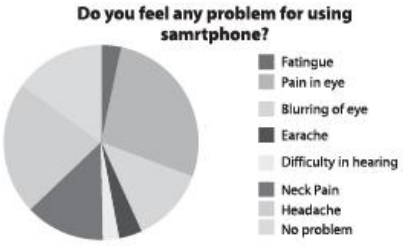
Table-II: Distribution of Respondents according to change of behavior

Changes of sleep pattern of the Respondents	Frequency	Percent
Increased	145	14.5
Decreased	512	51.2
No change	343	34.3
Total	**1000**	**100.0**

Addiction to smart phone of the Respondents	Frequency	Percent
Yes	576	57.6
No	424	42.4
Total	**1000**	**100.0**

Large number of respondents (51.2%) are dealing with sleeping issues that is decreased their sleeping habit but 34.3% having no change of sleep. However, 57.6% respondents are feeling addiction to their phone.

Figure-III: Distribution of respondents according to facing problems while using smartphone



Almost one third (27%) respondents are facing problem of eye pain and 22% respondents are facing problem of headache. Other respondents are feeling difficulties like neck pain (13%), blurring of eye (12%), earache (3.7%), %), fatigue (3.2%), hearing problem (2.6%).15% respondents are not having any problems.

Discussion

The study aim to find out the use pattern of smart phone as well as advantages and disadvantages among the young people. In the study, we collected 1000 data in equal number both male (50%) and female (50%). The studied age group 38.3% and 32.2% were used smart phone in major portion, ranging 15-25years. The age distributions of the respondents were corresponded

with the study" Amanda Lenhart in The Pew Internet and American Life Project also reported that as of 2010, 82% of American adults owned a mobile device; the percentage was found to be even higher for younger adults aged 18-29years."[10] All the 1000 data (100%) 1.1% of illiterate and 98.9% of litterate. From this educated respondents were higher secondary 32% and graduate 48.5% who used smart phone enormously." Others studies agreed that full-time students were more likely to be addicted to the internet, and they were considered to be at high-risk for problems because of free and unlimited access and flexible time schedule."(9) Mostly 78.6% respondents were students and 21.1% were job holders. More than half of the respondents 67% were using smart phone as a purpose of messaging whereas 79.8% for conversation, 69.1% for watching videos, 53.1% for playing games and 78.9% for social networking. In addition, 5.8% were used smartphone for listening music, 59.1% for calling uber/pathao, 74.6% for ordering food by food panda. Moreover, more than 50% (56.4%) purchased on online and a tiny fraction (14.7%) dealt with through online banking. "Mobile consumers in the middle east are also using their smartphone to engage with online and offline advertisements .More than ¾ of the smart phone user in Egypt, have performed a mobile search after seeing an ad such as a TV commercial offline". "Although they also claimed that they used smartphone as making phone call, checking email, checkin website pages, sending text massages ,reading documents, taking pictures, browsing internet, downloading software, listening music taking videos watching movies, watching TV, use as an alarm clock and use as a watch."[11] Kim and co researchers have conducted a study on adopting smartphone as learning technology at Seoul National University, Korea. their study focused on the use of smartphones application for learning among education and engineering students. Their findings revealed that generally each studentshad 80 applicantions on their smartphones. 16% of the applications were used for some kind of learning"[12] "The usage of smartphones among Malaysian students was reported tha university students in malaysia had adopted smartphone as a necessarily for learning institutions, sharing notes between classmates, recording lectures".[13] In this study, Around 90% respondents are using internet in their Smartphone. For communication purpose we used facebook frequently in our daily life (36.1%). Second highest group of people who used YouTube for educational and entertainment purpose around 35%. Rather than these apps, others using apps were Messenger(38.2%), Imo(10.5%), Whats app(6.3%), Skype(1.1%), twitter(o.3%), Viber(0.7%)." Turkish research showed the smartphone users (56.9%) stated that they used cellphones in order to find radiological information and the most used wave pages were Google(93.8%), Radiopaedia. Org (73.3%), Radiologyassisstant.nl (76.7%) and pubmed (64.8%). Social media uses were as follows: None(5.7%), Facebook(79%), Twitter(31.3%), Google + (29%) and YouTube(25%)."[14] Because of excess use of smartphones, some adverse effects were occured both physically and mentally. Almost one third (27%) respondents are facing problem of eye pain and 22% respondents are facing problem of headache. Other respondents are feeling difficulties like neck pain (13%), blurring of eye (12%), earache (3.7%), fatigue (3.2%), hearing problem (2.6%).15% respondents are not having any problems. "The scientists used Disabilities of Arm, Shoulder and Hand (DASH) – in their analysis 27.5% of them were known to be unaffected by hand pain symptoms, 44.5% of them affected by mild hand pain for moderate hand pain, there were 24% of them. Apart from that, there were 3.5% of students were know to be affected by severe hand pain and worst possible pain."[8] In Berolo's research, noted that" mobile or the hand held device user complain of discomfort at least on one area of upper extremities, back or neck. long term usage of the devices leads to tension on the tendons, muscles, and perimetrics tissue, which could result in visual display terminal (VDT) syndrome."[7] At the time of study just above 50% and 70.8% pedestrians were using smartphone while waking and driving. Almost all the people (85%) thought that it was a risk to drive while on phone. In Itabashi, Tokyo, October 2013, a man in his 40s was hit by a commuter train and died at a level crossing where the warnings (flashing red lights and tonal alarm) were on and barrier was closed. It was observed that he was operating a cell phone while walking on the crossing.[15] In a study, the National Highway Traffic Safety Administration (THTSA) estimated the total economic cost of motor vehicle accidents at $277 billion.[7] While survey majority of respondents (57.6%) were addicted to their phones. Some research mentions new addictions. These addictions consist of a number of distinct common components (Silence, mood modification, tolerance, withdrawal, conflict and relapse) with many additional commonalties that may reflect a common etiology of addictive behavior; this suggests that addiction may be a separate syndrome.[15]

Conclusion

Over the past decade, there has been fundamental advancement in smartphone technology, such that smartphones and apps are now gambling an adjunctive position in our everyday life. Taking into consideration the adverse effects, it might consider how exceptional it could make a contribution to embracing and making use of this technology in the future at the individual, corporation and national levels.

References

1. USAID . (2015, MAY 26) . Mobile phones tackling poverty Retrieved from http://www.usaid.gov/infografics/50th/mobile-phones-tackling-poverty
2. Chi J. (2005). Cell phone market development: a Japan-U.S.comparison. (In Japanese) Stanford JapanCenter-http://sjcr.stanford.edu/research/publication/HE/pdf/SHE-2005-001-J.pdf (accessed August 21, 2008).
3. Phillips JG, Butt S, Blaszczynski A. Personality and self-reported use of mobile phones for games. Cyber Psychology& Behavior 2006;9:753-8
4. Nielsen Online. Twitter's tweet smell of success (March 18, 2009) http://t.co/oPO4jGW.
5. Sohn T., Setler V ., Mori K., Kaye J., Horii H., Battestini A., Ballagas R., Paretti C., & Spasojevic M. addressing mobile information overload in the universal inbox through lenses. In Proc. MobileHCI 2010,361- 364.
6. Pew research center : smartphone ownership2013. Retrievedhttp://www.pewinternet.org/2013/06/05/smartphone-ownership-2013.
7. Sophia B., Richard P. Wells, Benjamin C., Amick (2010). musculoskeletal symptoms among mobile hand held devices user and their relationship tp devices use : A preliminary study in a canadian university population .The Ergonomics society , Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20833387
8. Miakoto L. – New York University. [internet] 2017 : the impact of smartphones and mobile devices on human health and life.
9. Chak K., Leung L., 2004. shyness and locus of control as predictors of Internetaddiction and Internet use. Cyber Psychology and Behavior 7:559-570.
10. Lenhart A. (2010) : The Pew Internet and American Life Project .
11. Alfawareh H.M., Jusoh S. Smartphones uses among university students: Najran University case. International Journal of Academic Research Part B; 2014; 6(2),321-326. DOI: 10.7813/2075-4124.2014/6-2/B.48.
12. Kim J.L and Altman J., (2013). Adapting smartphones as Learning Technology in a Korean University. Journal Of Integrated Design and Process Science , 17(1), 5-16.
13. Mohtar N.M. M, Hassan M.A., Hassan M.S., and Osman M.N.,(2013), IOSR Journal Of Humanitiesand Social Science (IOSR-JHSS) , The importance of Smartphone's Usage Among Malaysian Undergraduates, Volume14,Issue3, 12-118,2013.
14. Ozutemiz C., Dicle O., Koremezli N.(2015) European journal of radiology: How Turkish radiology residents access information related to their profession in this social media and the smartphone era. open 2, 129-133
15. Griffiths M. 2000. Does Internet and computer addiction exist? Some case study evidence. CyberPsychology and Behavior 3(2): 211-218.

    Griffiths M. 2005. The biopsychosocial approach to addiction. Psyke and Logos 26(1):9-26.

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Original Article

Histomorphological Pattern of Oral and Oropharyngeal Lesions: A Study in a Tertiary Care Hospital

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Abstract:

Background: Oral diseases are major public health problem owing to their high prevalence and incidence in all regions of the world. Current report says that 11.9 percent people are affected by oral cancer.

Objective: Therefore this study has been undertaken to evaluate the histopathological spectrum of oral and oropharyngeal lesions.

Methods: A prospective, descriptive cross-sectional study was conducted in the Department of Pathology, Dhaka Medical College (DMC).during a 24 months period from January 2016 to December, 2017. Patients of different age group and both sex were selected for this study according to inclusion and exclusion criteria.

Results: Present study comprised of 203 cases oral and oropharyngeal lesions of which 94 (46%) were male, and 109 (54%) were female. The age range was from 3 to 86 years with an average of 47.3 years, the highest number of patients to be in 5th decade. According to site of involvement, buccal mucosa is the commonest site. Among 203 cases, 18 (9%) were non neoplastic inflammatory lesion, 39 cases (19%) were tumour like condition, 33 cases (16%) were benign tumour, 15 cases (8%) were potentially malignant condition and 98 cases (48%) were malignant tumour.

Conclusion: This small study gives an understanding of the national scenario about histomorphological pattern of oral and oropharyngeal lesions.

Key words: Oral lesion, oropharyngeal lesion, non neoplastic inflammatory lesions, tumour like conditions, potentially malignant disorders

Introduction

The oral cavity is the first part of digestive system and there are many types of tissues like bone of mandible and maxilla, epithelial tissue of oral mucosa, minor salivary glands, and odontogenic tissue; it liable for different types of epithelial, mesenchymal and lymphoid neoplason.[1] Oral cavity is prone for a myriad of changes with advancing age as well as a result of the environmental and life style related factors. Oral lesions can occur as a result of infections, local trauma or irritation, systemic diseases and excessive consumption of tobacco, betel nut and alcohol.[2] Benign tumours and tumour like conditions of oral cavity include eosinophilic granuloma, fibroma, granular cell tumour, lipoma, keratoacanthoma, schwannoma, papilloma, neurofibroma, pyogenic granuloma etc. as well as odontogenic tumours. The usual treatment for these conditions is to remove them surgically since they are unlikely to recur.[3] Early detection and monitoring such potentially malignant lesions and conditions allows clinicians to detect and treat early intraepithelial stages of oral carcinoma. Among these, the most common are leukoplakia, erythroplakia, oral submucous fibrosis, lichen planus etc. There is a wide variation in the incidence of oral cancer in different regions around the world. In the developing world, oral cancer is the third most common cancer after stomach and cervical cancer.[4] Therefore this study have been undertaken to evaluate the histopathological spectrum of oropharyngeal lesions.

Material and Methods

A cross-sectional study was conducted in the Department of Pathology, Dhaka Medical College (DMC) during a 24 months period from January 2016

to December, 2017. Patients of different age group and both sex were selected according to inclusion and exclusion criteria. Inclusion criteria was, all Oral and oropharyngeal lesions for which biopsy is advised for histopathological examination. The exclusion criteria were, major salivary gland lesions, patients receiving chemotherapy and radiotherapy. A total of 203 cases who met the enrolment criteria were included in this study. All obtained specimens were immersed in 10% buffered formalin. Routine tissue processing and Haematoxylin and Eosin staining were done on all 203 cases at the department of Pathology, DMC. Statistical analysis of the results was obtained by (SPSS-15). The results were presented in tables, figures, charts and diagrams. Ethical issue was discussed with the patients; regarding the study and informed written consent were obtained. The research protocol was approved by the Institutional Review Board (I.R.B.) of DMC, Dhaka

Result

Present study comprised of 203 cases oral and oropharyngeal lesions of which 94 (46%) were male, and 109 (54%) were female. The male female ratio was 0.86:1. In the present series female showed higher distribution of non neoplastic inflammatory lesions, tumour like conditions and malignant tumours whereas as male had higher number of benign and potentially malignant disorders. [Table-I]

Table-I: Distribution of the patients according to sex and biologic behavior of the oral and oropharyngeal lesions (n=203)

Biological nature of the lesions	Male	Female	Ratio
Benign Tumours	21	12	1.75:1
Malignant Tumours	44	54	0.81:1
Non neoplastic inflammatory lesions	5	13	0.38:1
Potentially malignant disorders	10	5	2:1
Tumour like conditions	14	25	0.56:1
Total n (%)	**94 (46)**	**109 (54)**	**0.86:1**

The age range was from 3 to 86 years with an average of 47.3 years. The cases were divided into eight age-groups according to decades, the highest number of patients to be in 5th decade. [Table-II]

Table-II: Distribution of study population according to age and biological nature of oral and oropharyngeal lesion

	NNIL		TLC		BT		PMD		MT		
Age (in year)	n	%	n	%	n	%	n	%	n	%	Total
< 10	-	0	3	8	1	3	-	-	-	-	4
11 -20	-	0	6	15	13	39	-	-	1	1	20
21 -30	3	17	10	26	7	21	-	-	-	-	20
31- 40	1	6	6	15	-	-	2	13	7	7	16
41- 50	6	33	10	26	3	9	5	33	31	32	55
51 - 60	2	11	2	5	8	24	3	20	30	31	45
61-70	5	28	2	5	1	3	4	27	20	20	32
> 70	1	6	-	-	-	-	1	7	9	9	11
Total	18	100	39	100	33	100	15	100	98	100	203
Mean	**52.66**		**34.05**		**31.87**		**54.80**		**55.56**		

NNIL Non neoplastic inflammatory lesions.
TLC Tumour like conditions.
BT Benign Tumours.
PMD Potentially malignant disorders.
MT Malignant Tumours.

According to site of involvement, in female the malignant tumour was more but the difference is not significant. The malignant tumour in female was more in buccal mucosa, lip, tongue, whereas in male common in buccal mucosa, alveolar mucosa, soft palate. In potentially malignant disorder both male and female shows equal distribution in buccal mucosa. [Table-III]

Table-III: Distribution of oral and oropharyngeal lesions of different biological nature according to sex and site.

Site	MT		BT		PMD		TLC		NNIL		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Buccal mucosa	16	25	4	4	8	4	8	11	1	5	86
Tongue	3	7	4	2	0	1	3	5	3	3	31
Lip	4	9	1	1	1	0	0	7			23
Alveolar mucosa	8	3	1	1			3	1			17
Soft plate	7	0	2	0					1	2	12
Retromolar	2	7			1	0					10
Hard plate	2	1	3	0					0	1	7
Mandible	0	0	3	3			0	1			7
Maxilla	2	0	1	0					0	2	5
Gingiva	0	1	2	0							3
Floor of the mouth	0	1	0	0							1
Total	**44**	**54**	**21**	**12**	**10**	**5**	**14**	**25**	**5**	**13**	**203**

NNIL Non neoplastic inflammatory lesions.
TLC Tumour like conditions
BT Benign Tumours
PMD Potentially malignant disorders
MT Malignant Tumours

Among 203 cases, 18 (9%) were non neoplastic inflammatory lesion, 39 cases (19%) were tumour like condition, 33 cases (16%) were benign tumour, 15 cases (8%) were potentially malignant condition and 98 cases (48%) were malignant tumour.

In non neoplastic inflammatory lesions, vast majority 14 (72%) cases were chronic nonspecific ulcer and inflammatory lesions. [Table-IV]

Table-IV: Frequencies of non neoplastic inflammatory lesions

Non neoplastic inflammatory lesion	Cases	%
Chronic nonspecific ulcer and inflammatory lesions	14	72
Granulomatous inflammation consistence with tuberculosis	2	11
Pemphigus vulgaris	1	06
Pseudolymphoma	1	06
	18	**100%**

Among the tumour like condition, maximum (44.0%) patients had pyogenic granuloma followed by fibroepithelial polyp (33.0%), traumatic fibroma (8.0%), epulis (5.0%), mucocele (5.0%), fibroma (3.0%) and odontogenic keratocyst (3.0%) [Table-V]

Table V: Frequencies of tumour like condition

Tumour like conditions	Cases	%
Epulis	2	05
Fibroepithelial polyp	13	33
Fibroma	1	03
Mucocele	2	05
Odontogenic keratocyst	1	03
Pyogenic granuloma	17	44
Traumatic Fibroma	3	08
	39	**100%**

Maximum benign tumors were capillary haemangioma (52.0%) and the next is ameloblastoma (15%) [Table-VI]

Table-VI: Frequencies of different Benign Tumours

Benign Tumours	Relative Frequency (n)	Percentage (%)
Ameloblastoma, follicular variant	5	15
Capillary haemangioma	17	52
Cavernous haemangioma	1	03
Cementifying fibroma	2	06
Inflammed haemangioma	1	03
Lymphangioma circumscriptum	2	06
Neurofibroma	1	03
Pleomorphic adenoma of salivary gland	3	09
Squamous papilloma	1	03
Total	**33**	**100%**

Leukoplakia with hyperkeratosis comprises maximum frequency (73%) in potentially malignant disorder. [Table-VII]

Table-VII: Distribution of potentially malignant disorder

Potentially malignant disorder		Cases	%
Leukoplakia with	Hyperkeratosis	11	73%
	Mild Dysplasia	2	13%
	Severe Dysplasia	1	7%
Lichen planus		1	7%
Total		**15**	**100%**

Out of a total of 98 malignant tumours, vast majority 90 cases (94%) were invasive squamous cell carcinoma. [Table-VIII]

Table-VIII: Frequencies of malignant tumours

Malignant Tumours	Frequency (n)	Percentage (%)
Dermatofibrosarcoma protruberance	1	01
Mucoepidermoid carcinoma	1	01
Polymorphous low grade adenocarcinoma	1	01
Squamous cell carcinoma –G-I	57	58
Squamous cell carcinoma –G-II	30	31
Squamous cell carcinoma – G-III	5	05
Verrucous type squamous cell carcinoma	3	03
Total	**98**	**100%**

Discussion:

The diagnosis of a variety of lesions that occuring in the oral cavity and oropharyngeal regionsare essential part

for the evaluation of the oral health of any population. Several studies on oral and oropharyngeal lesions have been conducted in India, Pakistan and many other regions of UK and USA, but not much yet have been done in our country. The purpose of the present study was to record and analyse histomorphological types with the sites of tumour origin.

In present study, the affected age ranges from 03 to 86 years with mean age of 48.6 years. Two different studies done by Modi et al. and Kosam et al. also reported the age group as 3-90 and 8-85 years respectively.[5] Then findings were also found similar to our finding.

The gender distribution shows higher number of females (52.9%) cases, though the difference with male was not significent. The finding was similar to Modi et al.[5] The contributing factor for female predominance in our study may be due to social and cultural practice of "pan" chewing habits.

In the present study, the mean age of non neoplastic inflammatory lesions were 52.66 years , tumour like conditions were 34.05, benign tumours were 31.87, potentially malignant disorders were 54.8 andmalignant tumours were 56.3 years. Among the malignant category, no case was found below 18 years of age. Frequency of malignancy was found high in the following age groups: 51-60(33%), 41-50(29%) and 61-70(21%). Higher number of malignancy were observed over 40 years of age and only 7% cases were younger than 41 years. Fewer number of patients were over 60 years can be explained by life expectancy of our population is 72 years (BBS, 2018).

Out of total 203 patients,malignant neoplastic lesions 98(48%) occurring in maximum number of cases. Similar observations were also reported by Modi et al., (53.4%); Gupta et al., (82.5%); Kosam et al., (74%); Bhattacharjee et al., (85%); Khandekar et al., (72%); Dias et al., (93%) and Brandizzi et al., (98%).[5,6,7] Remaining 30(17%) cases were diagnosed as tumour like conditions, 28 (16%) as benign tumours, 15(7%) nonneoplastic inflammatory lesions and potentially malignant disorders in 15 (15%) cases. The predominance of malignant tumours may be due to the fact that many clinically benign tumours, tumour like conditions and non neoplastic lesions were not sent for histological examination. The study place DMC is a tertiary care hospital, which receives mostly referred suspected cases of malignant lesions from various regions of the country. Other than these, in Bangladesh the most common habit of non smoking and smoking tobacco and betel nut with jorda or shada pata may be the predisposing cause of predominance of malignant tumours in the study.

Among the oral and oropharyngeal lesions about 86 (42%) cases were originated from buccal mucosa followed by 31 (15%) from tongue, 23(11%) from lip and 17 (8%) from alveolar mucosa. In our study buccal mucosa was most common site (42%) of lesions which was concordant with the studies of Ahluwalia et al. and Sankaranarayanar et al.[8,9] The buccal mucosa, retromolar trigon, tongue and floor of the mouth were also found the most frequent sites by Rahman in Bangladesh.[10] It was observed in various published literature that oral malignancies were anatomically more frequent in the anterior parts (buccal mucosa, anterior 2/3 of the tongue, alveolus, lips and base of tongue).

Difference in the distribution of the tumours at different sites in male and female may be due to predominance of smoking habit in male and pan with betel nut in female.

Squamous cell carcinoma with varying differentiation ranked first in this study among the histopathological types of malignant tumours. In present study well differentiated squamous cell carcinoma was most common histologic variety (58%). It was in concordance with the studies done by Patel and Pandya, and Ahluwalia et al. The mean age of squamous cell carcinoma was 56.3 years with male to female ratio 1:1.3. In this study verrucous carcinoma ranked in second position. One case of dermatofibrosarcoma protruberance and one case of polymorphous low grade adenocarcinoma were also reported. There was a case of mucoepidermoid carcinoma in our study which was similar to a study done by Mehta et al.[11]

Leukoplakia was the most common among the histopathological type of potentially malignant disorders, which comprises 14 cases out of 15 cases. It comprises hyperkeratosis11 (73%) cases with mild dysplasia 2 (13%) cases and severe dysplasia 1 (7%) case. Only one lichen planus was found in this present study. The other pre malignant lesions such as erythroplakia and oral submucosal fibrosis were not found may be due to short study period and small sample size.

Capillary haemangioma was found to be the most frequent benign tumour arising commonly from buccal mucosa. Next frequency were ameloblastoma and pleomorphic adenoma of minor salivay gland were found to be the second and third common benign tumour.

Pyogenic granuloma ranked first in the present study among the histopathological type of tumour-like condition. This was accordance with finding observed by Gupta et al.[12] Next frequency finding was fibroepithelilal polyp.

Conclusion: This small study gives an understanding of the national scenario about histomorphological pattern of oral and oropharyngeal lesions. The potentially malignant disorders are also not uncommon and many of them may be aggressive or appear malignant.

Reference

1. Shulman, J.D., Beach, M.M. and Rivera- Hidalgo, F. The prevalence of oral mucosal lesions in US adults: data from the Third National Health and Nutrition Examination Survey, 1988–1994. The Journal of the American Dental Association. 2004; 135(9):1279 -1286.
2. Patel, M.M. and Pandya, A.N., Relationship of oral cancer with age, sex, site distribution and habits. Indian journal of pathology & microbiology. 2004; 47(2):195-197.
3. American Cancer Society (homepage on theinternate). Cited 2006 Oct. Available http:// www/cancer.org/docroot/CRI/co ntent/Cri-2-4-IX. Benign tumour (Last accessed on September 2017 September).
4. Mehboob, B., Khan, E. and Khan, M., Awareness about oral cancer among non medical university students of Peshawar. Pakistan Oral & Dental Journal. 2011; 31(2):
5. Modi, D., Laishram, R.S., Sharma, L.D.C. and Debnath, K., Pattern of oral cavity lesions in a tertiary care hospital in Manipur, India.Journal of Medical Society.2013;27(3): 199.
6. Kosam, S. and Kujur, P., Pattern of oral cavity lesion: A retrospective study of 350 cases. Int J Sci Stud. 2016; 4:65-9.
7. Brandizzi, D., Gandolfo, M., Velazco, M.L., Cabrini, P.L., Lanfranchi, H.E., Clinical features and evolution of oral cancer: A study of 274 cases in Buenos Aires, Argentina. Med oral Patol oral Cir Bucal. 2008;13(9): 544-8.
8. Ahluwalia, H., Gupta, S.C., Singh, M., Mishra, V., Singh, P.A. and Walia, D.K., Spectrum of head-neck cancers at Allahabad.Indian Journal of Otolaryngology and Head & Neck Surgery. 2001;53(1):16-21.
9. Sankaranarayanan, R., Ramadas, K., Thomas, G., Muwonge, R., Thara, S., Mathew, B., et al. Effect of screening on oral cancer mortality in Kerala, India: a cluster-randomised controlled trial. The Lancet. 2005;365(9475):1927-1933.
10. Rahman, Q.B., Oral cancer: One of the leading malignancies in Bangladesh. Bangabandhu Sheikh Mujib Medical University Journal. 2016;7(2):75- 76
11. Mehta, N.V., Dave, K.K., Gonsai, R.N., Goswami, H.M., Patel, P.S. and Kadam, T.B., Histopathological study of oral cavity lesions: A study on 100 cases. International Journal of Current Research and Review. 2013; 5 (10):110.
12. Gupta, M., Choudhary, H., Gupta, N. and Gupta, A.,.Histopathological study of neoplastic lesions of oral cavity and oropharynx.International Journal of Research in Medical Sciences. 2016;4(5):1506-1510.

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Original Article

Assessment of Disease Severity in Psoriasis Patients Attending in a Tertiary Care Hospital

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Abstract:

Background: Psoriasis is an immune mediated inflammatory skin disease affecting approximately 2%-3% of the world's population, a worldwide disease, varies in its clinical profile and epidemiology in different regions of the world. Recurrence of the disease is high and severity of psoriasis ranges clinically from mild, moderate and severe. Psoriasis area and severity index (PASI) is a commonly used tool to assess the disease severity of patients.

Objective: The purpose of this study was to assess the disease severity of psoriasis patients in a tertiary care hospital.

Methodology: This cross-sectional study was conducted in the Department of Laboratory Medicine and Department of Dermatology and Venereology, BSMMU. Duration of the study was from March 2019 to February 2020. Diagnosed patient with psoriasis who fulfills the inclusion and exclusion criteria was selected as study population. After taking written consent proper history and clinical examination was done. The parameters included were age at onset of disease, age at first treatment, current age, sex, type of disease and distribution of lesions. After data collection and processing all statistical analysis was done by SPSS software version 26. p value <0.05 was considered as significant.

Result: The mean age was found 35.15±13.63 with the range of 18-70 years. Female are more common than male. Male and female ratio was 1:1.2. Mean age of onset of disease was 32.15±12.28 with the range of 13-70 years. Mean duration of disease was 2.65±2.76. Regarding severity of psoriasis according to PASI score, 45 (56.3%) patients had mild psoriasis (PASI ≤10) and 35 (43.8%) had moderate to severe psoriasis (PASI >10).

Conclusion: Psoriasis is a common dermatological disease accounting 2.9% of all dermatology patients in our country. The disease is more frequent in the third decade of life and has a male predominance in our region. Treatment compliance has been found to be poor. In the current study, we observed mild psoriasis is a predominant pattern assessed by PASI score.

Keywords: Psoriasis, PASI score.

Introduction:

Psoriasis is one of the most common, chronic and recurrent inflammatory skin disease characterized by hyperprolifaration of epidermal cells.[1] World Health Organization (WHO) considered psoriasis as a global health problem.[2] A systematic worldwide review found the prevalence of psoriasis ranged from 0.51 to 11.43percent in adults.[3] In India range varies from 0.44% to 2.8percent.[4] Psoriasis causes embarrassment, lack of self-esteem, anxiety and increased prevalence of depression. 7 percent reported a wish to be dead and 5.5 percent reported active suicidal tendency found in a study of 127 psoriasis patients. Psoriasis decrease quality of life and the age of onset of psoriasis can be at any age. However a bimodal distribution of age of onset has been described. Age 15-20 years is the mean age for the first presentation of the disease with a second peak occurring at 55-60 years.[5] The characteristics of psoriasis

are its long clinical course punctuated by remission and relapse.[6] Family history and environmental risk factors such as diet, obesity, smoking, stress and alcohol consumption have been recognized as the risk factors.[7]

In the pathogenesis of psoriasis, several factors such as genetic, environmental, immune defect and hormonal factors take part.[8] Multiple mechanisms such as hyper-reactivity of T-lymphocytes and dendritic cells, accelerated epidermal turnover, epidermal hyper proliferation, reduced keratinocytes differentiation, over expression of angiogenesis and oxidative stress are involved in its pathogenesis.[9] Psoriasis involves the skin, scalp, nails and seldom the joints.[10] Psoriatic skin lesions are characterized by circumscribed, erythematous, dry, scaly plaques of various sizes. A silvery white lamellar scale is usually covered the lesion. The eruption is mainly symmetrical. About 50% of the patients are suffering from developed nail changes.[11] Psoriasis can lead to psoriatic arthritis (34.7%) that causes joint deformity and disability.[12]

Psoriasis is a clinical diagnosis.[10] There are no biomarkers to diagnose the disease and to assess its severity. For this, clinical assessment tools are used to measure the disease severity. To assess the severity of psoriasis a wide variety of scoring system has been proposed. In research, Psoriasis Area and Severity Index (PASI) is the most commonly used clinical scoring system. Others tools are physician global assessment (PGA), body surface area (BSA). PASI was suggested as a more reliable assessment instrument than the PGA as PASI demonstrated substantial inter-rater reliability and moderate for PGA. PASI area score demonstrated the highest intra-rater reliability. BSA is not recommended for assessment of the clinical severity of psoriasis as BSA demonstrated high inter-rater variability.[13] PASI is recommended as the current gold standard for assessing the severity of psoriasis and for clinical trials.[10, 14] PASI is accepted by approving agencies such as European Medicines Agency.[15] Erythema, induration, scaling are the basic characteristics for assessing the severity of psoriasis in PASI scoring system. The score varies from 0 (not affected) to 72 (severely affected).[10] The PASI score interpretation was as follows: score less than or equal to 10 is classified as mild disease, whilst a score of greater than 10 is considered to be moderate to severe[15] PASI is solely depends on clinical features. So, the aim of this study was to assess the severity of psoriasis by PASI score in a tertiary care hospital.

Methodology

This cross-sectional study was conducted in the Department of Laboratory Medicine and Department of Dermatology and Venereology, BSMMU. Duration of the study was from March 2019 to February 2020. Inclusion criteria for patients' selection were 18 years and above, patients with both sexes and clinically Diagnosed cases of psoriasis. Exclusion criteria were Gout, psoriatic arthritis, renal disorder and diabetes mellitus. Here clinical variable was PASI score. Severity of psoriasis were done by PASI score. Patient with psoriasis who fulfills the inclusion and exclusion criteria was selected as study population. After taking informed written consent, proper history and clinical examination was done. The parameters included were age at onset of disease, age at first treatment, current age, sex, type of disease and distribution of lesions. After data collection and processing, all statistical analysis was done by SPSS software version 26. p value <0.05 was considered as significant.

Results

In this study the maximum number of patients 38 (47.5%) were in the age group of 18-30 years followed by 18 (22.5%) in the age group 31-40 years. The mean age of the study group was 35.15 ±13.63 years, minimum age 18 and maximum 70 years (Table-I). Maximum patients were female 43 (53.8%) and rest 37 (46.2%) were male out of 80 psoriasis in this study. Male and female ratio was 1: 1.2 (Figure-1).

Table-I: Age distribution of the study patients (n=80)

Age group (years)	Frequency	Percentage (%)	Mean±SD
18-30	38	47.5	35.15±13.63
31-40	18	22.5	
41-50	16	20.0	
51-60	5	6.3	
61-70	3	3.8	
Total	**80**	**100.0**	

Figure-1: Pie diagram showing the sex distribution of the study patients (n=80)

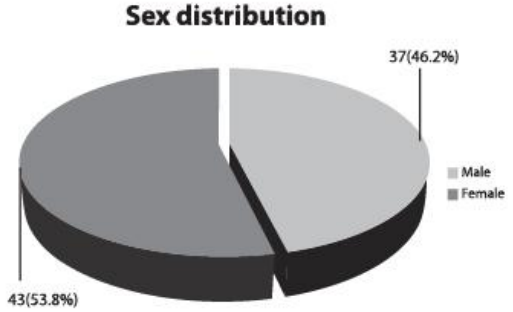

Table-II: Distribution of the study patients by age of onset (n=80) Age

Age of onset (years)	Frequency	Percentage (%)	Mean±SD
13-20	18	22.5	32.15±12.28
21-30	21	26.3	
31-40	22	27.5	
41-50	13	16.3	
51-60	5	6.3	
61-70	1	1.3	
Total	**80**	**100.0**	

Table-III: Distribution of the study patients by duration of disease (n=80)

Duration of disease (years)	Frequency	Percentage (%)	Mean±SD
0-5	70	87.5	2.65±2.76
6-10	8	10.0	
11-15	2	2.5	
Total	80	100.0	

The distribution of the study patients by age of onset in this study found that maximum 22 (27.5%) patients had age of onset was in between 31-40 years followed by 21 (26.3%) had age of onset between 21-30 years, 18 (22.5%) patients had age of onset between 13-20, 13 (16.3%) patients had aged in between 41-50 years, 5 (6.3%) had age in between 51-60 years and 1(1.3%) patients had age of onset was in between 61-70 years. The mean±SD value was 32.15±12.28 (Table-II). The distribution of study patients by duration of disease found in this study that maximum 70(87.5%) had psoriasis for 0-5 years followed by 8 (10.0%) had for 6-10 years and 2(2.5%) had 11-15 years. Maximum number of patients had psoriasis for 0-5 years. The mean±SD value was 2.65±2.76 (Table-III).

Table-IV: Distribution of the study patients by severity of psoriasis (n=80)

Severity of psoriasis	Frequency	Percentage (%)	PASI Mean±SD
Mild disease (PASI ≤10)	45	56.3	5.99±1.71
Moderate to severe disease (PASI >10)	35	43.8	12.61±2.74
Total	**80**	**100.0**	

In this study, the distribution of the study patients by severity of psoriasis according to PASI score found that maximum 45 (56.3%) patients had mild psoriasis (PASI ≤ 10) and 35 (43.8%) had moderate to severe psoriasis (PASI > 10). Mean±SD value of PASI score in mild psoriasis was 5.99 ±1.71 and in moderate to severe psoriasis was 12.61±2.74 (Table-IV)

Discussion

Psoriasis is a chronic systemic disease affecting approximately 2%-3% of the world's population. It is gold standard to measure severity of psoriasis with PASI score and with that aim this study was undertaken. In our study, the mean±SD age was found 35.15±13.63 years with the range of 18-70 years. In one study it was reported that mean±SD age of psoriasis patients was 7.66±14.63, which was nearly consistent with our study.[16] The highest number of patients 38 (47.5%) was of 18-30 years.[17] In other study reported that mean±SD age was 39.82±15.16 and which was nearly compatible with this study. The mean±SD age of study patients was 43.26±10.62, which was some extent higher than this study.[18] The median age was in mild psoriasis 32.5 years (range 15-65 years), in moderate psoriasis was 36 years (range 20-80 years) and in severe psoriasis 31years (range 20-80 years) which was closely resembled to the present study.[19] In another study reported mean±SD age of patients was 35±15.5 which was agreeing with our study.[20]

In this study, it was found that, out of 80 patients, 43 (53.8%) patients were female and 37 (46.2%) patients were male with male and female ratio of 1:1.2. In study it was found that 41(68.33%) patients were female and 19 (31.67%) were male among 60 patients.[19] This study showed that female was predominant than male which was accordant with our study. It was found that among 38 patients with psoriasis 18 were female and 20 were male.[21] On the other hand, globally this ratio is considered as 1:1 (WHO, 2016).[2] Various factors can be considered reasonable for this difference in the sex ratio in this current study. Social aspects such as, the way men and women perceive their health, their different social roles and levels of tolerability could be considered as some of the important determinants for accessibility to heath care facilities.

In our study mean±SD age of onset of disease was 32.15±12.28 and the commonest age group was 31-40 years of age with the range of 13-70 and mean±SD duration of disease was 2.65±2.76. In a study of Raghvan et al.[6] commonest age group of patients present with psoriasis was 41-50 years and the mean duration of disease was range between 3-8 years which was nearly consistent with our study. In a study of mean±SD age of onset of disease was found 37.85±9.13 which was nearly consistent with our study.[22]

According to PASI score in this study, maximum 45 (56.3%) patients were found in mild psoriasis and 35

(43.8%) had moderate to severe psoriasis. In a study of Kim et al.[17] found 70.45% patients had mild psoriasis and 29.55% had moderate to severe psoriasis patients among 176 psoriasis patients which was some extent nearly higher than our study. This may be due to in Bangladesh all medical cost is paid by patients himself / herself. So, when the symptoms worsen people came to the hospital. In contrast in developed countries medical expenditure is some extent free of cost. So, when a symptom is mild, patients go for medical advices.

Conclusion

Psoriasis is a serious non-communicable disease considered as a global problem now a day. The disease severity of psoriasis is measured by PASI which is done by clinical feature and vary from physician to physician. Therefore, subsequent evaluation by same physician is necessary. In the present study we found that mild disease severity of psoriasis is the predominant form of psoriasis. So, for the assessment of disease severity of psoriasis, PASI score can be used as important tools. Therefore, it will be greatly beneficial for assessing disease severity of psoriasis in our country.

Limitations of the study

The sample was taken purposively, so, there may be a chance of bias which can influence the result. The study population was selected from one tertiary care level hospital in Dhaka city; therefore, sample may not be representative of the selected population of the country.

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References

1. Hashemi, M., Mehrabifar, H., Daliri, M and Ghavami S., 2009. Adenosine deaminase activity, trypsin inhibitory capacity and total antioxidant capacity in psoriasis. European Academy of Dermatology and Venereology, 24, pp 329-334.
2. World Health Organization, 2016. Global report on psoriasis.
3. Michalek, I.M., Loring, B. and John, S.M., 2017. A systematic review of worldwide epidemiology of psoriasis. Journal of the European Academy of Dermatology and Venereology, 31(2), pp.205-212.
4. Nasar, M.K. and Yasmin, 2019. A literary review on daus sadaf (psoriasis)- a social stigma. J cancer sci treatment, 1(2), pp.31-34. 81
5. Langley, R.G. B., Krueger, G.G. and Griffiths, C.E.M., 2013. Psoriasis: epidemiology, clinical features, and quality of life, Ann Rheum Dis, 64 (Suppl II), pp. ii18-ii23
6. Raghavan, V., Radha, R.K.N., Rao, R.K. and Kuberan, A., 2017. A correlative study between platelet count, mean platelet volume and red cell distribution width with the disease severity index in psoriasis patients. Journal of clinical and diagnostic research: JCDR, 11(9), pp.EC13-EC16.
7. Huerta, C., Rivero, E. and Rodríguez, L.A.G., 2007. Incidence and risk factors for psoriasis in the general population. Archives of dermatology, 143(12), pp.1559-1565.
8. Ogawa, E., Sato, Y., Minagawa, A. and Okuyama, r., 2017. Pathogenesis of psoriasis and development of treatment. The journal of Dermatology, pp.1-9.
9. Nicolae, I., Ene, C.D., Mitran, C.I., Mitran, M.I., Sarbu, M.I., Matei, C., Ene, C. and Georgescu, S.R., 2019. Correlations between related-purine derivatives and renal disorders in patients with psoriasis vulgaris. Experimental and therapeutic medicine, 17(2), pp.1012-1019.
10. Jain, K., Krishna, A. and Rathore, S. B., 2017. Assessing disease severity by hsCRP as a biochemical marker for psoriasis. International Journal of Research in Dermatology, 3(4), pp.501-505.
11. Griffiths, C. E. and Barker, J. N., 2007. Pathogenesis and clinical features of psoriasis. Lancet, 370(9583), pp.263-271.
12. Pariser, D., Schenkel, B., Carter, C., Farahi, K., Brown, T.M., Ellis, C.N. and Psoriasis Patient Interview Study Group., 2016. A multicenter, non-interventional study to evaluate patient-reported experiences of living with psoriasis. Journal of Dermatological Treatment, 27(1), pp. 19-26.
13. Bożek, A. and Reich, A., 2017. The reliability of three psoriasis assessment tools: psoriasis area and severity index, body surface area and physician global assessment. Adv Clin Exp Med, 26(5), pp.851-856.
14. Walsh, J.A., Arledge, T., Nurminen, T., Peterson, L. and Stark, J., 2018. PGA× BSA: A Measure of Psoriasis Severity Tested in Patients with Active Psoriatic Arthritis and Treated with Certolizumab Pegol. The Journal of rheumatology, 45(7), pp.922-928. 84

15. Mrowietz, U., Kragballe, K., Nast, A., Reich,K., 2011. Stategies for improving the quality of care in psoriasis with the use of treatment goals- a report on implementation meeting. Journal European Academy Dermatology & Venereology, 25(3), pp. 1-13.

16. Kılıç, S., Reşorlu, H., Işik, S., Oymak, S., Akbal, A., Hız, M.M. and Öğretmen, Z., 2017. Association between mean platelet volume and disease severity in patients with psoriasis and psoriatic arthritis. Advances in Dermatology and Allergology/Post□py Dermatologii i Alergologii, 34(2), pp.126-130.

17. Kim, D., Lee, J., Kim, S and Lee, M., 2015. Mean Platelet Volume is elevated in patients with psoriasis with psoriasis vulgaris. Yonsei Medical Journal, 56(3), pp.712-718.

18. Khan A.S., Agrawal, S., Baral, N. and Lamsal, M., 2018. Evaluation of ADA activity as a potential marker of disease severity in psoriasis patients. Psoriasis: Targets and Therapy, 8, pp.59-63. 79

19. Moustafa, Y.M., Elsaied, M.A., Abd-Elaaty, E.M. and Elsayed, R.A., 2019. Evaluation of serum adenosine deaminase and inflammatory markers in psoriatic patients. Indian journal of dermatology, 64(3), p.207.

20. Arican, O., Aral, M., Sasmaz, S. and Ciragil, P., 2005. Serum levels of TNF-α, IFN-γ, IL-6, IL-8, IL-12, IL-17, and IL-18 in patients with active psoriasis and correlation with disease severity. Mediators of inflammation, 2005(5), pp.273-279.

21. Erbagci, Z., Erbagci, A.B., Koyluoglu, O. and Tuncel, A.A., 2006. Serum adenosine deaminase activity in monitoring disease activity and response to therapy in severe psoriasis. Acta Medica-Hradec Kralove-, 49(2), p.101.

22. Mahrous, E.A.M., 2017. The relationship between platelet volume and risk of atherosclerosis in patients with psoriasis. Egyptian Journal of Dermatology and Venereology, 38, pp. 29-36.

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Review Article

Threatened Abortion and its Burden

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Abstract:

Threatened Abortion is the most common cause of first trimester bleeding and is the most common reason for general practitioner's emergency gynaecology referral. First-trimester bleeding may indicate an underlying placental dysfunction. This may manifest later in pregnancy causing adverse outcome affecting both mother and the baby and most commonly associated with abortion, pre-maturity, low birth weight, respiratory distress syndrome and intra uterine growth retardation. Vaginal bleeding in early pregnancy is a common condition that adds stress and anxiety to pregnant women. Therefore, obstetricians are regularly dealing with such cases whether it is in an out-patient clinic or emergency setting. So pregnancies complicated by threatened abortion constitute a risk group requiring careful obstetric and perinatal supervision and follow-up.

Key word: Threatened Abortion

Introduction

Threatened abortion is a clinical terminology that applies to women who are under 20 weeks gestation having vaginal spotting or bleeding, a closed cervical os and potentially mild uterine contraction with ensuing ultrasound scan confirming fetal cardiovascular movement.[1,2] Bleeding per vaginum in the first trimester is one of the most common obstetric problems. It is also one of the commonest causes for the majority of the emergency admissions to the obstetrics department.[3] Most of these pregnancies continue to term with or without treatment.[4] First-trimester vaginal bleeding is an independent risk factor for adverse obstetric outcome that is directly proportional to the amount of bleeding.[5] The scientific literature regarding threatened abortion is relatively limited on the subject of outcomes and viability at term. Small number of patients and significantly biased data collection has limited studies that were complicated by threatened abortion.[6] Many studies suggest that first-trimester vaginal bleeding is associated with a worse outcome.[7,8] However, there have been few studies that evaluated outcomes other than viability at term, after the documentation of a living embryo. In general, the incidence of spontaneous abortion after first-trimester bleeding is quoted to be 50% before sonographic evaluation for fetal viability.[9] Most of the time bleeding is small amount, but sometimes it may be more serious and severe. About 50% of cases of threatened abortion terminate in complete abortion and lost of pregnancy. If pregnancy continues, the sub optimal events have been reported more; like preterm delivery and preeclampsia.[10] If a viable fetus is noted at ultrasound examination after first- trimester vaginal bleeding, 95% to 98% of such pregnancies will still continue beyond 20 weeks of gestation.[11]

Incidence

True incidence of threatened abortion is difficult to estimate because many patients are treated in an outpatient setting where events are not tracked and national surveillance data on threatened abortion have not been updated. Threatened abortion is a common complication affecting about 20% of pregnancies.[12,13] Vaginal bleeding occurs in 12%-40% of confirmed pregnancies during the first 20 weeks of gestation as reported by many authors.[14,15] Various authors have reported a significant association between early bleeding in pregnancy and poor or sub-optimal pregnancy outcome.[16,17]

Etiology and Risk factors

The risk factors for the progression of a normal pregnancy to a complete abortion in the first trimester are fairly well established. Common risk factors for threatened abortion include increased maternal age, high pre-pregnancy body mass index and low serum progesterone levels.[18,19] In multigravida, low lying placenta, placenta previa, placental abruption had increased risk of threatened abortion.[20] An increased risk for low lying placenta among patients with threatened abortion.[21] Placental abruption was seen in mothers with threatened abortion and 4.1% developed intra uterine death.[22] There is increased risk of pre-eclampsia, preterm delivery, placental abruption

and cesarean delivery for patients who reported light bleeding.[23] It was found significant feffect on risk of abortion; those women with early vaginal bleeding who had a history of previous abortion had more risk to miscarry in comparison to women who did not have any previous miscarriages.[24] Maternal medical illness, especially endocrinopathies, which are confounding factors for adverse pregnancy outcome in general, can contribute to abortion. It was also found that increased rate of foetal loss in women with high serum thyroid antibody concentration.[25] A pregnant women with a medical history of epilepsy or thyroid disease and had early vaginal bleeding will have more risk of abortion than those with no medical illnesses.[24]

More recently, lifestyle factors such as caffeine intake, exercise, stress, exposure to cigarette smoke and alcohol consumption have also been implicated as risk factors.[26-30] Some studies have documented the proportion of women who had experienced a threatened abortion who subsequently go on to experience a complete abortion.[31,32]

Surprisingly, however, little is known about the risk factors for the progression of a threatened abortion to a complete abortion. It is through the understanding of such risk factors that obstetricians would be better able to manage and advice women who are at high risk. Although the mechanisms of threatened abortion are not fully understood, it might be related to failure to establish the maternal and fetal connection or communication during the pregnancy. Among these, placental implantation is a critical step for successful pregnancy.[33] Approximately, half of abortion are due to chromosomal abnormalities in the fetus. Maternal factors can also play a role in threatened abortion. Maternal infection can increase the chances of threatened abortion. Chronic illness such as diabetes and thyroid disease can also increase the risk. Extremes of weight are associated with increased abortion risks. Maternal life style choices including alcohol, tobacco, and illicit drug use have also been linked to threatened abortions.[34-37]

Among these maternal risk factors, maternal age is the most important predictor in the risk of abortion; and in addition, other maternal factors include prior obstetrical history, thrombophilia, antiphospholipid antibody syndrome, extremes of maternal weight, hypertension, cigarette smoking, large amounts of caffeine use, trauma, and malnutrition.[38,39]

The abortion rate was higher in the age group from 33 to 37 years old in comparison to the younger age groups.[24] Advancing maternal age is an important risk factor for abortion in general, primarily due to decline in oocyte quality. Changes in uterine and hormonal function may also play a role and also found increased risk of threatened abortion with increasing gravida. Possible reasons for this association include 1) reproductive compensation behavior (i.e. A behavior pattern in which couples make repetitive attempts to bear children after abortion and 2) short inter-pregnancy intervals in multigravida women.

Imbalance of essential trace elements that is lower levels of zinc (Zn), ferrum (Fe), magnesium (Mg), and manganese and an increase of toxic heavy metals like significantly higher levels of copper (Cu), cadmium (Cd), and lead might be an important diagnostic and prognostic factor for threatened abortion.[40] They found that malnutrition (deficiency of essential trace elements) and environmental toxicity (heavy metal intoxication) will disrupt physiological function, such as proper activity of biochemical and enzymatic reactions, and cell division and growth in humans during pregnancy. Since trace elements and toxic heavy metals directly involve many biochemical processes in development, growth, and homeostasis, it is reasonable to believe that any imbalance of these macro or microelements might disrupt the success of the implantation and further function.

Signs and Symptoms

A threatened abortion occurs before 20 weeks of gestation, presents with vaginal bleeding. The cervical os is closed on pelvic examination. The patient may also experience abdominal cramping and pain. Vaginal bleeding usually begins first followed by cramping abdominal pain hours to days later. Bleeding is the most predictive risk factor for pregnancy loss. More than half of threatened abortions will abort. The risk of spontaneous abortion, in a patient with a threatened abortion, is less if fetal cardiac activity is present.[41] Women with a threatened abortion but with no nausea, were found to be at a higher risk for a complete abortion than those who had experienced nausea. Nausea in the first trimester of pregnancy is associated with increased levels of beta human chorionic gonadotropin,[42] and higher levels of beta human chorionic gonadotropin have been shown to be associated with a decreased risk of abortion in normal pregnancy.[43]

Evaluation

The diagnosis of threatened abortion is frequently made in clinical practice as a result of taking a history of vaginal spotting and the finding of a closed cervix at subsequent vaginal examination. A definitive diagnosis of threatened abortion should be made following ultrasonographic examination confirming the presence of fetal heart activity in an intrauterine pregnancy.[44] CA-125 (cancer antigen 125, carcinoma antigen 125, or carbohydrate antigen 125) is cell surface high molecular weight glycoprotein present in tissue derived from embryonic coelomic. CA-125 can be used as a predictive marker for subsequent outcome of pregnancy.[45] During pregnancy, disruption of the epithelial basement membrane of the fetal membrane or disruption of the decidua could theoretically lead to rise in maternal CA 125 level, thus can be used as a predictor of subsequent spontaneous abortion. Its levels are increased in early pregnancy and immediately after birth,[46] thus implicating the disintegration of the maternal decidua i.e. blastocyst implantation and placental separation as a possible source of the tumor marker elevation.[47] Therefore the elevated serum CA 125 levels in women with threatened abortion implicate poor outcome in future. This test is rather sensitive in determining the progression to the pregnancy loss.

A beta-hCG level of 1500 IU/mL to 2000 IU/mL is associated with a gestational sac on ultrasound. A beta-hCG doubles in 48 hours in 85% of intrauterine pregnancies. Beta-hCG is usually detectable the first nine to eleven days following ovulation and reaches 200 IU/mL at the expected time of menses. Rh factor need to be determines if RhoGam should be administered to prevent hemolytic disease of the newborn in this pregnancy and subsequent pregnancies. A hemoglobin and hematocrit are helpful in monitoring the degree of bleeding. A urine analysis can also be obtained. Urinary tract infection (UTI) has been associated with abortions. During the pelvic exam, suction may be needed to remove blood and products of conception to allow for better visualization of the cervix. Ringed forceps can also be used to remove tissue that may be protruding from the cervical os. All tissue must be examined to determine if it is clot or products of conception.[41]

Maternal and fetal outcome

Fetal outcome

The fetal outcome of the pregnancy was categorized as

- Termination of pregnancy before 20 weeks
  - (a) Spontaneous or induced termination,
  - (b) Congenital malformations which was terminated before 20 weeks,
- Continuation of pregnancy beyond 20 weeks
  - (a) Preterm delivery,
  - (b) Low birth weight (<2500kg),
  - (c) Intra uterine growth retardation,
  - (d) Perinatal death,
  - (e) NICU admission and
  - (f) Full term live birth with healthy fetus.

The maternal outcome (only for those patients in which pregnancy continued beyond 20 weeks) are[3]

- (a) Pregnancy induced hypertension,
- (b) Anemia (pallor and Hb<10gm% at the time of inclusion in the study),
- (c) Amniotic membrane rupture <37 weeks of gestation,
- (d) Placental abruption,
- (e) Placenta previa,
- (f) Post-partum hemorrhage,
- (g) No complications.

Threatened abortion was associated with an increased incidence of adverse pregnancy outcomes and most commonly associated with abortion, pre-maturity, low birth weight, respiratory distress syndrome and intra uterine growth retardation.[20] Williams et al[48] reported that patients with bleeding had double the risk of preterm delivery compared with patients with no bleeding. Mustafa et al[16] found 23.4% babies were born with low birth weight with threatened abortion. Haddow et al[49] reported an increased risk for low birth in pregnancies that were complicated by vaginal bleeding.

Since preterm delivery was associated with threatened abortion, identifying women who was at high risk for preterm labour was important. Perera et al[22] found 8.2% intra uterine growth retardation in their study.

Home care

To improve the chance of keeping pregnancy, following measures can be given:

1) Bed rest has not been shown to improve outcomes but commonly is recommended.

2) Physical activity precautions and abstinence from sexual intercourse are also commonly advised.
3) Use sanitary napkins instead of tampons.
4) Don't douche.
5) Don't take aspirin, ibuprofen or naproxen.
6) Don't have alcoholic or caffeinated beverages or smoke.
7) Return hospital if they experience increased pain or fever.

When to seek medical advice

1) Vaginal bleeding or pain that lasts for more than 3 days.
2) Heavy bleeding is defined as more than one pad soaking per hour for six hours.
3) Fever or 100.40F (38 0C) or higher or as directed by your healthcare provider.
4) Pain in your lower belly (abdomen) that gets worse.
5) Weakness or dizziness.
6) Rapid heart rate.
7) Difficulty breathing.

Treatment

Patient with threatened abortion should be managed expectantly until their symptoms resolve. Patient should be monitored for progression to an inevitable, incomplete, or complete abortion. Analgesia will help relieve pain form cramping. Treatment with progestogens (Dydrogesterone) is the most promising treatment for threatened abortion and is supported by good number of meta-analysis studies, which also showed its significant effect on improving pregnancy outcome and baby birth weight.[50]

Progesteron modulates the immune response of the mother to prevent rejection of the embryo, and it enhances uterine quiescence and suppresses uterine contrations.[51] Many abortions are caused by genetic abnormalities in the conceptus, and in this case, it is unlikely that progestogen supplementation could prevent it.[52] Women with threatened abortion (Thrombophillia, anti-phospholipid syndrome), continuation of low-molecular weight heparin indicated to prevent recurrent pregnancy loss was negatively associated with live birth rates. All patients with vaginal bleeding who are Rh-negative should be treated with RhoGam. Because the total fetal blood volume in less than 4.2ml at 12 weeks, the likelihood of fetal blood mixture is small in first trimester. A smaller RhoGam dose can be considered in the first trimester. A dose of 50 micrograms to 150 micrograms has been recommended. RhoGam should ideally be administered before discharge. However, it can also be administered by the patient's obstetrician within 72 hours if the vaginal bleeding has been present for several days or weeks.[53]

Prevention

There is no clear way to prevent threatened abortion, to increase chance of a healthy pregnancy, everyone should have: 1) Regular prenatal care. 2) Avoid alcohol, cigarettes and drugs. 3) Limit caffeine intake. 4) Control any long-term conditions that may have, such as diabetes or a thyroid disorder. 5) Consult with doctor before taking any medication. 6) Avoid contact with toxins.[54,55]

Conclusion

Uterine bleeding during pregnancy represents a definite threat to the developing embryo and is often followed shortly by termination of the gestation.

References

1. Gidwani C, Meena BS, Meena ML. Role of serum CA125 levels in predicting the outcome of threatened abortion. International journal of clinical obstetrics and gynaecology 2019; 3:14-18.
2. Dongol A, Mool S, Tiwari P. Outcome of pregnancy complicated by threatened abortion. Katmandu University Medical Journal 2011; 9: 41-44.
3. Patel S. Pregnancy outcome of patients complicated by threatened abortion. IOSR-JDMS 2016; 15: 18-22.
4. Dongol A, Mool S, Tiwari P. Out come of pregnancy complicated by threatened abortion. Kathmandu university medical journal 2011; 9: 41-44.
5. Weiss JL, Malone FD, Vidaver J. Threatened abortion: a risk factor for poor pregnancy outcome, a population-based screening study 2004; 190: 745-50.
6. Hertz JB, Heisterberg L. The out come of pregnancy after threatened abortion. Acta Obstet Gynecol Scand 1985; 64:151-56.
7. Chung TK, Sahota DS, Lau TK . Threatened abortion: prediction of viability based on sings and symptoms. Aust NZJ Obstet Gynaecol 1999; 39:443-47.
8. Farrell T, Owen P. The significance of extrachorionic membrane separation in threatened miscarriage. Br J Obstet Gynaecol 1996; 103:926-28.
9. Chung TK, Sahota DS, Lau TK. Threatened abortion: prediction of viability based on sings and symptoms. Aust NZJ Obstet Gynaecol 1999; 39:443-47.

10. Elaziz FAA, Taha WS, Mohamed IA. Comparison between the pregnancy outcome in women both with and without threatened abortion 2019:07; 571-78.

11. Uerpairojki TB, Charoenvidhya D, Tannirandom Y. Sonographic findings in clinically diagnosed threatened abortion. J Med Assoc Thai 2001; 84: 661-65.

12. Tanha FD, Shariat M, Kaveh M. Threatened abortion: A risk factor for poor pregnancy outcome. acta medical iranica 2008; 46: 314-20.

13. Lee HJ, Park TC, Kim JH. The influence of oral dydrogesterone and vaginal progesterone on threatened abortion: A systematic review and meta –analysis. Biomed Res Int 2017; 3616875.

14. Uzelac SP, Garmel HS. Early pregnancy risks. In: Decherney HA, Nathan L, Goodwin MT, Neri L, editors. Current Diagnosis and Treatment, Obstetrics and Gynaecology. 10th ed., Vol. 14. New York: McGraw Hill Medical Publishing Division 2007; 259 73.

15. Velez Edwards DR, Baird DD, Hasan R. First trimester bleeding characteristics associated with increased risk of preterm birth: Data from a prospective pregnancy cohort. Oxf J Med Health Hum Reprod 2012; 27:54 60.

16. Mustafa G, Khurshid R, Mushtaq. Pregnancy outcome of patients complicated by threatened abortion. Internet J Gynecol Obstet 2009; 14:6932.

17. Ahmed SR, El Sammani Mel K, Al Sheeha MA. Pregnancy outcome in women with threatened miscarriage: A year study. Mater Sociomed 2012; 24:26 8.

18. Maconochie N, Doyle P, Prior S. Risk factors for first trimester-miscarriage- results from a UK-population-based case–control study. BJOG 2007; 114: 170-86.

19. Sugiyama T, Watanabe H, Takimoto H. Management of obesity in pregnancy. Curr Womens Health Rev 2009; 5:220-4.

20. Khatun MHA, Arzu J, Haider ZA. Outcome of pregnancy Complicated by Threatened abortion in dhaka national medical college and hospital. J. Dhaka National. Med. Coll. Hosp. 2014; 20:57-60.

21. Das AG, Gopalan S, Dhaliwal LK. Fetal growth and perinatal outcomes of pregnancies continuing after threatened abortion. Aust NZ J Obstet Gynaecol 1996; 36:135-39.

22. Perera BH, De Silva AP, Perera H. A case control study on the effect of threatened miscarriage on selected pregnancy outcomes. Sri Lanka Journal of Obstetrics and Gynecology 2009; 31: 34-38.

23. Weiss JL, Malone FD, Vidaver J. Threatened abortion: A risk factor for poor pregnancy outcome, a population-based screening study. Am J Obstet Gynecol 2004; 190:745-50.

24. Amro B, Almahdi S. Out come of pregnancy among women with threatened miscarriage in latif hospital in dubai. HMJ 2019; 12:72-76.

25. Anselmo J, Cao D, Karrison T. Fetal loss associated with excess thyroid hormone exposure. JAMA 2004; 292:6915.

26. Weng X, Odouli R, Li DK. Maternal caffeine consumption during pregnancy and the risk of miscarriage: a prospective cohort study. Am J Obstet Gynecol 2008; 198: 279.el-8.

27. Madsen M, Jorgensen T, Jensen ML. Leisure time physical exercise during pregnancy and the risk of miscarriage: a study within the Danish National Birth Cohort. BGOG 2007; 114:1419-26.

28. Arck PC, Rose M, Hertwing K. Stress and immune mediators in miscarriage. Hum Reprod 2001; 16: 1505-11.

29. Georgel L, Granath F, Johansson AL. Environmental tobacco smoke and risk of spontaneous abortion. Epidemiology 2006; 17; 500-05.

30. Maconochie N, Doyle P, Prior S. Risk factors for first trimester-miscarriage- results from a UK-population-based case–control study. BJOG 2007; 114: 170-86.

31. Davari-Tanha F, Shariat M, Kaven M. Threatened abortion: A risk factor for poor pregnancy outcome. Acta Med Iran 2008; 46: 314-20.

32. Johns J, Jauniaux E. Threatened miscarriage as a predictor of obstetric outcome. Obstet Gynecol 2006; 107: 845-50.

33. Ling LW, Ching YC, Hui P. Risk to increase threatened abortion: deficiency of some essential trace elements and exposure of toxic heavy metals. Journal of the Chinese Medical Association 2019; 82: 607-08.

34. Goodarzi P, Falahzadeh K, Aghayan H. Therapeutic abortion and ectopic pregnancy: alternative sources for fetal stem cell research and therapy in Iran as an Islamic country. Cell Tissue Bank 2019; 20:11-24.

35. Carp HJA. Progestogens and pregnancy loss. Climacteric 2018; 21:380-84.

36. Wahabi HA, Fayed AA, Esmaeil SA. Progestogen for treating threatened miscarriage. Cochrane Database Syst Rev 2018; 06: 8:CD005943.

37. Pillai RN, Konje JC, Richardson M. Prediction of miscarriage in women with viable intrauterine pregnancy. A systematic review and diagnostic accuracy meta-analysis. Eur. JjObstet. Gynecol. Reprod. Biol 2018; 220:122-31.

38. Dugas C, Slane VH. Miscarriage. StatPearls [Internet]. 2019 Treasure Island (FL) StatPearls Publishing.

39. Disha, Sharma S, Goyal M. Association of raised blood lead levels in pregnant women with preeclampsia: a study at tertiary centre. Taiwan J Obstet Gynecol 2019; 58:60-63.

40. Turan K, Arslan A, Uckan K. Change of the levels of trace elements and heavy metals in threatened abortion. J Chin Med Assoc 2019; 82:554-57.

41. Mouri M, Rupp TJ. Threatened Abortion. StatPearls [Internet]. 2019 Treasure Island (FL) StatPearls Publishing.

42. Gracia CR, Sammel MD, Chittams J. Risk factors for spontaneous abortion in early symptomatic first-trimester pregnancies. Obstet Gynecol 2005; 106:993-99.

43. Furneaux EC, Langley-Evans AJ, Langley – Evans SC. Nausea and vomiting of pregnancy: endocrine basis and contribution to pregnancy outcome. Obstet Gynecol Surv 2001; 56:775-82.

44. Park IY, Park CH, Lee G. Prognosis of threatened abortion by embryonic/fetal heart beat rate. Ultrasound Med Biol 2006; 32: 264.

45. Felder M, Kapur A, Gonzalez-Bosquet J. MUC16 (CA125): tumor biomarker to cancer therapy, a work in progress. Mol Cancer 2014; 13:219-29.

46. Cunningham FG. Williams's obstetrics, 25th ed.USA, Appleton & Lange, 2005.

47. Ayaty S, Roudsari FV, Tavassoly F. CA-125 in normal pregnancy and threatened abortion. Iranian J Reprod Med 2007; 5:57-60.

48. Williams MA, Mittenddorf R, Liederman E. Adverse infant outcomes associated with first–trimester vaginal bleeding. Obstet Gynecol 1991; 78:14-8.

49. Haddow JE, Knight GJ, Kloza EM. Alpha fetoprotein vaginal bleeding and pregnancy risk. BJOG 1996; 93:589-93.

50. Wahabi HA, Fayed AA, Esmaeil SA. Progestogen for treating threatened miscarriage. Cochrane Database sys Rev 2011; 12: CD 005943.

51. Szekeres BJ, Barakonyi A, Par G. Progesterone an immunomodulatory molecule. Int Immunopharmacol 2001; 1:103748.

52. Levy B, Sigurjonsson S, Pettersen B. Genomic imbalance in products of conception: Single-nucleotide polymorphism chromosomal microarray analysis. Obstet Gynecol 2014; 124: 202-09.

53. Rottenstreich A, Amsalem H, Kleinstem G. Outcome of threatened abortions after anticoagulation treatment to prevent recurrent pregnancy loss 2017;35: 461-67.

54. Bleeding during pregnancy. American Pregnancy Association website. Available at: http://americanpregnancy.org/pregnancy-complications/bleeding-during-pregnancy. Updated August 2015. Accessed September 8, 2017.

55. Bleeding during pregnancy. The American Congress of Obstetricians and Gynecologists website. Available at: http://www.acog.org/~/media/For%20Patients/faq038.pdf?dmc=1&ts=20120814T1300076311. Updated July 2016. Accessed September 8, 2017.

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Case Report

Port site Tuberculosis Presenting as a Chronic Discharging Sinus in the Epigastric Region after Laparoscopic Cholecystectomy in the Department of Surgery in Tertiary Care Hospital

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Abstract

Laparoscopic cholecystectomy is routinely performed in the surgical department now a days. However port site tuberculosis is a rare complication following laparoscopic cholecystectomy .We report here a case of a young female who underwent laparoscopic cholecystectomy outside our hospital then developed a chronic discharging sinus in the epigastric port site. Two attempt of debridement and dressing then one time debridement then wound closure done but recurrence. Sinus tract was excised after sinogram and send the tract for histopathological examination and shows tuberculosis. The patient was kept for antitubercular drug and no recurrence after 3 month follow up.

Key words: Laparoscopic cholecystectomy, Port site TB, Anti tubercular drug.

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Introduction

Laparoscopic cholecystectomy is the gold standard treatment of cholelithiasis now a days. Laparoscopy has its own set of complications in addition to those operation proper.[1] Port site infections are not uncommon.[2] But port site TB is rare complication following laparoscopic procedure with only a few isolated cases reported in the literature.[3] Although ultramodern aseptic techniques and highly sophisticated methods of sterilization are employed now a days, yet it has been noted that in many cases there is postoperative infection of these wounds. The frequency of these infections depends on a number of important factors. According to Waqar A Jan et al 2008 although the frequency and risk factors for wound infection following conventional open cholecystectomy has been extensively been studied in literature, they have not been thoroughly evaluated for laparoscopic cholecystectomy4. During the last few decades the techniques of surgery have made a lot of strides and advancements from the older methods of open surgery to the modern methods of minimal access surgery, referred to as laparoscopic surgery or robotic surgery. Now a days Laparoscopic surgery is commonly done with respects to cholecystectomy, appendectomy, urology, gynaecology, pancreatectomy, gastrectomy, colorectal surgeries, hernias and even to oncosurgery.[4,5]

We report here a case young female who underwent laparoscopic cholecystectomy (LC) outside our Hospital then presented to us with discharging sinus in the epigastric port site.

Case Report

A 40 year - old female presented to us with complaints of purulent fluid discharge coming from a wound on her upper abdominal wall. The patients had undergone laparoscopic cholecystectomy 3 months back for symptomatic gall stone disease in peripheral Hospital. Postoperative period was uneventful, but patients epigastric port wound did not heal even after 1 month .She developed a small discharging sinus over her

upper anterior abdominal wall at the port site for which debridement for the wound was done thrice over a period of 2month and regular dressing done in the same Hospital, but every time there was recurrence within 2-3 weeks. There was no history of loss of appetite, evening rise of temperature, cough, hemoptysis, weight loss or abdominal pain or anti tubercular therapy (ATT) in the past.Nondiabetic, normotensive and no history of Jaundice.

On examination a small opening with scanty serous discharge was present in the epigastric port site (Fig:-I). Margins of the wound were undermined with unhealthy granulation tissue.There was no erythema or tenderness and rest of the per abdominal examination reveals normal. Her investigations were unremarkable except for the raised ESR (erythrocyte sedimentation rate) which was 35 mm in 1st hour. Mantoux test was negative. X-ray chest PA view was normal . A sinogram (Fig:-II) was done which showed non branching sinus tract ending present in the epigastric region whose direction was upwards in the anterior abdominal wall (Fig:-III). Complete excision of the sinus tract was done after delineation of methylene blue dye under general anesthesia, after achieving complete hemostasis wound was lay open given a pack within it, then regular dressing done. After receiving histopathological report which showed chronic granulomatous lesion along with epitheloid cells in a lymphocyte back ground suggestive of tuberculosis (TB) (Fig:-IV). Then ATT (anti-tubercular therapy) with 4FDC (Rifampicin, pyrazinamide, isoniazid and ethambutol)was used and after 10 days dressing, secondary suture was done .The patient had no recurrence after 3 months of follow up(Fig:-V). ATT (antitubercular therapy) is planned for 9 months (2months intensive phase with 4 drugs followed by 7 months continuation phase with 2drugs)

Fig-I: Photograph of sinus tract at epigastric port site.

Fig-II: Sinogram done at the epigastric port site.

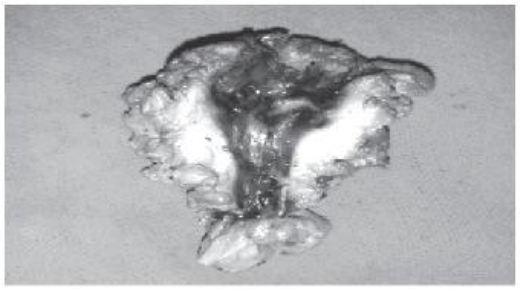

Fig-III: Complete excision of sinus tract.

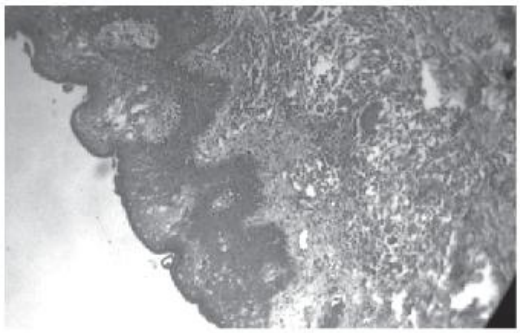

Fig-IV: Microscopic figure of tubercular granuloma.

Fig-V: Healed wound without recurrence.

Discussion

Most of the surgical centres in the world today, laparoscopic procedures are being increasingly performed. They are associated with some unique set of complications apart from other common surgical complications.[6] Port site infections are not uncommon.[2] However, only isolated reports of PSI (port site infection) with tubercular and nontubercular mycobacteria presenting as non healing discharging sinus tract exist.[7,8,9] Cases of port site TB (tuberculosis) have been reported after LC (laparoscopic cholecystectomy), laparoscopic oophorectomy, hysterectomy, adhesionolysis, laparoscopic inguinal hernia repair, laparoscopic appendectomy.[10] This assumes paramount importance to trackle this complications in developing countries like India in the view that occurs in the highest TB (tuberculosis) burden countries in the world regarding absolute number of incident cases that occurs each year.[11] port site mycobacterial infection is exogenous, but it can be endogenous also. Exogenous mode of transmission include improper sterilization of instruments and use of tap water containing resistant atypical mycobacteria to clean these instruments before immersion into glutaraldehyde solusion.[12] Mansor et al reported port site TB at the epigastric port during gallbladder extraction in a case of gallbladder TB.[4] Cunnigaiper and Venkatraman reported port site TB which occurred after diagnostic laparoscopy for primary infertility and peritoneal tuberculosis were found peroperatively.[7] In our case, patient was operated in a peripheral Hospital, and exact policy adopted for sterilization is not known.

Moreover the excised gallbladder of this patient was not sent for histopathological examination. In our patient there was no focus of tuberculosis so possibility of transmission of TB to port site through infected laparoscopic instruments is possibility.

The history in such a case is typically the presence of discharging sinus after non healing wound at port site.[13] Usually, the epigastric port site (In case of laparoscopic cholecystectomy) or specimen retrieval site (In other laparoscopic procedure) is almost involved as that port is associated maximal handling site during surgery. The investigation in that cases include pus culture and sensitivity to rule out any port site infection or secondary infection. ZN staining is used for direct demonstration AFB. Polymerase chain reaction(PCR) has very high negative predictive value for demonstrating mycobacterial DNA and is very useful in such isolated cases.[14] Delineation of sinus tract can be done by sinogram X-ray and preoperatively by methylene blue dye. Treatment of patients with such a case may started with antitubercular drugs after histopathological report from the port site sinus tract. It was reported Patients wound may heal with ATT (antitubercular therapy) only.[15] Gupta et al. confirmed TB (tuberculosis) by histopathological examination from the wound site and followed by sinus tract excision followed by antitubercular therapy and it was done in our case

Conclusion

Port site tuberculosis is not so common but devastating to the patients also for the surgeons. It is also burden to our health economy. So proper sterilization of instruments is necessary by 2% Glutaraldehyde solution and before sterilization wash of the instruments with sterile tap water and after withdrawal from glutaraldehyde solution maintain proper sterility.

Reference

1. Akamastu T Tabata,Hironga M, Evaluation of the efficacy of a 2% glutaraldehyde product for disinfection of fibreoptic endoscope with a automated machine. J Hosp Infect 1997,35: 47-57
2. Waqar AJ, sabir Ali I , et al . The frequency of port site infection following laparoscopic cholecystectomy. JPM 12008,22: 66-70
3. Centres for disease control and prevention. The National Health care safety Natwork(NHSN) Manual: patient safety Common Atlanta, GA: Division of Health care quality promotion. National Centre for Emerging and Zoonotic Infectious Disease Available from: URL:http//www.cdc.gov /nhn/ acute-care-hospital/index.html.2015.
4. Horan TC, Gaynyes RP, Martone WJ, et al. CDC definitions of nosocomial surgical site infection, 1992: a modification of CDC definition of surgical wound infections. Infect control Hosp Epidemiol 1992; 13: 606-8.
5. Nader Abd-elhamid, Khaled Kasim,Anahtar Kelimeler. Port site Non-tubercular Mycobacterial infection after laparoscopic cholecystectomy: A seres. TAF prev med Bull 2013; 12(4): 481484.

6 . Sasmal PK, Mishra TS, Rath S, Meher S, Mohapatra D. Port site infection in laparoscopic surgery : A review of its management. World J clin cases2015;3:864-71.

7 . Cunnigaiper ND, Vankatramans. Port site tuberculosis: Endogenous or exogenous infection? Surgery Infect (Larchmt)2010;11:77-8.

8 . ChaudhuriS Sarkar D, Mukerji R. Diagnosis and management of atypical mycobacterial infection after laparoscopic surgery. Indian J surg2010; 72: 438-42.

9 . Abd-Elhamid N, Kasim K. port site non tuberculous mycobacterial infection after laparoscopic cholecystectomy: A case series study. tAF prev Med Bull 2013;12: 481-4.

10. Bhandakar DS, Bhagwat S, Punjani R. Port site infection with mycobacterium chelonei following laparoscopic appededectomy. Indian J Gastroenterology 2001;20;247-8.

11. Park K. Communicable disease: Tuberculosis. In : Park text book of preventive and social Medicine.22nd ed. Jabal pur, Madhya prodesh, India:Banarsidas bhanot;2013.

12. JagodishN, Sameer R. Port site tuberculosis: A rare complication following laparoscopic cholecystectomy. Scand J Infect Dis 2002;34:928-9.

13. SethiS, Sharma M Ray P, Singh M, Gupta A.Mycobacterium fortutum wond infection following laparoscopy. Indian J Med Res 2001; 113:83-4.

14. Honore-Bouakline S et al .Rapid diagnosis of extrapulmonary tuberculosis by PC R2003;41:2323-9.

15. Jain SK, StokerDL, VathianathanR .Port site tuberculosis following laparoscopic cholecystectomy: a case report and review of literature.indian J surg2005;67:205-6.

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