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Editorial

COVID-19 Infection in Children

Corona virus disease-2019 (COVID-19) is a global health crisis. The clinical characteristics, disease progression, and outcomes in children and young adults appear significantly milder compared to older individuals. Since first being reported in Wuhan, China in December 2019, COVID-19 has rapidly spread to affect over 215 countries worldwide. According to the World Health Organization (WHO), there have been 79,232,555 confirmed cases and 17,54,493 deaths worldwide up to December 27th, 2020¹. Disease burden of COVID-19 in children is difficult to determine because case definitions for screening, testing, and disease severity in children are not universal and the proportion of asymptomatic infected children is high². Furthermore, children exhibit certain particularities and cannot clearly describe their own health status in contact history which has contributed to the severe challenge of protecting, diagnosing, and treating this population³.

In reports from countries that were severely affected early in the course of the pandemic, children comprise 1-2% of the diagnosed COVID-19 cases, 56% of children with COVID-19 demonstrated clear evidence of transmission through family gatherings, the age ranged from 3.3-11 years in different reports, and like in the adult population, there is a male predominance². The possible reasons for the lower number and milder infections in children and young adults include lower exposure to viruses, being isolated at home, and minimal exposure to pollution and cigarette smoke, all of which contributing to a healthier respiratory tract. The immune response of children differs from that of adults, which progressively deteriorates with age, such as preschools, which have a repertoire of immune cells 5-10 times larger than that of a 50-year old, and 20 times larger than that of an 80-year old. This may play a role in mitigating the spread of the virus and in the cytokine signaling cascade triggered by SARS-Cov-2. They relate to severe outcomes in adulthood⁴. Viral co-infection may be important in limiting SARS-Cov-2 replication through direct virus-to-virus interaction and competition. Additionally, the distribution, maturation, and functions of viral receptors may be important in age dependent susceptibility to severe COVID-19⁵.

However, good regenerative capacity of the lung could explain the overall less severe and early recovery of COVID-19 in children compared to older patients. Also, due to greater upper airway resistance in children, aerosol particles deposit more in the tracheobronchial tree than in the alveoli⁶.

The clinical spectrum of COVID-19 is wide, varying from completely asymptomatic forms to those characterized by severe respiratory distress requiring intensive care. De Souza TH et al.⁷ found 14.2% asymptomatic, 36.3% mild, 46% moderate, 2.1% severe, and 1.2% critical cases in children. Dong et al. in the largest paediatric review of 2143 children, described that 13% of virologically confirmed children were asymptomatic⁸.

Asymptomatic children may play a major role in community based viral transmission. Available data suggests that children may have more upper respiratory tract involvement than lower respiratory tract involvement⁸. Also, faecal shedding of the virus in the stool continues for several weeks after diagnosis⁹. Concerns have been raised about faecal oral transmission of the virus, particularly in infants and children who are not toilet trained and have viral replicates in the gastrointestinal tract¹⁰. Prolonged shedding in nasal secretions and stool has substantial implications for community spread in child care centers, in schools and in homes.

For the symptomatic children requiring hospital admission, the most common presenting symptoms are fever (70%), cough (39%), nausea/vomiting (32%), and shortness of breath (30%)⁶. The neonatal age group, male gender, lower respiratory tract disease, and preexisting medical conditions such as heart disease, asthma, neurological and genetic disorders were all associated with ICU admission².

Laboratory diagnosis of COVID-19 in children is mostly unremarkable. For COVID-19, RT-PCR testing of nose and throat swabs for detection of SARS-Cov-2 nucleic acid has been recommended as the confirmatory test. Full blood counts are normal in most cases; leucopenia, neutropenia, or lymphopenia are less common. Abnormal C-

reactive protein, procalcitonin, liver enzymes or CPK are also present in a few cases. However, a good number of paediatric patients can have abnormal CT findings characteristic of COVID pneumonia even in asymptomatic or mild to moderate clinical category⁶.

For the few children who will require admission to a healthcare facility, the cornerstone of management is supportive therapy, including adequate nutrition and calorie intake, correction of fluid and electrolyte imbalance, and oxygen supplementation. Antibiotic maybe indicated if bacterial super infections suspected. World Health Organization has not recommended any specific treatment for children until the results of ongoing clinical trials are available. We strongly believe that clinical trials of all therapeutic agents for COVID-19 are needed in children as well⁵.

Since May 2020, several highly endemic countries have reported an exceptionally high incidence of multisystem inflammatory syndrome (MIS) in children, which was associated with coronavirus disease 2019. Several case definitions were proposed. All include fever, elevated inflammatory markers, and organ dysfunction not attributed to another infectious cause. The higher rate of positive RT-PCR suggests a late disease complication².

A targeted surveillance of MIS in children from March 15 to May 20 in paediatric health centers across the United States showed that the organs involved in MIS in children were GIT (92.2%), followed by CVS (80%), haematologic (76%), mucocutaneous (74%), and respiratory (70%). About 80% require intensive care, 20% mechanical ventilation, and 48% vasoactive support. Mortality was 2%. Thus, the study concluded that MIS in children associated with SARS-Cov-2 led to serious and life-threatening illness in previously healthy children and adolescents¹¹.

During this era of the COVID pandemic, Bangladesh is also experiencing COVID-19 among paediatric patients. However, published reports and research papers on paediatric COVID are scarce. We strongly believe that a large cohort study with a bigger sample size and effective control groups using different duly regimens should be conducted in the near future in this country.

Though SARS-Cov-2 infection causes fewer fatalities among children, the need for vaccination cannot be underestimated. The COVID vaccine is currently recommended by the CDC for children over the age of 12. But it should be duly extended to cover other paediatric age groups as well⁶.

However, there is still much that we need to learn about the impact of this virus on children as well as the impact of children on viral spread. It is important that both medical and social efforts focusing on the paediatric population are undertaken to protect the children of the world, allowing them to fulfill their enormous potential.

Dr. Archana Dev

*Associate Professor, Department of Paediatrics,
Jalalabad Ragib-Rabeya Medical College, Sylhet.
Email: dr.archanadev7@gmail.com.*

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Original Article

Assessment of Metered Dose Inhaler Technique among Chronic Obstructive Pulmonary Disease Patients in a Tertiary Care Hospital.

Md. Guljar Hossain¹, Md. Enayet Hossain², Ferdaus Ahammed³

¹Indoor Medical officer, Department of Medicine, Sylhet MAG Osmani Medical College Hospital, Sylhet.

²Associate Professor, Department of Medicine, Sylhet MAG Osmani Medical College, Sylhet.

³Assistant Professor, Department of Medicine, Sylhet MAG Osmani Medical College, Sylhet.

ABSTRACT

Chronic obstructive pulmonary disease (COPD) is a progressive and debilitating condition with an insidious onset, often diagnosed in the middle age or later after a history of worsening breathlessness. Metered Dose Inhalers (MDI) are the mainstay of treatment of chronic obstructive pulmonary disease, incorrect use of which may lead to decreased medication delivery and poor disease control. This descriptive cross sectional study was carried out in the medicine outpatient department in Dhaka Medical College Hospital (DMCH) over a period of 6 months from October 2013 to April 2014 to identify the gap between prescribing inhalers and practical use by COPD patients. A total of 120 patients with COPD were included in the study. Data was collected using a semi-structured questionnaire containing the variables of interest and was analyzed. Performing the correct steps of MDI was assessed by practical observation. The results showed that, among all the patients, 106 (88.3%) were male and 14 (11.7%) were female. Among 120 patients, only 10 (8.3%) patients could perform all steps of MDI correctly. At least one step was mistaken by 97 patients (80.83%). The association between age and MDI usage steps showed that maximum elderly patients in the age range of 61 to 80 had difficulty performing the steps. This study concluded that a number of patients in a tertiary care hospital were unable to use metered-dose-inhalers properly, and therefore indicates the need to make people aware of this technique, either by counseling or by arranging workshops.

Keywords: Chronic obstructive pulmonary disease, Metered dose inhalers.

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INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a well-characterized chronic lung disease that involves progressive airflow limitation with symptoms of

Address of Correspondence:

Dr. Md. Guljar Hossain, Indoor Medical Officer, Department of Medicine, Sylhet MAG Osmani Medical College Hospital, Sylhet.
Mobile: +8801717458927, Email: guljar.mmc85@gmail.com

dyspnoea, cough and sputum production. This airflow limitation is usually associated with an abnormal inflammatory response of the lungs to noxious particles or gases, primarily caused by cigarette smoking. Although COPD affects the lungs, it also produces significant systemic consequences¹. It is now the fifth leading cause of global mortality and morbidity, as well as a major public health issue in both developed and developing countries². To deal with the deterioration of respiratory function in COPD patients, it is necessary to

gradually introduce pharmacologic, non-pharmacologic, and surgical treatments³.

Inhalation medication is the cornerstone of therapy for patients with COPD. Inadequate instruction and poor inhalation techniques moderate the effectiveness of the medication and are a major cause of poor disease control⁴. The major advantage of inhaled therapy is that medications are delivered directly into the airways, which produces a high local concentration with a significantly lower risk of systemic adverse effects. Metered dose inhaler (MDI) is the earliest device and is the most commonly used one. MDIs are difficult to use, have a high rate of incorrect handling (71%), and require patient-device coordination. Furthermore, incorrect technique has been reported in up to 94% of patients^{5,6}. Patient-related determinants like sex, age, educational level, emotional problems, severity of obstruction, and diagnosis have been associated with incorrect inhalation technique^{7,8}. Some studies have demonstrated that patients using a pressured metered-dose inhaler made significantly more mistakes than users of dry powder inhalers, whereas another study showed better inhalation technique through the use of MDIs⁷.

Patients with COPD are repeatedly admitted in the medicine ward with acute exacerbations and complications. COPD patients impose an enormous burden on the hospital health care system. Inefficient inhaler use is a common problem with many patients. This in turn, can result in poor drug delivery, decreased disease control and increased inhaler use. This problem obviously has cost implications, both in terms of medication, visits to the physicians, and hospital admissions. This baseline study was aimed at identifying the gap between prescribing inhalers and practical use by COPD patients.

MATERIALS AND METHOD

This six-month cross-sectional observational study was undertaken in the Department of Medicine outpatient department (OPD), Dhaka Medical College, Dhaka from October 31st to April 1st, 2014. Participants were taken by means of a purposive sampling technique. A total of 120 (One hundred twenty) willingly agreed patients from Medicine OPD diagnosed as COPD, confirmed by compatible investigations (CBC, CXR P/A View, Spirometry) fulfilling the selection criteria were included for the study. Patients aged <13 years were excluded from the study. Patients were selected who were using one or more than one metered dose

inhaler given from the first time diagnosis that might be in DMCH Medicine outdoors or outside. After that, each patient was instructed to show how they were using metered dose inhalers (Inhaler were given by the investigator). Data regarding the performance of the correct steps of MDI inhalers was recorded. Data was processed manually and analyzed with the help of SPSS version 22. The mean and standard deviation were used to express quantitative data, while frequency and percentage were used to express qualitative data.

RESULT

The result showed that the minimum age of the respondents was 54 years old and the maximum age was 79. The mean age was 63.74 years with a standard deviation of 6.08. Among the patients, 88 (73.3%) were male and 32 (26.7%) were female. The male to female ratio was 2.75:1. The majority of patients (57.5%) completed secondary school. Less than 5 years of COPD was found in 74.2% of patients, while more than 5 years was found in 25.8% of patients (Table-I).

Table-I: Baseline characters of the participants (n=120).

Trait	Frequency	Percentage
Age (In Years)		
50-60	49	40.8
61-70	50	41.7
71-80	21	17.5
Sex		
Male	88	73.3
Female	32	26.7
Level of education		
None	4	3.3
Primary	40	33.3
Secondary	69	57.5
Tertiary	7	5.9
Duration of COPD		
less than 5 years	89	74.2
More than 5 years	31	25.8

All patients could perform step 1 correctly (100%). Correct performance was observed mostly in step 2 (89%), step 3 (87.5%) and step 8 (97.5%). Most of the patients made errors in step 5 (75.8%) and step 6 (56.7%) (Table-II).

Table-II: Distribution of the patients by performance MDI steps (n=120).

MDI steps		Frequency	Percentage	p value/Z test
1	Correct	120	100.0	
	Incorrect	0	0	
2	Correct	89	74.2	Z = 5.23
	Incorrect	31	25.8	P < 0.001
3	Correct	105	87.5	Z = 7.96
	Incorrect	15	12.5	P < 0.001
4	Correct	66	55.0	Z = 1.08
	Incorrect	54	45.0	P = 0.277
5	Correct	29	24.2	Z = 5.567
	Incorrect	91	75.8	P < 0.001
6	Correct	52	43.3	Z = 1.45
	Incorrect	68	56.7	P = 0.145
7	Correct	77	64.2	Z = 3.308
	Incorrect	43	35.8	P = 0.002
8	Correct	117	97.5	Z = 8.532
	Incorrect	3	2.5	P < 0.001

Out of 120 patients, only 10 (8.3%) patients performed all eight steps correctly, whereas 13 (10.8%) patients performed seven steps correctly, 33 (27.5%) patients performed 6 steps correctly, 39 (32.5%) patients performed five steps correctly, 13 (10.8%) patients

performed four steps correctly, 8 (6.7%) patients performed three steps correctly, 3 (2.5%) patients performed two steps correctly and only one step was correctly performed by 1 (0.8%) patient (Table-III).

Table-III: Distribution of the patients by completion of the MDI steps correctly as a whole (n=120).

Total completed steps (correctly)	Number of patients performing	Percentage among total patients
1	1	0.8
2	3	2.5
3	8	6.8
4	13	10.8
5	39	32.5
6	33	27.5
7	13	10.8
8	10	8.3

The association between age groups and MDI steps showed poor performance in the age group of 71 to 80 years. Patients of this elderly age group showed

incorrect performance mostly in steps 5 and 6 (Table-IV).

Table-IV: Association between age group and MDI steps completion (n=120).

	MDI steps	Age Group			Total	p value
		50-60 Years	61-70 Years	71-80 Years		
1	Correct	49 (40.8%)	50 (41.7%)	21 (17.5%)	120 (100%)	-
	Incorrect	0	0	0	0	
2	Correct	12 (10%)	40 (33.3%)	37 (30.8%)	89 (74.2%)	0.128
	Incorrect	9 (7.5%)	10 (8.3%)	12 (12.0%)	31 (25.8%)	
3	Correct	44 (36.7%)	46 (38.3%)	15 (12.5%)	105 (87.5%)	0.044
	Incorrect	5 (4.2%)	4 (3.3%)	6 (5%)	15 (12.5%)	
4	Correct	32 (26.7%)	8 (6.7%)	26 (21.7%)	66 (55%)	0.095
	Incorrect	17 (14.2%)	13 (10.8%)	24 (20.0%)	54 (45%)	
5	Correct	20 (16.7%)	2 (1.7%)	7 (5.8%)	29 (24.2%)	0.002
	Incorrect	29 (24.2%)	19 (15.8%)	43 (35.8%)	91 (75.8%)	
6	Correct	49 (94.2%)	0 (0%)	3 (2.5%)	52 (43.3%)	0.001
	Incorrect	0	21 (17.5%)	47 (39.2%)	68 (56.7%)	
7	Correct	30 (25%)	35 (29.2%)	12 (10%)	77 (64.2%)	0.503
	Incorrect	19 (15.8%)	15 (12.5%)	9 (7.5%)	43 (35.8%)	
8	Correct	21 (17.5%)	49 (40.8%)	47 (39.2%)	117 (97.5%)	0.579
	Incorrect	0	1 (0.8%)	2 (1.7%)	3 (2.5%)	

DISCUSSION

Inhalation medication is the cornerstone of therapy for patients with COPD. Noncompliance with pharmacotherapy is a common reason for therapeutic failure⁹. Inadequate inhalation instruction and poor inhalation technique moderate the effectiveness of the medication and are a major cause of poor disease control. Poor drug delivery and increased inhaler use are also caused by ineffective inhaler technique^{10,11}. In this current study, total of 120 COPD patients of medicine OPD, DMCH were selected as study participants. The minimum age is 54 years old and the maximum age is 79. The mean age was 63.74 years with a standard deviation of 6.08. Among the patients, 88 were male and 32 were female. The male to female ratio was 2.75:1.

Our study showed that 10 out of 120 patients (8.3%) could perform all steps correctly. A similar type of study was conducted in a government hospital in Rawalpindi, Pakistan by Baqai HZ et al. which showed that 24% of patients could perform all steps correctly¹². In another study in Korea including 196 COPD patients, it was observed that the proportion of patients with correct inhaler use was 46.2% with MDI¹³. In another study, Press et al. in 2 urban hospitals of

Chicago, showed that misuse was common (86% MDI) among COPD patients¹⁴.

The association between age and MDI usage steps in the present study revealed poor performance in maximum elderly patients in the age range of 61 to 80 and difficulty in performing deep breaths in and breath holds (Doing correctly 43% and 47%). In the Rawalpindi study, out of all the steps followed, the weakest step was breath holding, with only 27.88% of the patients performing it correctly, and the best step was preparation of the inhaler, with 87.5% of the patients performing it correctly. The study also showed highly significant negative correlation between age and performing MDI usage steps¹². A similar type of finding is observed by others, where evidence shows that incorrect inhaler technique is particularly common among older patients with COPD⁷. Common errors include inadequate coordination of actuation and inspiration and an inability to achieve a high inspiration flow rate¹⁵. This study was done in one centre (Medicine OPD of DMCH), so it was not representative of the entire population of Bangladesh. The sample size was small. Data was collected purposively, so there might be a chance of selection bias.

CONCLUSION

The knowledge and practice level of COPD patients about the correct use of Metered Dose Inhalers is far below the desired level. The weakest step was breath holding. Older patients (Age range 61-80) had more difficulty executing the MDI technique compared to other (Age range 50-60) patients.

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Original Article

Influence of Body Mass Index on Self-esteem among School Adolescents

Taposi Dey¹, Nimmi Rifat², Ashith Chandra Das³

¹Lecturer, Department of Community Medicine, Jalalabad Ragib-Rabeya Medical College, Sylhet.

²Associate Professor, Department of Community Medicine, National Institute of Preventive and Social Medicine, Dhaka.

³Associate Professor, Department of Paediatrics, Jalalabad Ragib-Rabeya Medical College, Sylhet.

ABSTRACT

The prevalence of obesity is increasing in both developed and developing country. Overweight or obesity in adolescent is related to a poor body figure perception, low self-esteem, and a low level of confidence in physical abilities. The objective of the study was to find out the influence of body mass index (BMI) on self-esteem among adolescents and also find out the relationship between BMI, self esteem and socio-demographic characteristics of the respondents. This cross-sectional study was conducted among the students of Blue Bird School and College, a private school and college situated in Sylhet City, Bangladesh. Data was collected from students of class 9 and 10 and total of 158 students were included in the study. Data was collected by face to-face interview using a semi-structured questionnaire by author himself. After height and weight measurement, BMI was calculated as 'weight in kilogram divided by the square of height in meter (Kg/m²)'. Self-esteem was measured by using the Rosenberg Self-esteem Scale. Among 158 respondents, 52.5% were male and female were 47.5%. The mean age was 15.38 ± .754 years. Overweight and obesity were present in 31.6% of the respondents. Overweight and obesity was higher among the respondents whose mothers had a higher academic degree, which was statistically significant. According to the Rosenberg self-esteem scale, low self-esteem and normal self-esteem were present in 80.4% and 19.6% of the respondents, respectively. There was no significant relationship between self-esteem with socio-demographic data, but there was a statistically non-significant positive correlation between self-esteem and BMI on the Pearson Correlation test. Over-weight and obesity were found higher among the adolescents in this study. The proportion of self-esteem scores was low among the adolescents and self-esteem was positively related to high BMI.

Keywords: Obesity, Body mass index, Self-esteem, Adolescent

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INTRODUCTION

Adolescence is a crucial period in human development during which significant somatic growth and the maturation of secondary sexual characteristics take place¹. This period is not only a time of dynamic

----- Address of Correspondence:

Dr Taposi Dey, Lecturer, Department of Community Medicine, Jalalabad Ragib-Rabeya Medical College, Sylhet. Mobile: +8801746-347480. Email: tapositanwi@gmail.com

physical change, but of psychological, behavioral and emotional development. Despite the fact that this is the period of greatest fast growth, second only to infancy, nutritional problems in adolescents have been generally disregarded in underdeveloped nations, both as a subject of scientific inquiry and as a focus of public health and nutrition programs².

It is a well-recognized fact that obesity is a major public health problem in the world, and the prevalence of obesity is increasing in both developed and developing countries. Although the prevalence of overweight and

obesity varies by country and ethnic group, adolescent obesity is one of the world's major health problems³. Obesity is not only related to increased risk of chronic diseases such as diabetes mellitus, hypertension, dyslipidemia or cardiovascular disease⁴, but also related to poor self-esteem, a low level of confidence in physical abilities as well as a low interest in participating in physical activities⁵.

The World Health Organization (WHO) has declared obesity a "global epidemic". According to WHO projections for 2015, nearly 1.5 billion individuals will be overweight. Adolescents who are overweight have a 70% chance of becoming obese⁶. Overweight and obesity, once thought to be a problem only in high-income countries, are now dramatically increasing in low and middle-income countries such as India, Nepal, Sri Lanka, and Bangladesh, particularly in urban areas⁷.

Obesity is extremely common in high-income countries, and many have declared obesity an epidemic⁸. Children in low- and middle-income nations are exposed to high-fat, high-sugar, high-salt, energy-dense, and micronutrient-poor diets, which are less expensive but have worse nutritional content. Simultaneously, rising levels of physical inactivity have resulted in substantial rises in childhood obesity, owing to the increasingly sedentary character of many types of labour, changing modes of transportation, and increased urbanization⁶. According to the Bangladesh Health and Demographic Survey, one-third (33%) of the children in the country were underweight⁹. However, a recent countrywide epidemiological study reported that among 6-15-year-old children, 3.5% were obese, 9.5% were overweight and 17.6% were underweight⁸. Overweight and obesity have increased at least fivefold in Dhaka over the last two decades, with the prevalence being significantly higher among individuals with better socioeconomic status¹⁰.

Self-esteem appears to be a key component in predicting depressive symptoms in young adults. According to some authors, overweight or obesity in young adults is related to a poor body image perception, low self-esteem, and a lack of confidence in physical abilities as well as a low interest in participating in physical activities¹¹.

Previous studies into the relationship between BMI and self-esteem failed to achieve a consensus on the existence of a negative relationship. Thus, Mendelson investigated the relationship between obesity and self-esteem and demonstrated a lack of association between

bodyweight and self-esteem. In contrast to Mendelson, Webber asserts that body mass is an important aspect of social acceptance and that being overweight is a significant predictor of low self-esteem. Pilafova and Bledsoe have demonstrated a negative association between body mass and self-esteem¹².

So, the aim of the study was to find out the influence of BMI on adolescent self-esteem and also finding out the relationship between these two variables with the respondents socio-demographic status.

METHODOLOGY

This cross-sectional study was conducted among the students of Blue Bird School and College, a private school and college situated in Sylhet City, Bangladesh, between the periods of January 2017 and December 2017. The school consisted of three sections named primary, secondary and college section. The secondary section of school consists of classes 6-10 and accommodates nearly 2000 students. Data was collected from classes 9 and 10. Among 800 students in these two classes, 158 respondents were included in the study by means of a purposive sampling method. The ethical clearance of the study protocol was taken from the institutional Ethics Committee of the National Institute of Preventive and Social Medicine, Dhaka. Before conducting the study, permission was obtained from the school's principal and ascent was obtained from each participant. Data was collected by face to face interview using a semi-structured questionnaire by the investigators. Body weight was recorded to the nearest 0.1kg with subjects barefoot and wearing school uniform and height was measured to the nearest 0.1cm by using a digital stadiometer. During the measurement of height, all the respondents were asked to stand with their back to the scale wall and look directly forward. The back of their feet, calves, bottom, upper back and the back of their head should all be in contact with the scale wall. After height and weight measurement, BMI was calculated as 'weight in kilogram divided by the square of height in meter (Kg/m^2)'. After calculating BMI with the help of SPSS Version 20, each BMI score was put into the CDC recommended growth chart (BMI for age), then manually one by one all BMI score were converted into BMI percentile. Self-esteem was measured by using the Rosenberg Self-esteem Scale. All data were analyzed using SPSS version 20. Chi-square test was done with a probability of <0.05 considered as statistically significant. The Pearson Correlation test

was done to find out the relationship between self-esteem and BMI.

RESULT:

This descriptive cross sectional study was conducted among 158 adolescents of both sexes between the ages of 14-17 years in a selected urban school in Sylhet City. Among the respondents, 52.5% were male and female were 47.5%. The mean age was $15.38 \pm .754$ years. Overweight and obesity were present in 31.6% of the respondents.

There was no significant relationship between overweight and obesity with age and sex of the respondents, educational qualification of the father & occupation of the father and mother of the respondents, monthly family income and types of family. The prevalence of being overweight and obese was higher

among the respondents whose mothers were highly educated (Graduate and above), which was statistically significant ($p=0.01$) (Table-I).

According to the Rosenberg self-esteem scale, low self-esteem was present in 127 (80.4%) of the respondents and normal self-esteem was present in 31 (19.6%) of the respondents [Figure-1]. There was no significant relationship between self-esteem with age & sex of the respondents, educational qualification & occupation of the father and mother of the respondents, monthly family income and types of family (Table-II).

This study showed that there was a positive relationship between self-esteem and BMI on the Pearson Correlation test. However, this was statistically non-significant ($r=.029, p=.721$) (Figure-2).

Table-I: Association between socio-demographic status and BMI (n=158)

Characteristics	Normal weight, n(%)	Overweight & Obese, n(%)	p value
Sex of the respondents			
Male	52 (62.6)	31 (37.4)	0.14
Female	56 (74.7)	19 (25.3)	
Religion			
Muslim	78 (73.6)	28 (26.4)	0.06
Hindu and others	30 (57.7)	22 (42.3)	
Education status of father			
HSC and below	42 (77.8)	12 (22.2)	0.09
Graduate and above	66 (63.5)	38 (36.5)	
Education status of mother			
HSC and below	96 (72.7)	36 (27.3)	0.01
Graduate and above	12 (46.2)	14 (53.8)	
Occupation of fathers			
Service holder	63 (65.6)	33 (34.4)	0.45
Businessman	45 (72.6)	17 (27.4)	
Occupation of mothers			
Service holder	26 (68.4)	12 (31.6)	0.99
Housewife	82 (68.3)	38 (31.7)	
Monthly family income			
≤40000	33 (64.7)	18 (35.3)	0.61
>40000	75 (70.1)	32 (29.9)	
Types of family			
Joint	28 (60.9)	18 (39.1)	0.26
Nuclear	80 (71.4)	32 (28.6)	

*bdt- Bangladeshi Taka

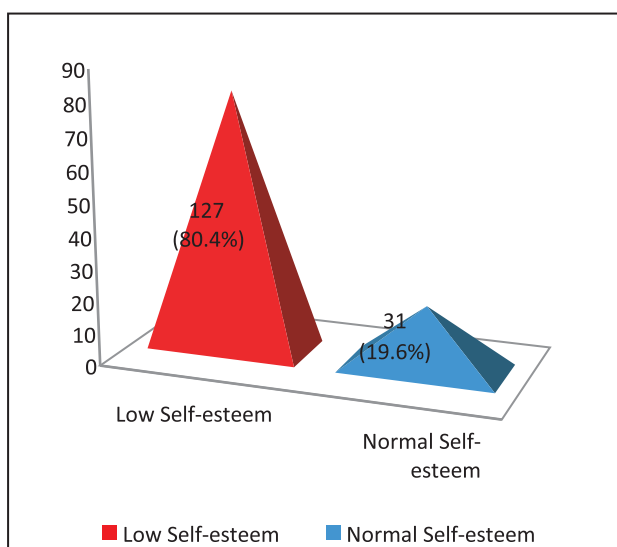


Figure-1: Distribution of the respondents according to Self-esteem score by Rosenberg self-esteem scale (n=158)

Table-II: Association between socio-demographic status and self-esteem (n=158)

Socio-demographic data		Low self-esteem, n (%)	Normal self-esteem, n (%)	p value
Sex	Male	70 (84.3)	13 (15.7)	0.18
	Female	57 (76.0)	18 (24.0)	
Religion	Islam	81 (76.4%)	25 (23.6%)	0.11
	Sanatan & others	46 (88.2%)	6 (11.8%)	
Educational qualification of father	HSC and below	44 (81.5)	10 (18.5)	0.96
	Graduate and above	83 (79.8)	21 (20.2)	
Educational qualification of mother	HSC and below	66 (80.5)	16 (19.5)	0.97
	Graduate and above	61 (80.3)	15 (19.7)	
Occupation of Father	Service holder	77 (80.2)	19 (19.8)	0.94
	Businessman	50 (80.6)	12 (19.4)	
Occupation of mother	Service holder	32 (84.2)	6 (15.8)	0.65
	Housewife	95 (79.2)	25 (20.8)	
Family income (*bdt/month)	<40000	41 (80.4)	10 (19.6)	0.99
	>40000	86 (80.3)	21 (19.7)	
Types of family	Joint	40 (87.0)	6 (13.0)	0.18
	Nuclear	87 (77.7)	25 (22.3)	

*bdt- Bangladeshi Taka

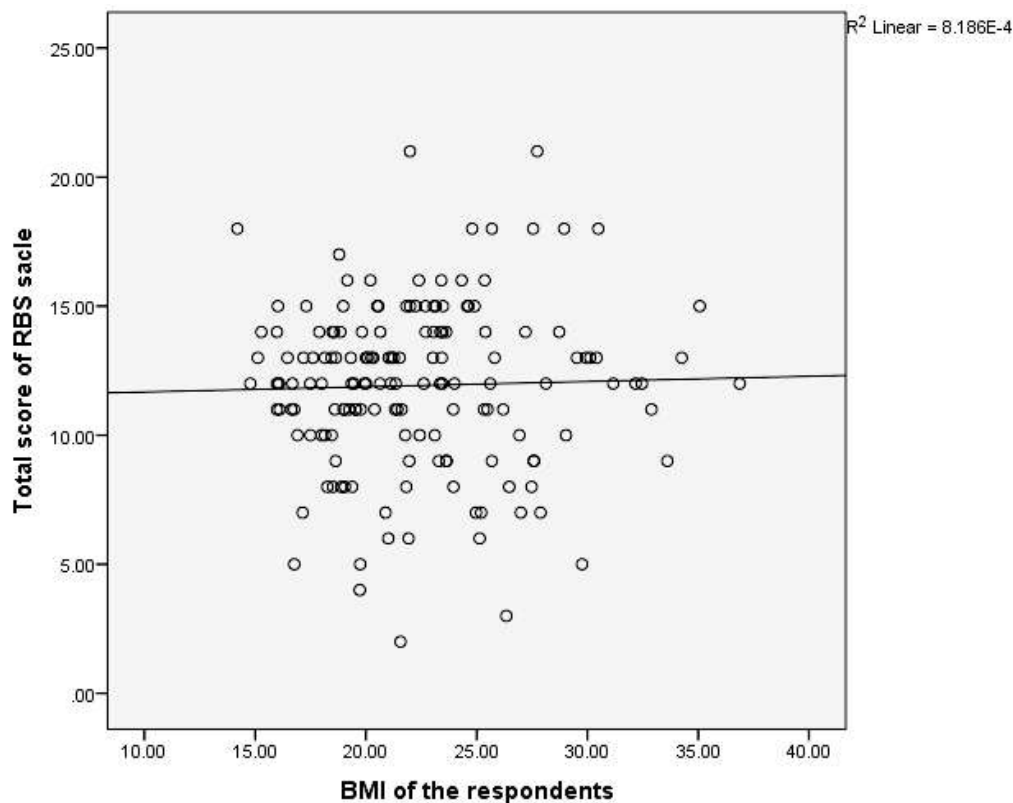


Figure-2: Pearson Correlation between total score of Rosenberg self-esteem scale and BMI ($n=158$, $r=.029$, $p=.721$)

DISCUSSION

This descriptive cross-sectional study was aimed to assess the relationship between body mass index and self-esteem and also finding out the relationship between these two variables with the respondents socio-demographic variables. This study was conducted among 158 adolescents of both sexes between the ages of 14-17 years in a selected urban school in Sylhet City. Among 158 respondents, more than half (54.4%) were in the age group of 14-15 years and 45.6% were in the age group of 16-17 years. The mean age of the respondents was 15.38 ± 0.754 years. Nearly similar results were found in two different studies done in Korea and Iran where the mean age of the study population was 16.39 ± 0.90 and 16.29 ± 0.78 respectively^{13,14}.

In this study, 52.5% respondents were male and females were 47.5%. A survey of Turkish adolescents revealed a similar picture, with boys accounting for 54.4% and girls for 45.6%¹⁵. In both studies, Sabeti et al. in Iran and Makinen et al. in Finland found that the ratio of boys to girls was slightly higher^{14,16}. Alvani et al. in Iran and Furnham et al. in England, on the other

hand, discovered a distinct sex ratio^{1,17}.

Overweight and obesity were present in 50 (31.6%) of the respondents. In 2014, a countrywide epidemiological study reported that among 6-15-year-old children, 3.5% were obese, 9.5% were overweight⁸. The outcome was lower than in our study. Another study done by Gurung et. al. among adolescent school students in Belgaum city, Nepal found that the prevalence of overweight and obesity was 15.3%, which is also dissimilar to our study⁷.

There was no significant relationship between overweight and obesity with age and sex of the respondents, educational qualification of the father & occupation of the parents of the respondents, monthly family income and types of family. But overweight and obese was higher among the respondents whose mothers were highly educated (Graduate and above), which was statistically significant ($p < 0.05$). This was in contrast to the findings of Alvani et al., who found no correlation between BMI and parental educational qualifications¹. In another study, Gurung et al. discovered that BMI was significantly higher in joint families⁷. Our study also revealed that BMI was higher

in joint families than in nuclear families, but this was not statistically significant.

According to the Rosenberg self-esteem scale, low self-esteem was present in 127 (80.4%) and normal self-esteem in 31 (19.6%) of the respondents. There was no significant relationship between self-esteem and age & sex of the respondents, educational qualification & occupation of the father and mother of the respondents, monthly family income, and types of family. Sabeti et al. found a significant correlation between self-esteem and parental educational qualification which is opposite to our study¹⁴.

This study showed that there was a positive correlation between self-esteem and BMI on the Pearson Correlation analysis which was statistically non-significant. Strauss RS did not find any significant change in self-esteem among the obese participants of the study¹⁸.

Overweight and obesity did have an impact on children's quality of life and self-esteem in the study, particularly in terms of psychosocial and emotional health¹⁹. In a study by Mendiratta P et al., they found that obesity was inversely related to self-esteem²⁰. Becerra MAO et al. and Habib F et al. showed Pearson correlation that there was a significant negative correlation between Body Mass Index (BMI) and total self-esteem^{11,21}. Similarly, Makinen M et al. and Sabeti et al. found that BMI and self-esteem were significantly associated in both of their studies^{16,14}. In England, Furnham et al. found that the correlations between the weight dissatisfaction measure and self-esteem showed no significant correlation for boys but a modest positive correlation for girls¹⁷. Hesketh et al. concluded their study by stating that there was an increasingly strong association between lower self-esteem and higher BMI²². In our study, we found a positive correlation between BMI and self-esteem, though it was not statistically significant. However, Kim O et al., Canpolat et al., and Strauss RS et al. found no significant association between BMI and self-esteem in three studies, which is similar to our findings^{13,15,18}.

CONCLUSIONS

Over-weight and obesity were higher among the adolescents in this study. The study reveals that self-esteem is not associated with respondents' body mass index, and socio-demographic characteristics. But self-esteem was found to be positively related to higher BMI without any statistical significance. The proportion of adolescents with low self-esteem scores

is higher in this study. This low self-esteem score will become a burden for the family and also for the nation.

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Original Article

Suicidal Hanging Mortalities in Sylhet: A Descriptive Observational Study of Autopsy Cases

Tahmina Islam¹, Md. Shamsul Islam², Mustaque Ahmed Ruhel³, Tasnuva Aziz Munalisa⁴, Muhammad Sarwar Hussain⁵

^{1,3}Assistant Professor, Department of Forensic Medicine, Jalalabad Ragib-Rabeya Medical College, Sylhet.

²Assistant Professor, Department of Forensic Medicine, Sylhet MAG Osmani Medical College, Sylhet.

⁴Assistant Professor, Department of Forensic Medicine, Sylhet Women's Medical College, Sylhet.

⁵Lecturer, Department of Forensic Medicine, Jalalabad Ragib-Rabeya Medical College, Sylhet.

ABSTRACT

Death due to hanging is one of the most common methods of suicide in developing countries. It is one of the major causes of mortality, especially among young women in our country. This is a descriptive observational study based on autopsy reports conducted between the periods of January 2016 to December 2017 in the department of Forensic Medicine, Sylhet MAG Osmani Medical College. The highest number of victims (55.77%) was from the age group 10-29 years, which belongs to the younger age group and where females were predominant (54.81%). Most of the dead bodies came from (16.35%) Kotwali police station. The most common findings in the dead bodies were pale, white, hard, glistening skin and subcutaneous tissue underneath the ligature (95.67%) and cyanosis (85.58%) and the commonest cause of deaths was asphyxia (96.63%). Female and the younger age group were predominantly in high risk for suicidal ideation, suicidal attempts and committing suicide by hanging. Psychological counseling and treatment of suicidal behaviors are necessary to minimize the suicidal occurrences.

Keywords: Suicide, Hanging, Autopsy.

[Jalalabad Med J 2021; 18 (1): 18-21]

INTRODUCTION

Suicide is expected to be a major public health concern worldwide¹. Risk factors such as psychiatric disorders (Depression, bipolar disorder, post-traumatic stress disorder, and so on), social (Socioeconomic instability, poor family relationships, and so on), and biological (Sexual assaults, rapes, and so on) are eliciting suicidal behaviors in all age groups, particularly in young

Address of Correspondence:

Dr. Tahmina Islam, Assistant Professor, Department of Forensic Medicine, Jalalabad Ragib-Rabeya Medical College, Sylhet, Mobile: 01733769138, E-mail: dr.tahminaislam11@gmail.com

people². A good number of people die each year by suicide, making it one of the 10 leading causes of death in the world, accounting for more than one million deaths each year³. Nearly 80% of suicidal deaths occur at a young age, within 30 years of life⁴.

Hanging (Self suspension) is a form of asphyxial death in which the body is suspended by a ligature from above that constricts the neck and prevents the entry of air into the lungs. The constricting force is the weight of the body. According to the degree of suspension, hanging may be complete or partial. When the body is completely suspended without any part of the body touching the ground, it is called "complete hanging",

and on the other hand, when some part of the body touches the ground, it is called “partial hanging”⁵. The common causes of death due to hanging are asphyxia, venous congestion, cerebral ischaemia, cerebral anemia, shock, fracture or dislocation of the cervical vertebrae etc^{6,7}. The aim of this study was to find out the autopsy findings and causes of death among suicidal hanging cases in Sylhet.

MATERIALS AND METHODS

This was a descriptive observational study based on autopsy reports conducted in the department of Forensic Medicine, Sylhet MAG Osmani Medical College, Sylhet, Bangladesh. The study period was January 2016 to December 2017. Data was collected from a computerized registrar book in the department of Forensic Medicine. All medico-legal cases referred to by 17 different police stations located in the Sylhet district were reviewed. After reviewing all autopsy reports, 208 cases of suicidal hanging deaths were enrolled in the study. Data related to socio-demographic characteristics, autopsy findings and causes of death from the autopsy examination reports were collected. The data analysis was carried out manually and presented with frequency tables and charts.

RESULTS

A total of 208 suicidal hanging cases were enrolled in the study. Among them, males were 45.19% and females were 54.81% (Figure-1). Figure-2 illuminated the distribution of the victims' age group. The highest number of the victims (55.77%) was from the age group 10-29 years, which belonged to the younger age group and followed by 21.63% from 40-49 years age group, 10.58% from 30-39 years age group and 7.21% from 60 years of age. Figure-3 portrays the locality of the victims. The most of the victims were outside of Sylhet district (12.02%), Kotwali (11.06%) and Gowainghat (10.58%). Table-I interpreted the distribution of autopsy findings of the cases. The most common findings were skin and subcutaneous tissue underneath the ligature mark found to be pale, white, hard, glistening (95.67%) and cyanosis (85.58%). The most common autopsy finding of the causes of death was asphyxia (96.63%) followed by asphyxia and apoplexy combined (8.17%), delayed complications (5.77%) and one case of vagal shock (0.48%) (Figure-4).

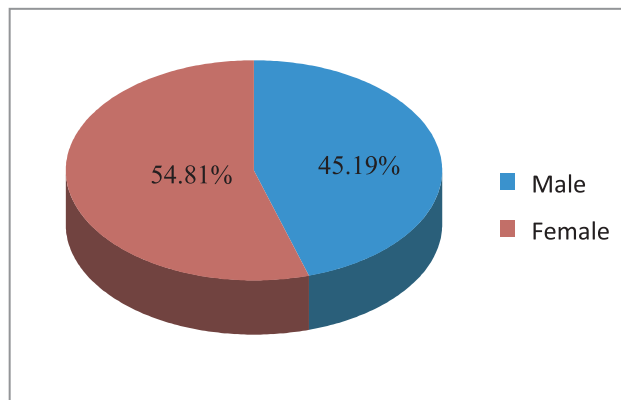


Figure-1: Distribution of the sex of the victims (N=208)

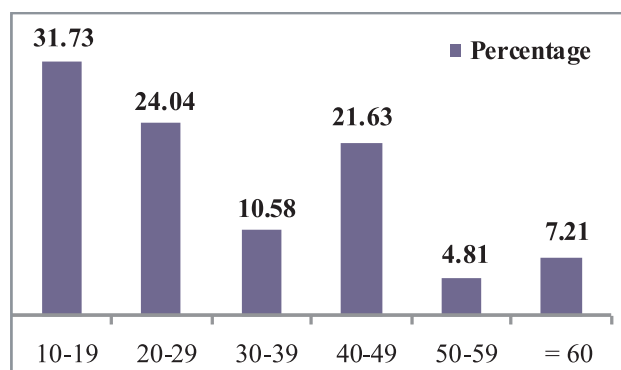


Figure-2: Distribution of the age group of victims (n=208).

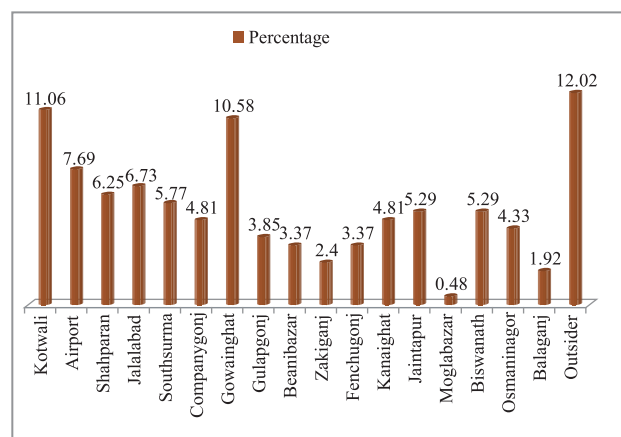
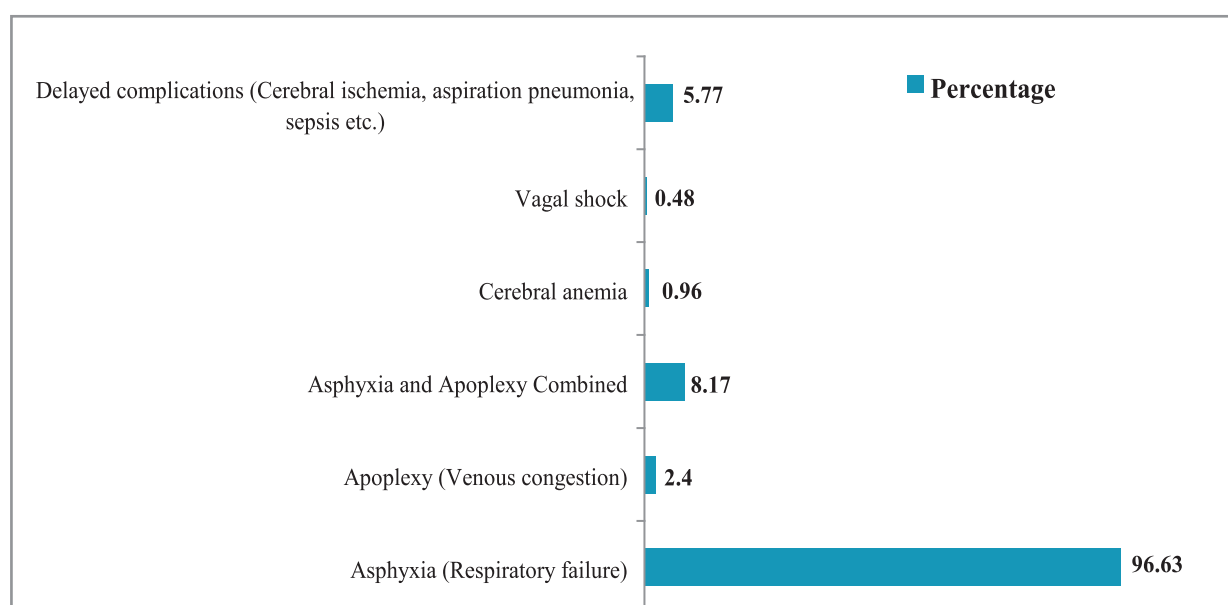


Figure-3: Distribution of the victims' locality (n=208)

Table-I: Distribution of autopsy findings (n=208).

Autopsy Findings	Frequency*	Percentage*
Skin and subcutaneous tissue underneath the ligature mark found pale, white, hard, glistening	199	95.67
Cyanosis	178	85.58
Marks of dribbling of saliva	101	48.56
Subconjunctival petechial haemorrhage	81	38.94
Tongue bite	32	15.38
Injury to subcutaneous tissue underneath the ligature mark	23	11.06
Injury to the neck muscles	05	2.40
Post mortem artifacts	15	7.21

*Multiple findings were found in case

**Figure-4: Causes of death (n=208).**

DISCUSSION

This was a descriptive observational study that was carried out in the department of Forensic Medicine, Sylhet MAG Osmani Medical College, Sylhet, Bangladesh. A total of 208 suicidal hanging cases were enrolled. In this study, suicidal death occurred in all age groups, but the highest number of the victims (55.77%) was from the young age group (10-29 years). Similar findings were found in the studies conducted in Bangladesh by Hossain et al. and Das et al., respectively^{4,8}. In the World Health Organization (WHO) preventing suicide report, it is found that suicide occurs throughout the lifespan but is predominant among 15-29 year olds, which is the second leading cause of death globally⁹. Suicidal

deaths by hanging were more common in females (54.81%) than in males (45.19%) during the autopsy report analysis. Das et al. also revealed that females are more vulnerable to committing suicide than males⁸. The majority of victims' localities were in rural areas. A study in Pakistan found that most of the victims who tried or committed suicide lived in urban areas, which is dissimilar to our study¹⁰.

Regarding the distribution of autopsy findings of the victims, the most common autopsy findings were skin and subcutaneous tissue underneath the ligature mark, which were found to be pale, white, hard, glistening (95.67%) and cyanosis (85.58%), which is similar to the studies done by Rao et al. and Rahman et al^{11,12}. The most common cause of death in post mortem

findings was asphyxia (96.63%).

Other important findings were asphyxia & apoplexy combined (8.17%) and one case of vagal shock. Rao et al. and Rahman et al. reported almost similar results in their studies^{11,12}. Throughout the postmortem report's analysis, it has been observed that pale, white, hard, glistening skin and subcutaneous tissue underneath the ligature marks and cyanosis were common autopsy findings, and asphyxia (Respiratory failure) was a common cause of death in the suicidal hanging death victims.

CONCLUSION

Most of the victims are female rather than male, and the younger age group is predominantly at high risk for suicidal ideation, suicidal attempts, and committing suicide by hanging. It does indeed improve mental health status and remove suicidal ideation. In terms of management, proper treatment and rehabilitation of suicidal attempted victims are imperative. If needed, they should be referred to a psychotherapist or rehabilitation centers for psychotherapy or medication. Familial support also plays a vital role in preventing this.

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Case Report

Complete Labial Adhesion of a Young Pubertal Girl: A Case Report

Muhammed Foysol Ahmed¹, Mohammed Abdul Momin², Md Tayef Rahman³, Humaira Islam Tuli⁴

¹ Assistant Professor, Department of Paediatric Surgery, Jalalabad Ragib-Rabeya Medical College, Sylhet.

² Associate Professor, Department of Paediatric Surgery, Jalalabad Ragib-Rabeya Medical College, Sylhet

^{3,4}IMO, Department of Paediatric Surgery, Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet.

ABSTRACT

Due to the abundance of estrogen, labial adhesion is extremely rare at reproductive age. Herein we present a case of complete labial adhesion with acute retention of urine of a 13-year-old virgin girl secondary to vulval trauma. Her labia were fused completely in the midline, starting from the posterior fourchette covering the clitoral hood. Surgery was done under general anaesthesia and the fused labia were released. Postoperative follow up was uneventful.

Keywords: Labial Adhesion, Labia Minora, Estrogen.

[Jalalabad Med J 2021; 18 (1): 22-25]

INTRODUCTION

Labial adhesion is defined as either partial or complete adherence or fusion of the labia minora in the midline¹. It is most common in infants and pre-pubertal girls and is usually associated with low estrogen levels². In reproductive age, it is extremely rare due to abundance of estrogen. Vaginal inflammation, irritation, hypoenestrogenism, local trauma, lack of sexual activity, female circumcision, vaginal lacerations and recurrent urinary tract infections have previously been identified as the contributing factors for labial adhesion in women of reproductive age^{1,3}. Furthermore, labial adhesions could be idiopathic, without any evidence of the above⁴. The majority of the cases are asymptomatic. Rarely, they may present with urinary incontinence, urinary

tract infection, vaginitis, hematuria, dysuria or dyspareunia^{1,2}. We describe a case of complete labial adhesion in an adolescent girl who presented with acute retention of urine and its management.

CASE REPORT

A 13-year-old virgin girl was admitted to the Paediatric Surgery ward with lower abdominal pain, abdominal distension and retention of urine. She had been unable to urinate in the previous 12 hours. She had H/O trauma to the vestibule one and a half years ago, which was managed conservatively. Since then, she has been suffering from urinary symptoms in the form of a burning sensation, frequency and poor flow. Her menstrual cycle has been regular since menarche (At the age of 12 years old), but complains of decreased flow during menses and pain in her lower abdomen. There was no history of surgical intervention, sexual abuse or no complaints of irritation or allergic rash in the labia. The patient was treated as an UTI several

Address of Correspondence:

Dr. Muhammed Foysol Ahmed, Assistant Professor, Department of Paediatric Surgery, Jalalabad Ragib-Rabeya Medical College, Sylhet. Mobile: 01712233401, E-mail: drfoysol77@gmail.com

times by paediatricians and medicine specialists. On examination, she had normal secondary sexual characteristics. Examination of the genital area showed complete adhesion of the labia minora in the midline starting from the posterior fourchette, covering the clitoral hood completely. Urethral and vaginal openings were not visualised (Figure-1). The perineum was normal. Dermatological examination of the vulva was unremarkable. Her lower abdomen was distended, tender. The urinary bladder was palpable. DRE revealed normal findings. Initially, urethral catheterization was tried but failed due to extensive adhesion of the labia and pain. Urinary retention was relieved by supra-pubic puncture. Pelvic ultrasound and laboratory work-up were normal. Surgery was done under general anaesthesia (G/A). A small space was obtained from the weakest point of the adhesion with a small artery forceps through which whitish vaginal secretions came out. The labia minora were completely separated along the translucent line of adhesion by electrocautery. The vaginal opening and the urethral opening were identified. A urethral catheter was kept in situ. Released edges were repaired by interrupted suture with absorbable suture materials (Figure-2, Figure-3). The postoperative follow-up was uneventful and the patient was discharged on the 3rd postoperative day. Patient was advised to keep the wound clean and application of steroid based cream twice daily for 6 weeks. The patient was followed up on the 15th postoperative day and in the 2nd month and there were no symptoms or signs of complications.



Figure-1: Complete fusion of the labia minora with obliteration of the vaginal introitus and urethral meatus.



Figure-2: Per-operative view of sutured edges of released adhesions.



Figure-3: Post-operative view of sutured edges of released adhesions.

DISCUSSION

Labial adhesion, also known as labial/ vulvar agglutination, fused labia or vulvar fusion. It is a common paediatric gynaecological problem encountered in general paediatric practice and is associated with low estrogen states^{2,5}. Labial adhesions can affect 0.6%-5% of babies aged 3 months to 6 years, with a peak incidence of 13-23 months⁶. But this is a rare clinical entity in adolescents. Only a few cases have been reported in the literature, and these cases occurred predominantly in post-menopausal women rather than at reproductive age^{3,7,8}.

The exact aetiology of labial adhesions is unknown but is thought to develop secondary to vulvar inflammation in a low estrogen environment. This is why it is uncommon in the immediate newborn period (A period of maternal estrogen exposure) and in post-pubertal females (When women make their own endogenous estrogen^{2,5}). The outer surface of the labia minora is thin, delicate and lined by squamous epithelium. Irritation and inflammation of the vulva makes the outer skin raw which then heals together in the same way as any skin cut margin heals and leads to labial adhesion.

Sexual abuse or genital trauma has also been implicated as a major causative factor in various reports on older girls. Other causative factors of labial adhesion in adults include recurrent urinary tract infections, vulvovaginitis, atopic dermatitis, herpes simplex, female circumcision, genital trauma, hypoestrogenism and lack of sexual activity^{1,3}. We can exclude hypoestrogenemia as the cause of labial adhesion in our patient with a history of regular menses, normal ovaries at ultrasound and normal gonadotrophin values. But she gave a history of genital trauma, which may be a cause of labial adhesion in the reproductive age group.

Labial adhesions are often asymptomatic and are missed easily. If asymptomatic, they may be noticed during a routine gynaecologic examination or incidentally by parents. In other cases, patients may present with symptoms of UTI such as dysuria, urinary frequency, refusal to urinate or post-void dribbling. Some patients present with symptoms of vulvovaginitis such as vulvar erythema, vulvar pruritus, vulvar pain and vaginal discharge due to pooling of urine in the vulval vestibule or vagina^{1,2,9}. In severe cases, labial adhesions can cause complete obstruction of the urethra, leading to urinary retention¹⁰. Our patient presented with symptoms of recurrent UTI and acute

retention of urine.

Diagnosis of labial adhesion is made by visual inspection of the external genitalia. Usually, the labia start to fuse at the bottom (Posterior fourchette) and work up towards the clitoris. The adhesion will appear as a white/ gray midline raphe between the labia minora. The degree of the adhesion varies from a small portion to the entire length of the labia minora, and the vaginal opening may be partially or completely occluded. Rarely, the urethra is obscured. Even with extensive labial adhesions, the inability to void is rare. In our case, the urethral meatus was obscured and the patient was unable to urinate.

Treatment depends on the symptoms and severity of adhesions. If there is no complaint or complication, the adhesions do not need treatment. Assurance of the parents and maintenance of hygiene is enough. Most patients will have spontaneous resolution of their adhesions at puberty when they begin to produce endogenous estrogen.

In mild forms of adhesion, topical estrogen therapy is usually sufficient. Application of conjugated estrogen cream or estradiol vaginal cream (0.01%) twice daily for four to six weeks separates as many as 50% - 89% cases. An alternative to estrogen therapy is topical betamethasone (0.05%). Steroids can be considered in cases of recurrent adhesions or patients with failed estrogen therapy. Transient side effects include erythema, pruritus, folliculitis, skin atrophy and fine hair growth⁸.

Patients with dense, fibrous adhesions with significant symptoms (Such as urinary retention) or cases of failed medical therapy should be managed by manual lysis under tropical anaesthesia. Surgical adhesionlysis under G/A may be needed in 5% to 11% of cases⁸. After the procedure, it is necessary to apply topical estrogen cream to prevent recurrence. In the present case, because of the tight adhesion of the labia, manual separation was not possible and the ultimate choice of treatment was surgical intervention under G/A.

The recurrence rate of labial adhesions is 11-14%¹¹. Risk factors for recurrent adhesions are younger age, thicker adhesions, poor vulvar hygiene, recurrent genital infections, trauma and dermatologic conditions. Recurrent adhesions are managed in the same manner as initial adhesions.

CONCLUSION

Labial fusion is a rare event in pubertal women. A thorough clinical examination is enough for diagnosis. Optimizing vulvar hygiene and parents/ patient education are important to reduce the risk of recurrence.

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Case Report

Primary Pulmonary Tuberculosis in Infancy- A Case Report

Naznin Akther¹, Md. Tarek Azad², Jahan Ahmed Porag³, Tanjina Masuma⁴, Habiba Jamila Khan⁵, Priyanka Saha⁶

¹Assistant Professor, Department of Paediatrics, Jalalabad Ragib-Rabeya Medical College, Sylhet.

²Professor & Head, Department of Paediatrics, Jalalabad Ragib-Rabeya Medical College, Sylhet.

³RMO, Sylhet Maa O Shishu Hospital.

⁴Medical officer, Sylhet Maa O Shishu Hospital.

⁵Registrar, Department of Paediatrics, Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet.

⁶Indoor medical officer, Department of Paediatrics, Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet.

ABSTRACT

Tuberculosis (TB) remains a challenge because severe forms occur most frequently in children under five years and diagnosis is complex. As early diagnosis and treatment appear to prevent complications and reduce mortality, paediatricians should be alert for tuberculosis in infants with an atypical picture suggestive of infection. We report on a 3-and-a-half-month old male infant, living in Sylhet, who presented with a fever and non-productive cough, treated as pneumonia without clinical improvement, and diagnosed later on as primary tuberculosis. This case highlights the rare presentation of tuberculosis in infancy.

Keywords: Primary tuberculosis, Infant.

[Jalalabad Med J 2021; 18 (1): 26-30]

INTRODUCTION

The World Health Organization (WHO) estimates that 1 million children worldwide (<15 years old) are currently infected with tuberculosis (TB), with more than 136,000 dying each year^{1,2}. Every day, up to 200 children die from TB, though it is a preventable and curable disease. Over half a million children fall ill with TB each year and struggle with treatment². It has been observed that 15-20% of all TB cases in high-burden TB countries are among children, whereas 2-7% of all TB cases are estimated to be among children in low-burden TB countries³.

TB remains a major public health problem in

Bangladesh. Although there is no estimate on the prevalence of childhood TB, it is believed that childhood TB is severely under-diagnosed⁴.

TB in children commonly presents with fever and failure to thrive, but these are non-specific. In most cases, children with symptomatic TB develop chronic unremitting symptoms (Symptoms persist for >2 weeks even after appropriate treatment). In general, TB is a slow-developing chronic disease, but it may present acutely in young and HIV-infected children. However, TB in children can manifest in various ways in different age groups, like pneumonia in <1 year of age, with a chronic cough in 1-9 years of age and in adolescents it is presented as in adults¹.

The diagnosis of tuberculosis is more difficult in children, especially when symptoms are often subtle, chest images are less specific, standard sputum samples can rarely be collected, and children have lower bacterial loads, making mycobacterial recovery more difficult. Infants and young children are at much higher

Address of Correspondence:

Dr. Naznin Akther, Assistant Professor, Department of Paediatrics, Jalalabad Ragib-Rabeya Medical College, Sylhet, Mobile: +8801717414470, E-mail: drnazninakter27@gmail.com

risk of developing disseminated infection after primary tuberculosis, particularly tubercular meningitis, which has the highest mortality rate. Child-to-child transmission is rare because of lower bacterial loads. Children usually acquire infections from infected parents or household contacts, so family and close contacts should always be screened. In the absence of a known adult source case, the diagnosis of tuberculosis in children can be difficult⁵.

Here we report an infant with pulmonary TB without a contact history, initially diagnosed and treated as pneumonia.

CASE REPORT

A 3½ month old non-immunized male baby, the only issue of his non-consanguineous parents, was admitted to a private hospital on 19/11/2020 with complaints of fever and cough for 1 month and respiratory distress for 2 days. The fever was initially low grade but became high grade and intermittent in nature for the last 8 days. The cough was non-productive in nature with no diurnal variation. He had no history of vomiting, convulsions, weight loss, altered bowel or bladder habits, and contact with TB patients, or travelling to malaria or kala-azar endemic zones. He was diagnosed with pneumonia and treated with several courses of oral and injectable antibiotics without significant improvement. On examination, he was found febrile (Temperature 103⁰F), mildly pale, BCG mark was absent, no lymphadenopathy, weight 4.5 kg, which lies just below the 5th centile, R/R was 52 breaths/min, chest indrawing was present, trachea was centrally placed, percussion note was dull in the right 3rd and 4th intercostal space (ICS) in the midclavicular and midscapular line, breath sound was bronchial in the right 3rd & 4th ICS with no added sound. Other systemic examinations revealed no abnormalities. His CBC report was normal, ESR was 24 mm in the 1st hour, CRP was 15 mg/l. CXR showed patchy opacities involving the major portion of the right lung. Treatment started with oxygen inhalation, antipyretic and empirical broad spectrum injectable antibiotics. As there were no clinical improvements, HRCT for the chest was done, which showed a right-sided cavitory lesion, collapse, consolidation and minimal pleural effusion suggestive of tuberculosis. After that, gastric lavage for Gene Xpart and HIV screening tests were done. Gene Xpert was found to be positive for MTB. The HIV screening test was negative. Then anti TB drugs (3FDC+Ethambutol) were started and the patient showed gradual clinical improvement and he was discharged with anti TB drugs for 6 months. He

followed up on the 7th day after discharge and within this time, his clinical symptoms completely disappeared.



Figure-1: The baby presented with Recurrent RTI

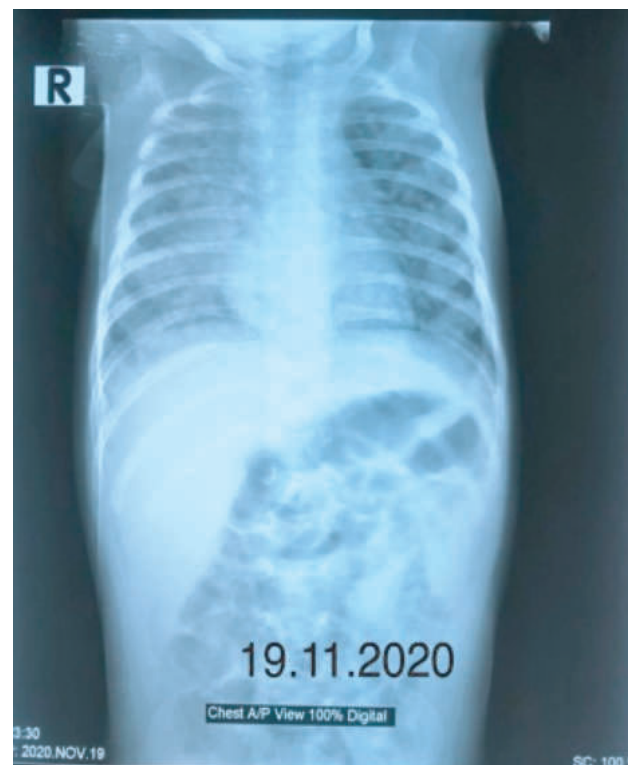


Figure-2: CXR showing right sided patchy opacities



Figure-3: HRCT of chest was suggestive for TB.

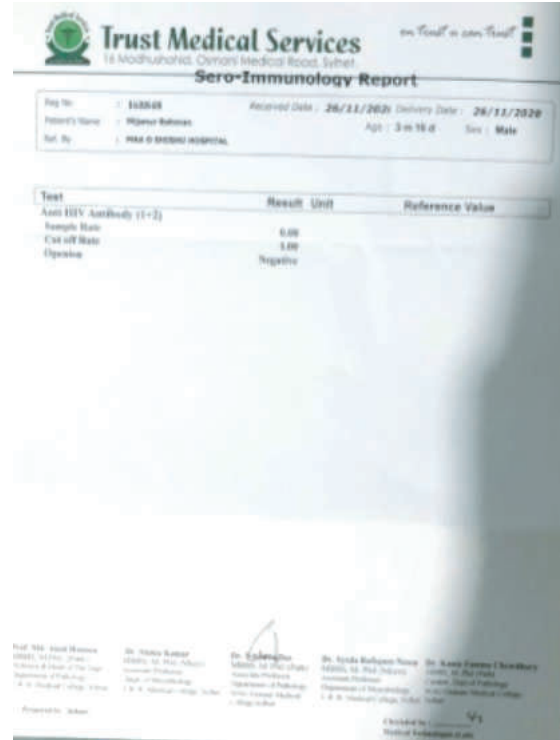


Figure-5: HIV screening report

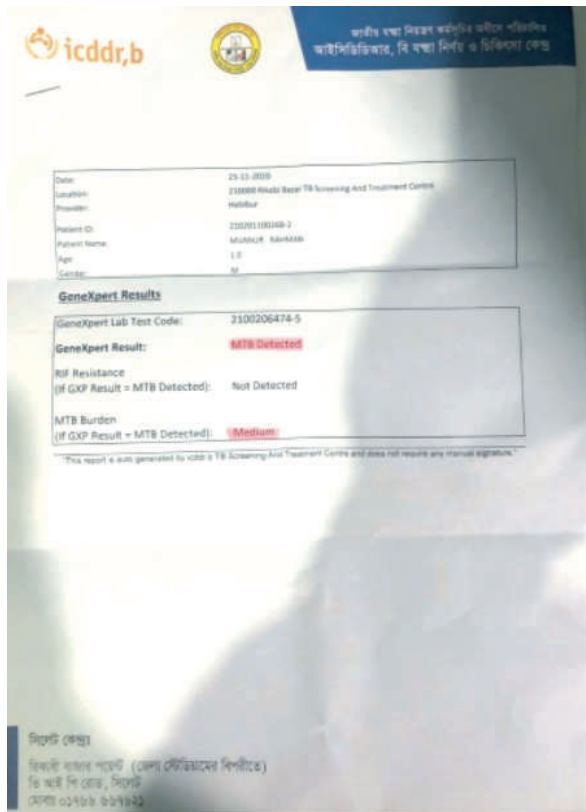


Figure-4: Gastric lavage for Gene Xpart report showing positive for MTB.



Figure-6: Follow up CXR after getting Anti-TB drugs- showing improvement.

DISCUSSION

Most pulmonary tuberculosis cases seen in infants are primary tuberculosis. The primary infection begins with the deposition of infected droplets in the lung alveoli, followed by parenchymal inflammation⁶. The initial inflammation produces localized alveolar consolidation, which is the primary focus. This may, although rarely, progress to involve a segment or an entire lobe and usually is not visible on chest radiographs^{6,7}. Infection then spreads to the central lymph nodes from the primary focus via draining lymphatic vessels (Appearing as a linear interstitial pattern on chest radiographs) and results in regional lymphadenopathy. Together, the primary focus and the enlarged lymph nodes that drain it are called the Ranke complex⁶⁻⁸. In most cases, the mild parenchymal lesions and lymphadenopathy resolve spontaneously. Caseation necrosis of the regional lymph nodes progresses, and the enlarged nodes may compress the regional bronchi and cause bronchial narrowing, obstruction, and emphysema^{6,7}.

Clinical diagnosis of tuberculosis in an infant is challenging because infants may present with non-specific findings such as reduced playfulness, fatigue, wheezing, non-remitting cough, failure-to-thrive or lymphadenopathy. A prerequisite for the early diagnosis of TB in childhood is a high index of suspicion. So, children with fever of unknown origin, failure to thrive, significant weight loss, severe malnutrition and/or other immunosuppressive conditions, unexplained lymphadenopathy should be evaluated for TB. Besides this, any child with pneumonia, pleural effusion or a cavitary or mass lesion in the lung that does not improve with standard antibacterial therapy should also be evaluated for tuberculosis¹.

The case we reported here was presented with pneumonia like symptoms and did not improve with standard antibacterial therapy. Elie Choueiry et al.⁹ also reported a case of a 5-months old female infant who presented first with a non-productive cough, treated as pneumonia without clinical improvement and diagnosed later as primary TB. Rob van Hest et al.¹⁰ reported an 8-months old baby with cavitating pulmonary TB as well as cerebral tuberculoma, which was recognized after a diagnostic delay of >3 month. This baby presented with the features of a recurrent respiratory tract infection and initially responded well to conventional antibiotic therapy.

TST has been the most utilized exam to evaluate patients suspected of having TB. The CXR pattern can show hilar adenopathy, hyperinsulflation, atelectasis,

bronchiectasis, alveolar consolidation, pleural fluid with or without empyema and rarely, cavitation. The HRCT chest shows more details than the CXR. In children, the best way to isolate *Mycobacterium tuberculosis* (Mtb) is from gastric aspirate culture, although its positivity is only around 30%. Bronchoscopy followed by isolation of Mtb in bronchial secretion obtained from patients suspected to have TB is less sensitive than gastric contents. However, bronchoscopy is an important method for diagnosing endobronchial TB and/or opportunistic infections, in patients with immunodeficiency¹¹. Gene-Xpert, a newer WHO-approved technique, can identify Mtb DNA in gastric aspirate, sputum, or pleural fluid in 2 hours¹.

The CXR of our patient showed patchy opacities involving the major portion of the right lung. HRCT chest showed a right-sided cavitary lesion, collapse, consolidation and minimal pleural effusion and gastric lavage for Gene X-pert was positive for Mtb. TST was not done. In the case reported by Elie Choueiry et al.⁹ Mantoux's skin test (5TU PPD) was positive and chest radiography revealed parahilar and left lower lobe lung condensation. HRCT chest revealed a large left hilar lymphadenopathy with central necrosis and multiple mediastinal lymph nodes in the paratracheobronchial region. Gastric fluid aspirates showed identification of *Mycobacterium tuberculosis* through Ziehl-Neelsen acid-fast stain and culture on Lowenstein-Jensen media. The case reported by Rob van Hest et al.¹⁰ in which a tuberculin skin test was not performed. The CXR showed diffuse fine patchy and streaky opacities in the right lung. In the left lung, multiple cavities were present. Bronchoscopy was performed and the obtained bronchial alveolar lavage (BAL) which was positive for *Mycobacterium tuberculosis*.

CONCLUSION

The morbidity and mortality of TB is at its highest in infancy. The diagnosis of tuberculosis in infancy is also very difficult due to its atypical presentation. Early suspicion and diagnosis of TB is very important as early treatment can prevent complications and reduce mortality.

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Miscellaneous

Campus News

Postgraduate Training Recognized by BCPS

A high powered inspection team consisting of nine members from the Bangladesh College of Physicians and Surgeons (BCPS) Dhaka, headed by Professor Md. Monimul Haque, visited Jalalabad Ragib-Rabeya Medical College and Hospital on 3rd March 2014. On the recommendations of the inspection team, the council of the Bangladesh College of Physicians and Surgeons (BCPS) has extended the tenure of recognition of training imparted to the departments of Medicine, Surgery, Paediatrics, Obstetrics & Gynaecology, Physical Medicine & Rehabilitation, Dermatology & Venerology and Cardiology to the resident doctors provisionally for a period of five years. The council has granted recognition to the department of Radiology & Imaging for imparting training to resident doctors provisionally for a period of five years with effect from 06-6-2013. The training will be accepted for appearing in the FCPS, MD, MS Part-II and diploma examinations in these specialties. The postgraduate training imparted to the departments of Ophthalmology, Otolaryngology, Psychiatry, Pathology (Histopathology) and Orthopaedic Surgery was recognized by the Bangladesh College of Physicians and Surgeons (BCPS) earlier and to be continued.

Programmes

- **Bangladesh Poribesh Andolon (BAPA)** donated 2000-piece mask to the Jalalabad Ragib-Rabeya Medical College Hospital. Mr. Sharif Jamil, the Central General Secretary of BAPA, handed over these masks to hospital authorities. Prof. Md. Abed Hossain, Principal, Jalalabad Ragib-Rabeya Medical College, Prof. A. K. M. Daud, Vice Principal, Mr. Abdul Karim Kim, General Secretary, BAPA, Sylhet branch, Prof. Dr. Jahirul Haque Shakil, Teacher of SUST and life member of BAPA, and social worker Fakir Sohel were present on this occasion. The authority of Jalalabad Ragib-Rabeya Medical College Hospital expressed gratitude to the donor.
- **A high-powered inspection team from Sylhet Medical University**, headed by Prof. Dr. Osul Ahmed Chowdhury, visited Jalalabad Ragib-Rabeya Medical College Hospital on November 3rd, 2020. Prof. Dr. Dilip Kumar Bhowmik, head of Obs and Gynae, Parkview Medical College, Prof. Dr. Nobo Kumar Saha, Department of Pathology, SOMC, Dr. Syed Anowarul Haque, Associate Professor of Microbiology, SOMC, and Mr. Maidul Islam Chowdhury, Assistant College Inspector, Sylhet Medical University, were the other members of the team. Prof. Dr. Md. Abed Hossain, Principal, Jalalabad Ragib-Rabeya Medical College along with Vice Principal, Prof. Dr. AKM Daud and Director of the Hospital, Prof. Dr. Md. Tarek Azad, welcomed the inspection team. The entire team toured the hospital and college sections, and they were grateful for the opportunity to see the standard of medical equipment, the percentage of admitted patients, and, overall, the conducive environment of college education.
- **The 14th death anniversary of Begum Rabeya Khatun Chowdhury**, co-founder of Jalalabad Ragib-Rabeya Medical College Hospital was observed on the campus on December 12th, 2020. In the morning, Prof. Md. Abed Hossain, Honourable Principal, Jalalabad Ragib-Rabeya Medical College, and Prof. Md. Tarek Azad, Director of the hospital, visited her grave and laid a wreath at the grave on behalf of the teachers, students and employees of the college. The wrapper of a memorandum book titled “একাকী আলোর পথে হেঁটে যাওয়া এক অকৃতভয় সত্ত্বা” published on behalf of Jalalabad Ragib-Rabeya Medical College Hospital was then unveiled. At 12.00 pm on that day, a condolence meeting and dua mahfil were arranged at the lecture gallery. Danobir Dr. Syed Ragib Ali, Founder Chairman of the Governing Body of the institute, was present there as the chief guest. The program was presided over by Prof. Md. Abed Hossain, Honourable Principal, Jalalabad Ragib-Rabeya Medical College. At this meeting, chief guest Dr. Syed Ragib Ali, Prof. Md. Abed Hossain, Prof. Dr. Md. Tarek Azad, Prof. Dr. Mohammed Abdul Hye and Dr. Md. Fazlul Haque spoke on various aspects of the late Begum Rabeya Khatun Chowdhury’s working life. The dua was conducted by the religious teacher of this institution,

Mawlana Abul Boshor Md. Lutfur Rahman. All the teachers, students, and staff of Jalalabad Ragib-Rabeya Medical College and Begum Rabeya Khatun Chowdhury Nursing College were present on the occasion.

- **Victory Day was celebrated on December 16, 2020**, with the hoisting of the national flag on campus, a rally up to Sylhet's Central Shaheed Minar, free outdoor services, and the illumination of hospital and college buildings. Under the leadership of Prof. Md. Abed Hossain, Honorable Principal, Jalalabad Ragib-Rabeya Medical College, wreaths were laid at the Shaheed Minar at 10.00 am. On the occasion, Vice Principal Prof. AKM Daud, and the senior teachers and students of this institution were present.



Instructions for Author(s)

Manuscripts on clinical, review, experimental and historical topics pertinent to medical sciences are accepted for the publication in this journal. The papers are accepted for the publication with an understanding that they are solely submitted for this journal. The statements, comments or opinions expressed in the papers are exclusively of author(s), not of editor(s) or publisher. The manuscripts are to be prepared as described in following instructions. 3 (three) hard copies are to be submitted. Letters about potentially acceptable manuscripts will be sent after review process is complete. No manuscripts will be returned if not accepted for publication. In addition an electronic/digital version of the manuscript composed in MS word 98/2000 should be submitted in a diskette.

Preparation of manuscripts

Manuscripts should be typewritten, double-spaced throughout (including references and tables) on one side of good quality A4 sized paper, with margins of at least 25 mm. Each component of the manuscript should begin on a new page in the sequence of title or cover page, abstract with key words, text, acknowledgement, references, tables and legends for illustrations.

Title page will contain

- Concise and informative title of the article
- Author(s) name, highest academic degree(s).
- Name of the department(s) and institution(s).
- Address for correspondence and reprint (please include e-mail address and fax if available).

Abstract and key words

An informative abstract not more than 250 words should briefly describe the objectives, materials and methods, results and conclusion. Number of key words should not more than ten and none that are in the title.

Text should contain Introduction, Materials and Methods, Results and Discussion in sequence.

Introduction

It should briefly disclose the purpose of study. It will help the readers with the problem finding. It should be clear in nature and purpose.

Materials and Methods

Clearly it should include materials, experimental procedures, methods etc. Mention the nomenclature, source of material, equipment with manufacturer's

details in parentheses. Describe new methods in sufficient detail indicating their limitation. Established methods should be cited with authentic references. Ethical standards should be followed in reporting experiments done in human subjects. Precisely identify the dosage and route of administration, when drugs or chemicals are used. Evidence for approval by the institutional ethical committee must be supplied by the authors on demand. Measurements and data should be stated in SI unit, or if SI unit does not exist, use an internationally accepted unit. Abbreviations and acronyms should be used for widely used terms and names, which occurs consistently and frequently in the manuscript.

Results

It should be presented in logical sequence in text, tables or illustrations. Duplications of data in the tables or illustrations should be avoided. Emphasize or summarize only important observations.

Discussion

Emphasize the new and important aspects of the study and conclusion derived from them. Detail data written in introduction and other portions of text should not be repeated. The implication of results and their limitations including suggestion for future research should be included in the discussion.

References

Number the references consecutively in order mentioned in the text. Full list of reference should include all authors. Avoid using abstracts as references. References to paper accepted but not yet published should be designated as 'in press' or 'forthcoming'. Authors should obtain written permission to cite such papers as well as verification that they have been accepted for publication. Information from manuscripts submitted but not accepted should be cited as 'unpublished observations' with written permission from the source. Use the styles of example below, which are based on the formats used by US National Library of Medicine (NLM) in the Index Medicus. The title of journals should be abbreviated according to the style used in Index Medicus.

Article in journal

- List all six authors when six or less
Vega KJ, Pina I, Krevsky B. Heart transplantation in

associated with an increased risk for pancreatobiliary disease. *Ann Intern Med* 1996; 124 (11): 980-3.

As an option, if a journal carries continuous pagination throughout a volume (as many journals do) the month and issue number may be omitted.

b) More than six authors

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a) Personal author(s)

Laurence DR, Bennett PN, Brown MJ. *Clinical Pharmacology*. 8th ed. New York: Churchill Livingstone; 1997.

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C) Computer files

Haemodynamics III: The ups and downs of haemodynamics [computer program]. Version 2.2. Orlando (FL): Computerized Educational Systems; 1993.

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