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Editorial Board

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JALALABAD MEDICAL JOURNAL

Editorial

MDG Success: 'Bangladesh: A Role Model'

The Millennium Developmental Goals (MDG) was set forth in the United Nations Millennium Declaration 2000. These are a set of numerical and time-bound targets aimed to be achieved by 2015, taking 1990 as the base year. The MDGs are a set of quantified and time-bound goals marked as a strong commitment to the right to development, to peace and security, to gender equality, to eradication of many dimensions of poverty and to sustainable human development. To bring the people of lagging countries into mainstream development, the then 189 countries adopted the MDGs, having 8 goals, 21 targets and 60 indicators in 2000.

It is very encouraging to note that Bangladesh has hit most of the UN Millennium Developmental Goal's target ahead of 2015 deadline. MDG's targets like reducing poverty gap ratio, attaining gender parity at primary and secondary education, under-five mortality rate reduction, containing HIV infection with access to antiviral drugs, children under-five sleeping under insecticide treated bed nets, detection and cure rate of tuberculosis under directly observed short course (DOTs) are already met. In addition Bangladesh has made remarkable progress in the areas of poverty reduction, reducing the prevalence of underweight children, increasing enrolment at primary schools, lowering the infant mortality rate and maternal mortality ratio, improving immunization coverage and reducing the incidence of communicable diseases[1]. Bangladesh is still lagging far behind in some key target areas of environmental sustainability, sanitation, nutrition and certain aspects of gender equality and hunger in attaining the goals under MDG 6, 7 and 8[2]. However, highlighting Bangladesh's role as a model in MDG achievement, UNDP country director Pauline Tamesis said that Bangladesh has made laudable progress in various social sectors over the past few decades[3].

Bangladesh has made commendable progress in respect to eradication of poverty and hunger (Goal 1). It has sustained a GDP growth rate in excess of 6% in recent years that has played a positive role in eradicating poverty. The robust growth has been accompanied by corresponding improvements in several social indicators such as increased life expectancy and lower fertility rate despite having one of the world's highest population densities. Significant progress has been made in completion of cycle and implementation of a number of quality enhancement measures in primary education. Bangladesh has already achieved gender parity in primary and secondary enrolment (Goal 2). Promotion of gender equality and empower women (Goal 3) has already been achieved. Bangladesh is on track for MDG 4, and has made more progress in reducing neonatal deaths than most low-income countries of the world. The neonatal mortality decline in the last decade (4% per year) is higher than the regional and global average (2% and 2.1% per year respectively)[4]. The successful programs for immunization, control of diarrhoeal diseases and vitamin A supplementation are considered to be the most significant contributors to the decline in child and infant deaths along with potential effect of overall economic and social development. Despite these improvements there are challenges ahead like childhood injuries, drowning. According to Bangladesh Maternal Mortality Survey (BMMS), maternal mortality declined from 332 in 2001 to 194 in 2010, a 40% decline in 9 years. The average rate of decline from the base year has been about 3.3% per year, compared with average annual rate of reduction of 3% required for achieving the MDG target in 2015[3]. According to a 2013 survey by different UN organizations, the estimated maternal mortality rate in Bangladesh stood 170 per 100000 live births. Authorities concerned expressed hopes that the country would be able to achieve MDG 5 target (143.5) on time[5]. Bangladesh has performed well in halting communicable diseases under goal 6. There was a significant improvement in the reduction of maternal deaths in the country over the last few years. Bangladesh is lagging in achieving goal 7. The area having tree cover is much lower than the target set for 2015. Develop a global partnership for development (Goal 8) needs attention to be achieved.

According to general economic division (GED)'s of the Planning Commission of Government of Bangladesh the seventh report on MDG, Bangladesh has made success in lowering child low-weight problem and maternal mortality. It has progressed in ensuing primary education, expansion of vaccination campaign and bridling contagious diseases. The report however identified some areas which require more attention from policymakers. These areas include bringing down hunger, poverty, creating jobs and ensuing more quality jobs for women, enhancing the rate of primary school completion and informal education, ensuing more health workers during pregnancy and information on AIDS and expanding forests, increasing access to and coverage of information and communication technology.

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JALALABAD MEDICAL JOURNAL

Original Article

A Comparative Study of Coronary Angiographic (CAG) Findings Between Diabetic and Nondiabetic Patients

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ABSTRACT

Patients with diabetes mellitus have a higher prevalence of atherosclerotic heart disease and a higher incidence of myocardial infarction than the general population. Diabetic patients also have several haematologic, metabolic abnormalities not present in their nondiabetic counterparts that may predispose them to formation of morphologically complex plaques. This study was done in the Department of Cardiology North East Medical College Hospital from August 2008 to September 2009 to see the atherosclerotic heart diseases in diabetic and nondiabetic patients. Percutaneous coronary angiography (CAG) was performed in 120 consecutive patients with suggestive of ischaemic chest pain. The population consisted of 45 (37.5%) diabetic and 75 (62.5%) nondiabetic patients. We observed positive angiographic lesion among both groups comparing site & number of vessel(s) involved and average percentage of stenosis. The presence of coronary risk factors was not significantly different between the two populations. Total positive angiographic lesion was 79 (65.83%) in both groups. Among the diabetes mellitus patients, positive CAG finding were in 37 (82.22%) and the lesions were single vessel disease (SVD) in 10 (27.02%), double vessel disease (DVD) in 15 (40.54%), triple vessel disease (TVD) in 12 (32.43%), diffuse lesions in 4 (10.8%) and average vessel stenosis was 83.63%. On the other hand, total positive angiographic lesion was 42 (56%) in nondiabetic group; among them single vessel disease (SVD) was 14 (33.33%), double vessel disease (DVD) 17 (40.47%), triple vessel disease (TVD) 11 (26.19%). No diffuse lesions were found in nondiabetic group and average vessel stenosis was 78.03%. The results of the angiographic finding suggest that diabetic patients have a higher incidence of coronary heart diseases (CHD), DVD, TVD, diffuse lesions & marked stenosis of coronary vessel than nondiabetic patient.

Key words: *Coronary heart disease, Diabetes, Coronary angiography.*

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INTRODUCTION

Diabetes mellitus (DM) is a well-established risk factor for development of coronary artery disease (CAD)[1,2]. Coronary atherosclerosis is not only more prevalent in diabetic patients but also more severe. The reported prevalence of coronary artery disease in diabetic patients ranges from 9.5% to 55%[3,4], whereas prevalence of 1.6% to 4.1% have been observed in the general population[5,6]. Incidence of heart diseases & ischaemic heart mortality was shown to be 4 times higher in people with Type-2 DM[7]. Type-1 DM was seem to be associated with at least a 10 fold increase as compared with people without diabetes[8]. In people with DM 40%, 15%, 10% death occur due to ischaemic heart disease (IHD), other heart diseases & cerebrovascular disease (CVD) respectively[9]. Several in vivo and postmortem studies have shown that diabetic patients have more diffuse and severe coronary artery disease than the general population[1,10,11]. In addition, the relative risk of myocardial infarction (MI) is greater in diabetic patients than in the normal population[12]. The cause of this difference in the diabetic population is not well understood. But it is suggested that diabetic patients have several haematologic and metabolic abnormalities not present

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in their nondiabetic counterparts[13,14,15] that may predispose them to formation of more complex plaque. To date, very few studies, have attempted to explain these differences between diabetic and nondiabetic patients in our country. Thus this prospective interventional study was designed to find out the morphological pattern of coronary lesion in patients with diabetes mellitus and to compare with nondiabetic patients in a peripheral teaching institute of Bangladesh.

MATERIALS AND METHODS

In this prospective interventional study one hundred twenty cases of males and females, who presented in the Department of Cardiology, North East Medical College Hospital (NEMCH), Sylhet, from August 2008 to September 2009, were included. Patients were selected on the basis of inclusion and exclusion criteria as mentioned below. The study was approved by the Ethical Review Committee of the Medical College.

1. Study population:

a) Inclusion criteria:

All patients clinically diagnosed or documented to have CAD, who required coronary angiography (CAG) was taken as study population. Informed consent was taken from all patients.

b) The grouping of study population:

The study population was divided into two groups as follows:

Study group-I: Patients presented with features of IHD & having DM (DM group).

Study group-II: Patients presented with features of IHD but without DM (non DM group).

c) Criteria for diagnosis of DM:

Patient who fulfilled the diagnostic criteria for DM recommended by the World Health Organization (WHO) in 2000[16] with or without other cardiovascular risk factors (e.g. smoking, hyperlipidaemia etc). Criteria were: patient complaints of symptoms suggestive of DM (polyuria, polydipsia, weight loss) with one of the following:

1. Fasting plasma glucose ≥ 7 mmol/L (≥126 mg/dl).
2. Random plasma glucose (or 2 hrs after an ideal OGTT) ≥ 11.1 mmol/L (≥ 200mg/dl).
   (In asymptomatic patient two samples are required to confirm the diagnosis).

d) Criteria for diagnosis of non DM cases:

Patient do not meet the above WHO criteria for confirming the diagnosis of DM, with or without other cardiovascular risk factor (e.g. smoking, hyperlipidaemia etc).

e) Criteria for coronary artery disease (CAD) & coronary angiography (CAG):

1. Chronic stable angina pectoris with positive E.T.T (with or without previous MI).
2. Unstable angina pectoris.
3. Atypical chest pain with positive E.T.T.
4. After acute MI (with or without persistent angina).
5. Asymptomatic patient with noninvasive evidence of myocardial ischaemia (ECG, Echo).

f) Exclusion criteria:

1. Patient with hypertrophic or dilated cardiomyopathy.
2. Patient with valvular heart disease.
3. Patient with congenital heart disease.

2. Coronary angiographic (CAG) procedure:

CAG & where needed left ventriculography were done in all patients by standard Jud kin's technique through femoral approach by modified Seldinger technique using non ionic dye. Multi angled standard views were recorded for analysis. A comprehensive analysis of coronary angiogram (CAG) was done; severity & extent of arterial disease were measured by eye estimation. The pre requisites for CAG were followed according to the hospital protocol, and then morphological characteristics of lesion were analyzed.

a) **Positive CAG** - taken when coronary artery stenosis ≥ 50%.

b) **Negative CAG** - taken when coronary artery stenosis < 50%.

c) **According to branches of coronary artery involvement:**

1. Single vessel disease (SVD): one coronary artery involved.
2. Double vessel disease (DVD): two coronary arteries involved.
3. Triple vessel disease (TVD): three coronary arteries involved.
4. Diffuse lesion: diffusely involved one or more coronary artery.

3. Statistical analysis:

After processing of all available information, statistical analysis and their significance was done. The patients were grouped into those with & without DM having CAG. All parametric values were expressed as mean & nonparametric values were expressed in percentage (%).The significance of difference between two groups were determined by using unpaired student's 't' test, Pearson's chi-square test & 'z' test where applicable. 'P' value of less than 0.05 was considered to be significant.

RESULTS

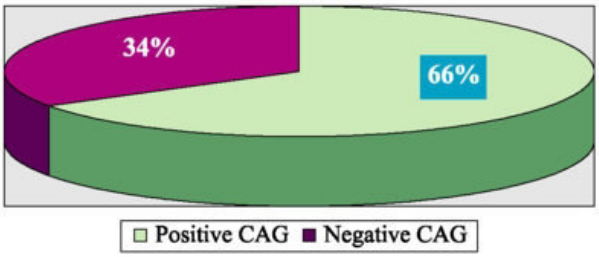

Figure-1: *Pie chart showing diagnostic yield of CAG among pts with IHD (n=120).*

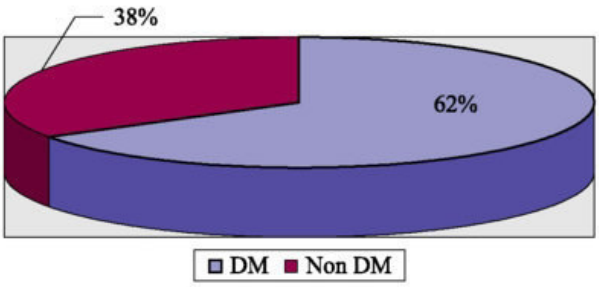

Figure-2: *Pie chart showing distribution of patient underwent CAG (n=120).*

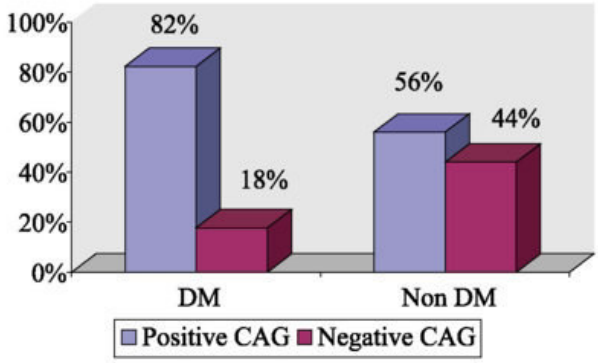

Figure-3: *Bar diagram showing positive angiographic lesion among DM & non DM group (n=120).*

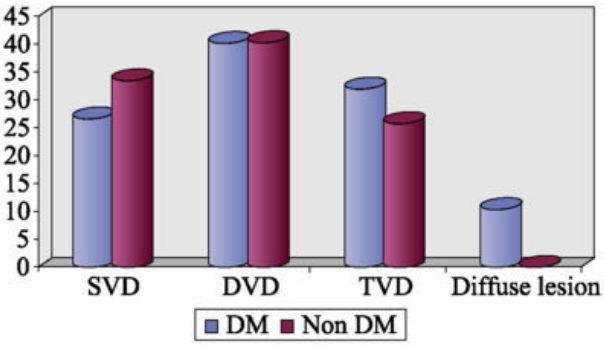

Figure-4: *Bar diagram showing pattern of vessels involvement in DM and non DM patients (n=120).*

Table-1: *Percentage of vessel stenosis in DM and non DM group (n=120).*

Vessel	DM	Non DM
LMCA	81%	70%
LAD	81.48%	79.41%
LCX	87.4%	79.55%
RCA	84.65%	83.15%
Average	83.63%	78.03%

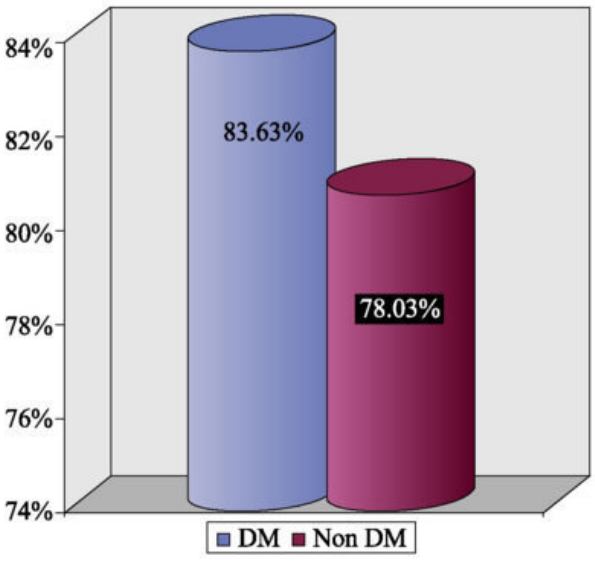

Figure-5: *Bar diagram showing average vessel stenosis in DM and non DM group (n=120).*

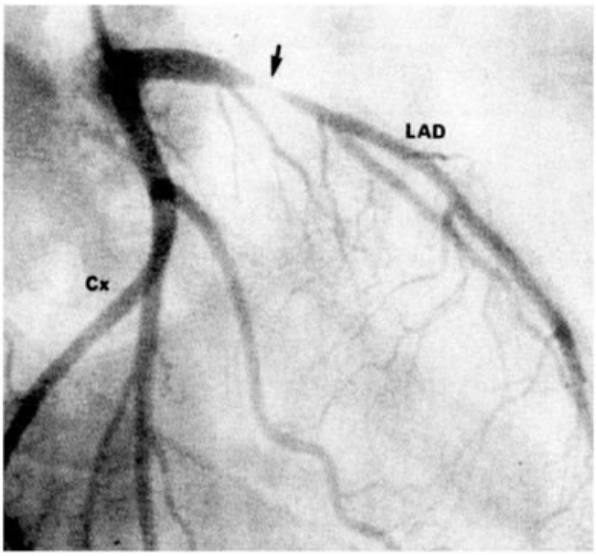

Figure-6: *SVD in left anterior descending artery (LAD).*

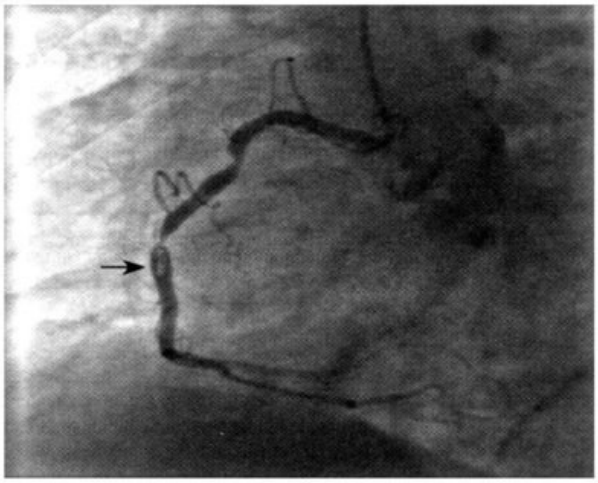

Figure-7: *SVD in right coronary artery (RCA).*

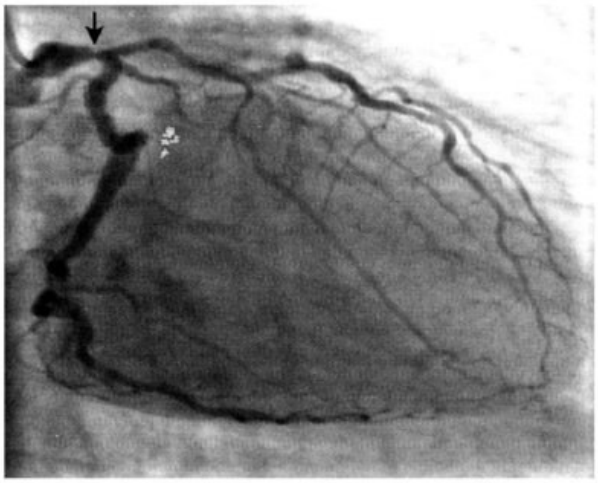

Figure-8: *SVD in left main stream (LCA).*

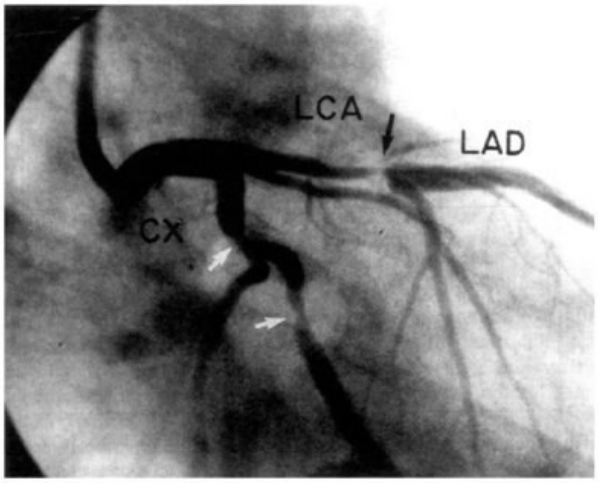

Figure-9: *DVD in left anterior descending & circumflex artery.*

DISCUSSION

Although many of the well established risk factors are described for formation of atheromatous plaque, glucose intolerance (DM) accounts for a major part of the high incidence of IHD in certain ethnic groups in South Asia[15]. This study demonstrates incidence & difference of coronary heart disease (CHD), DVD, TVD, diffuse lesion among symptomatic diabetic and nondiabetic patient. The prevalence of coronary artery disease (more than 50% diameter stenosis) is more in DM patients (82.22%) compared to their non DM counterparts (56%). Moreno et al[16] found that incidence of thrombus was higher in patients with diabetes than in patients without diabetes (62% versus 40%). Our study also demonstrates that diabetic patients had a higher prevalence of three-vessel disease (TVD) (32.43% versus 26.19%) and lower prevalence of single-vessel disease (SVD) (27.02% versus 33.33%). Jose A, Silva et al[17] found diabetic patients had a higher prevalence of three-vessel disease (47% versus 31%) and lower prevalence of single-vessel disease (18% versus 32%) than nondiabetic patients, although these differences were not statistically significant. In one large autopsy study, Waller et al[11] reported that 91% of patients with adult-onset diabetes (type II) had severe (>75%) narrowing of at least one major coronary artery and 81% had severe two or three vessel involvement. Our study demonstrates average vessel stenosis 83.63% in DM group as against 78.03% in the non diabetic individuals. Whether or not coronary atherosclerosis is more diffuse in diabetic patients is controversial[11,18]. In the autopsy study by Waller et al[11] the diabetic patients had more severe stenosis. However, in another autopsy study by Crall and Roberts[19], more extensive and diffuse coronary artery disease was found in diabetic patients. In our study 10.8% DM patients showed diffuse stenosis which was absent in the non DM group.

Limitation of the study:

This was a small scale study & does not represent the whole CAD population of the region. So, a large scale study is warranted.

CONCLUSION

The results of the angiographic finding suggests that diabetic patients have a higher incidence of coronary heart diseases (CHD), DVD, TVD, diffuse lesions & marked stenosis of coronary vessel than nondiabetic patient.

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JALALABAD MEDICAL JOURNAL

Original Article

Prevalence of Extra Pulmonary Tuberculosis Amongst Patients Attending DOTS Corner in a Tertiary Care Hospital: A Retrospective Study

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ABSTRACT

This retrospective study was done to find out the prevalence of extra pulmonary tuberculosis amongst patients attending directly observed treatment short course (DOTS) corner in a tertiary care hospital. This study was conducted in the DOTS corner of Sylhet MAG Osmani Medical College Hospital, Sylhet from January 2013 to December 2013. All 159 patients with extra pulmonary tuberculosis who registered the corner were included in this study. Among the patients 85 (53.5%) were male and 74 (46.5%) were female. Maximum 53 (33.3%) patients were from age group 15-24 years. The most common form of extra pulmonary tuberculosis was lymph node tuberculosis (49%) followed by pleural tuberculosis (18.9%), abdominal tuberculosis (12%), bone/spine tuberculosis (3.9%), tubercular meningitis (3.2%). Among lymph node, cervical region was commonly affected (66.7%). It is obvious from this study that extra pulmonary tuberculosis is an important clinical problem in our country. So it is necessary to take steps for evaluation of risk groups as well as their proper treatment and control.

Key words: *Extra pulmonary tuberculosis, Retrospective study, Prevalence.*

[Jalalabad Med J 2014; 11(2): 54-58]

INTRODUCTION

Worldwide *Mycobacterium tuberculosis* remains the leading infective cause of mortality and morbidity[1]. It is estimated that about one third of the world's population are infected with tuberculosis (TB)[2]. When World Health Organization (WHO) declared tuberculosis a global health emergency in 1992, it was prevalent in almost all countries of the world[3]. In 2012 WHO estimated the incidence of 8.6 million cases of tuberculosis and 1.3 million died. Majority of the cases were in the South East Asia followed by Africa and Western Pacific Regions[4]. Bangladesh ranked sixth among the 22 high burden countries of tuberculosis globally. Estimates suggest that daily about 880 new cases are diagnosed and 176 deaths occurr in Bangladesh[5]. The incidence and prevalence of TB in Bangladesh per 100000 was 225 and 411 respectively in 2011. Government of Bangladesh launched DOTS strategy in 1993[6].

Tuberculosis affecting other sites except lungs, known as extra pulmonary tuberculosis, is rarely smear positive. It is generally accepted that the contagious potential of this form is negligible and it has, therefore, never been a priority in the campaigns undertaken by national TB control programme[7]. Extra pulmonary tuberculosis became more important as chances of developing extra pulmonary tuberculosis in immune compromised patients are higher than in immune competent counterparts[8]. Studies have suggested that the sites of extra pulmonary tuberculosis may vary according to geographic location, population groups and a wide variety of host factors[9,10,11]. The extra pulmonary manifestation of tuberculosis is prevalent in 10-34% of non HIV positive cases while it occurs in 50-70% in patients coinfected with HIV[12]. In Pakistan,

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WHO estimated that 15% of newly reported cases in 2007 were extra pulmonary[13]. In India the percentage of extra pulmonary tuberculosis in tertiary care was in between 30 to 53%, while the percentage estimated by the national control programme for HIV negative adults were between 15 to 20%[14].

The aim of this study was to evaluate the prevalence and characteristics of extra pulmonary tuberculosis among the patients attending the DOTS corner of a tertiary care hospital in Bangladesh.

MATERIALS AND METHODS

This was a retrospective study, conducted in the DOTS corner of Sylhet MAG Osmani Medical College Hospital, Sylhet, Bangladesh during the period from January 2013 to December 2013. DOTS programme was started in the medical college hospital in 2004 covering the entire population of 127529. Data were collected from the TB registrar and patients record sheets. Among total suspected 3918 cases, 1142 patients were diagnosed as having tuberculosis, where pulmonary tuberculosis was 600 and extra pulmonary tuberculosis was 542. Total 771 patients were referred to other DOTS corners and finally 371 patients of all forms of tuberculosis were registered for treatment in this DOTS corner. Among 371 patients, extra pulmonary tuberculosis cases were 159 and were included in this study. The patients with both pulmonary and extra pulmonary tuberculosis were diagnosed as pulmonary tuberculosis and were excluded from the study. The diagnosis of extra pulmonary tuberculosis was based on suggestive clinical features, microbiological or histopathological evidence of *Mycobacterium tuberculosis* from extra pulmonary sites, radiological changes and satisfactory response to anti tubercular therapy. After collecting data, editing was done manually and was analyzed with the help of SPSS.

RESULTS

The study revealed that, out of 371 cases registered for treatment of all tuberculosis, 159 (42.9%) was diagnosed as extra pulmonary tuberculosis. Among them 85 (53.5%) were male and 74 (46.5%) were female. Male to female ratio was 1.1:1. Maximum 53 (33.3%) patients were from age group 15-24 years followed by 33 (20.7%) in 25-34 years and 29 (18.2%) in 35-44 years age group. Among 159 cases 152 (95.6%) were from urban area and only 7 (4.4%) were from rural area. Only 48 (30%) patients had BCG scar marks and there were no scar marks in 111 (69.8%) cases. The most common form of extra pulmonary tuberculosis was lymph node tuberculosis 78 (49.1%) followed by pleural tuberculosis 30 (18.9%), abdominal tuberculosis 19 (12%), bone/spine tuberculosis (3.9%), tubercular meningitis (3.2%), urogenital TB (3.2%) and skin TB (1.9%). Both lymph node and pleural tuberculosis were common in the age group 15-24 years, 42.3% and 33.3% respectively. Among lymph node the cervical region was commonly affected 52 (66.7%) followed by axillary lymph nodes 14 (17.9%) and inguinal lymph nodes 12 (15.4%).

Table-I: *Age and sex distribution of extra pulmonary tuberculosis cases (n=159).*

	Sex		
Age Group (Years)	**Male, No (%)**	**Female, No (%)**	**Total No (%)**
0-14	12 (7.5)	9 (5.7)	21 (13.2)
15-24	28 (17.6)	25 (15.7)	53 (33.3)
25-34	18 (11.3)	15 (9.4)	33 (20.7)
35-44	15 (9.4)	14 (8.8)	29 (18.2)
45-54	5 (3.2)	7 (4.4)	12 (7.5)
55-64	3 (1.9)	2 (1.3)	5 (3.2)
65 and above	4 (2.5)	2 (1.3)	6 (3.8)
Total	85 (53.4)	74 (46.6)	159 (100)

Table-II: *Age and site distribution of extra pulmonary tuberculosis (n=159).*

	Age Group (Years)							Total
Sites	**0-14**	**15-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65**	**No (%)**
Lymph nodes	10	33	13	14	6	1	1	78 (49)
Pleura	3	10	8	3	1	2	3	30 (18.9)
Abdomen	3	3	5	3	3	0	2	19 (12)

Bones	0	0	2	2	0	2	0	6 (3.9)
Meninges	3	1	1	0	0	0	0	5 (3.2)
Larynx	0	0	0	3	0	0	0	3 (1.9)
Urogenital	1	2	1	1	0	0	0	5 (3.2)
Brain	0	1	0	1	0	0	0	2 (1.3)
Gluteal sinus	0	1	0	0	1	0	0	2 (1.3)
Breast	0	0	1	2	0	0	0	3 (1.9)
Skin	1	1	0	0	1	0	0	3 (1.3)
Parotid gland	0	1	0	0	0	0	0	1 (0.6)
Fistula in ano	0	0	1	0	0	0	0	1 (0.6)
Milliary TB	0	0	1	0	0	0	0	1 (0.6)
Total	21	53	33	29	12	5	6	159 (100)

Table-III: *Sex and sites distribution of extra pulmonary tuberculosis (n=159).*

	Sex Groups		
Sites	**Male, No (%)**	**Female, No (%)**	**Total, No (%)**
Lymph nodes	40 (25.2)	38 (23.9)	78 (49)
Pleura	20 (12.6)	10 (6.3)	30 (18.9)
Abdomen	11 (6.9)	8 (5)	19 (11.9)
Bones	4 (2.6)	2 (1.3)	6 (3.9)
Meninges	1 (0.6)	4 (2.6)	5 (3.2)
Larynx	0 (00)	3 (1.9)	3 (1.9)
Urogenital	3 (1.9)	2 (1.3)	5 (3.2)
Brain	2 (1.3)	0 (00)	2 (1.3)
Gluteal sinus	2 (1.3)	0 (00)	2 (1.3)
Breast	0 (00)	3 (1.9)	3 (1.9)
Skin	1 (0.6)	2 (1.3)	3 (1.9)
Parotid gland	0 (00)	1 (0.6)	1 (0.6)
Fistula in ano	1 (0.6)	0 (00)	1 (0.6)
Milliary TB	0 (00)	1 (0.6)	1 (0.6)
Total	85 (53.5)	74 (46.5)	159 (100)

Table-IV: *Diagnostic modalities and sites of distribution of extra pulmonary tuberculosis (n=159).*

Sites	**Diagnostic Modalities**							**Total**
	FNAC	**Biopsy**	**X-ray**	**CT scan**	**MRI**	**Biochemical**	**Clinical**	
Lymph nodes	70	8	0	0	0	0	0	78
Pleura	0	0	0	0	0	30	0	30
Abdomen	0	5	0	0	0	12	2	19
Bones	0	0	1	0	5	0	0	6
Meninges	0	0	0	0	0	5	0	5
Larynx	0	3	0	0	0	0	0	3
Urogenital	0	4	0	0	0	1	0	5
Brain	0	0	0	2	0	0	0	2
Gluteal sinus	0	2	0	0	0	0	0	2
Breast	1	2	0	0	0	0	0	3
Skin	0	3	0	0	0	0	0	3
Parotid gland	1	0	0	0	0	0	0	1
Fistula in ano	0	1	0	0	0	0	0	1
Milliary TB	0	0	1	0	0	0	0	1
Total	72	28	2	2	5	48	2	159

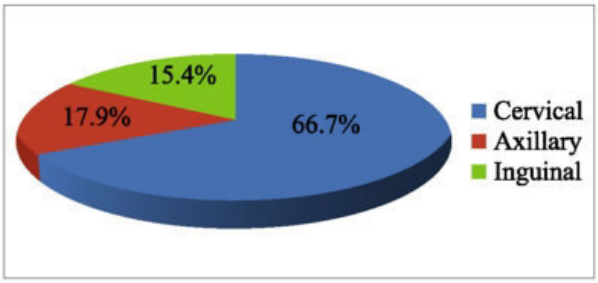

Figure-1: *Distribution of extra pulmonary tuberculosis in different lymph nodes.*

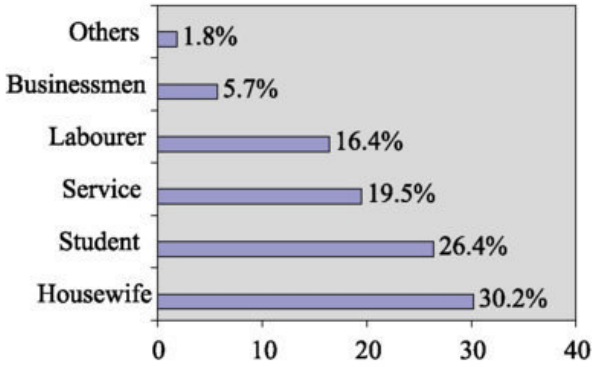

Figure-2: *Distribution of occupation of the cases.*

DISCUSSION

The present study was done to know the demographic and clinical profile of extra pulmonary tuberculosis in a single centre. Among 159 patients 85 (53.5%) were male and 74 (46.5%) were female. Male to female ratio was 1.1:1 which was consistent with a study done in Turkey, where they found 54.2% male and 45.8% female[11]. But other studies in India and Pakistan were different from our study, where they found male to female ratio of 1:1.3 and 1:3 respectively[15,16]. In our study 33.3% of cases belonged to the age group 15-24 years and 20.7% to the age group of 25-34 years. Similar findings of higher incidence in young individuals were reported in other studies which highlighted the young age as socioeconomic risk group for extra pulmonary tuberculosis[15,16]. This finding was consistent with studies in USA and Europe where they reported that, younger age was an individual risk factor for extra pulmonary tuberculosis[17,18]. But another study in USA reported that age was not associated with extra pulmonary tuberculosis[9]. These inconsistencies may be due to differences in prevalence of host related factors or important co exposures.

In present study most commonly involved site of extra pulmonary tuberculosis was lymph nodes (49%) followed by pleura (18.9%). These were consistent with other studies[11,15,16]. But in USA bones and joints where as in Hong Kong genito-urinary system and skin were found as common sites[9,10]. An increased incidence of tubercular lymphadenitis in developing countries over past couple of decades has been noticed after the onset of HIV era which supports our study[19]. More studies needed to be carried out in order to ascertain the association of tubercular lymphadenitis and HIV infection within the region as well as within the country[15].

In our study lymph node tuberculosis was most common in both male (25.2%) and female (23.9%). But pleural TB (12.6%), abdominal TB (6.9%) and spine/bone TB (2.6.%) were more common in males than female where as TB meningitis (2.6%), laryngeal TB (1.9%), skin TB (1.3%) were more common in females than males. This difference in the occurrence of various types of extra pulmonary tuberculosis cases in different age and sex groups and the predilection to involve one site over the other depends upon the host factors. Regarding occupation, in the present study we found that most of the patients [48 (30.2%)] were house wives. The reason may be that the social exclusion of women, who are generally home bound and have poor nutritional status as well as social stigma with TB, which discourage them from early medical care[20]. Higher reporting of extra pulmonary tuberculosis cases in tertiary centers necessitates the need for ongoing medical education on a large scale and well defined programme specified protocols for the diagnosis and treatment of extra pulmonary tuberculosis cases.

CONCLUSION

As the proportion of extra pulmonary tuberculosis is relatively low and less infectious than pulmonary tuberculosis, it is usually not prioritized for case finding strategies in tuberculosis control programme. But in present study extra pulmonary tuberculosis was very commonly found in early adulthood. So tuberculosis control programme should give focus on young populations for early diagnosis of extra pulmonary tuberculosis to decrease tuberculosis morbidity and mortality.

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JALALABAD MEDICAL JOURNAL

Original Article

Immediate Hospital Outcome of Admitted Low Birth Weight Babies in a Tertiary Care Hospital in Bangladesh

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ABSTRACT

This cross sectional, descriptive study was done to evaluate immediate hospital outcome of admitted low birth weight babies in a tertiary care hospital in Bangladesh. This study was conducted in the neonatal ward of Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet from January 2008 to December 2008. One hundred neonates were selected according to inclusion and exclusion criteria in this study. Common presenting complaints of low birth weight babies on admission were: prematurity alone, perinatal asphyxia and respiratory distress syndrome (RDS). Among them the commonest morbidity during hospital stay was poor feeding (68%), neonatal hyperbilirubinemia requiring phototherapy (36%), hypothermia (38%), infection (26%), and apnoea of prematurity (27%). The overall mortality was 13%. Septicemia was the main cause of death. Mortality was high among neonate whose birth weight was <1000 gm and gestational age was 28 weeks and below. Only one baby survived among babies with birth weight less than 1000 gm. It is very essential to find out the common morbidities and cause of mortality for a better outcome of low birth weight babies.

Key words: *Low birth weight babies, Outcome.*

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INTRODUCTION

Weight below 2500 gm at birth irrespective of age of gestation is considered as low birth weight (LBW). LBW may be due to prematurity, intrauterine growth retardation (IUGR) or both[1]. Birth weight is an important parameter in predicting the susceptibility of disease, future growth and development and is an important determinant of neonatal morbidity and mortality[2]. In Bangladesh NMR (Neonatal Mortality Rate) is 32% and LBW infants have a much greater risk of dying in the new born period which is about 11% of total neonatal death in our country[3]. Bangladesh including six countries of the world received the UN Millennium Development Goal (MDG) award for significant achievement towards attaining the goal (MDG 4) by reducing child mortality rate. The level of LBW in developing countries (17%) is more than double the level in industrialized countries (7%). In fact more than 96% of LBW babies are born in the developing world[4]. Although outcomes of LBW infants have been reported extensively from industrialized countries, less is known about the outcome of such infants in the developing world. Low birth weight infants are at increased risk of morbidity and mortality, mainly due to infections and other complications. The present article is based on a cross sectional study done to evaluate the most common reasons for hospital admission of LBW infants, morbidity during hospital stay, and their immediate outcome in a tertiary care hospital in Bangladesh.

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MATERIALS AND METHODS

This was a cross sectional descriptive study, conducted in the neonatal ward of Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet, Bangladesh during the period from January 2008 to December 2008. For this purpose total 100 admitted low birth weight babies irrespective of gestational age were selected consecutively as a study group. LBW babies with severe perinatal asphyxia, birth injury and major congenital malformation were not included in this study. Informed consent was taken from parents before enrolment in this study. Ethical issues were maintained properly. The enrolled newborns were resuscitated on admission and cared in incubator in most cases. Babies were initially given intravenous fluids, followed by gavage feeding, feeding with cup and spoon and finally breast feeding. Ampicillin and gentamicin was the most common first line antibiotic of choice, followed by a third generation cephalosporin (usually cefotaxime) with or without gentamicin, depending on patient's condition. Other supportive therapy such as correction of acidosis, maintenance of fluid and electrolyte balance, phototherapy and blood transfusion was given as required. Laboratory investigations were done depending on clinical judgment. Acidosis was corrected empirically. History was taken and physical examination was done as per structured questionnaire. Weight was taken on admission using a baby scale and gestational age was determined on the basis of maternal menstrual dates and further confirmed by Ballard Scoring System. After collecting data, editing was done manually and was analyzed with the help of SPSS version 12.

RESULTS

The study revealed that the common presenting complains of low birth weight babies on admission were prematurity, perinatal asphyxia and RDS. Among 100 babies the morbidity during hospital stay was poor feeding (68%), neonatal hyperbilirubinemia requiring phototherapy (36%), hypothermia (38%), infection (26%), and apnoea of prematurity (27%). The overall mortality rate was 13%. Septicemia was the main cause of death. Mortality was high among neonate whose birth weight was <1000 gm and gestational age was 28 weeks and below. Only 1 baby survived among babies with birth weight less than 1000 gm.

Table-I: *Outcome of low birth weight babies by gestational age (n=100).*

Gestational Age (Weeks)	Total	Survived No (%)	Died No (%)	DORB No (%)
28 and below	8	2 (25)	5 (62.5)	1 (12.5)
29-32	30	24 (80)	3 (10)	3 (10)
33-36	38	35 (92)	3 (8)	0 (00)
37 and above	24	22 (91.6)	2 (8.3)	0 (00)
Total	100	83 (83)	13 (13)	4 (4)

Table-II: *Mortality of low birth weight babies by birth weight (n=100).*

Weight in Grams	Number of LBW baby	Mortality Frequency (%)
<1000	5	4 (80)
1000-1499	24	4 (16.6)
1500-1999	54	4 (7.4)
2000-<2500	17	1 (5.8)
Total	100	13 (13)

Table-III: *Morbidities of low birth weight babies that subsequently developed after admission.*

Problems	Frequency (%)
Infection	26 (26)
Poor feeding	68 (68)
Jaundice	36 (36)
Apneic spell	27 (27)
Convulsion	6 (6)
Bleeding manifestation	10 (10)
Temp instability	38 (38)
Hypoglycemia	1 (1)
Sclerema	4 (4)
Skin ulcer	1 (1)
LBW babies with no problem	5 (5)

Table-IV: *Outcome of low birth weight babies by place of delivery (n=100).*

Place of Delivery	Number	Survived No (%)	Died No (%)	DORB No (%)
Hospital	89	73 (82)	12 (13.5)	4 (4.5)
Home	11	10 (90.9)	1 (9.1)	0 (00)

Table-V: *Outcome of low birth weight babies by mode of delivery (n=100).*

Mode of Delivery	Number	Survived No (%)	Died No (%)	DORB No (%)
LUCS	53	48 (90.6)	5 (9.4)	0 (00)
Vaginal	47	35 (74.5)	8 (17)	4 (8.5)

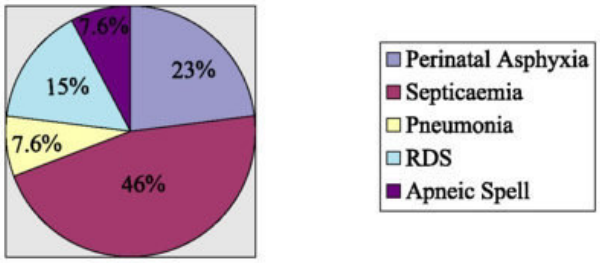

Figure-1: *Causes of death of low birth weight babies.*

DISCUSSION

This cross sectional study provides evidence from a tertiary care hospital in Bangladesh, about different neonatal morbidity and mortality of the LBW babies. Infants who are small or are born earlier have increased morbidity and mortality, and the more extremely small or early they are, the higher the risk[5]. According to birth weight and gestational age, survival increases at or above 1000 grams and 28 weeks. Survival rates of neonates below these figures decline noticeably. The present study also shows the similar picture, there was a gradual decline in mortality with increasing birth weight. In the present study, 87% LBW babies survived and 13% expired. There was only 1 baby survived among babies with birth weight less than 1000 gm. Among 100 babies, 80% of babies weighing <1000 gm, 16.6% weighing 1000-1499 gm, 7.4% weighing 1500-1999 gm and 5.8% of babies weighing 2000-<2500 gm expired. Babies whose gestational age was 28 weeks and below, the mortality was high (62.5%) in comparison to those whose gestational age >28 weeks like, in 29-32 weeks of gestational age, mortality was 10% and in >33 weeks mortality was 8%. This study is in similarity with other studies[6,7,8] that increasing birth weight and gestational age has a marked influence towards better survival of these babies. So, measures to prevent preterm births are important in reducing neonatal mortality. A strong effort and improvement of care at and after birth must also be made for those smaller infants.

The common morbidities that the LBW babies developed during hospital stay were infection (26%), jaundice (36%), apnoea of prematurity (27%) and temperature instability (38%). The incidence of infection is lower than Tabib et al[7] but higher than Ahmed ASMNU et al[8] who found 41.6% and 11.7% respectively. High incidence of severe infection in these cases was due to poor resistance to infection; prolong labor with leaking membrane, lack of proper hygiene of mother and delivery conducted with poor aseptic measures. The incidence of jaundice was 36% which is consistent with Ahmed ASMNU et al[8] who found it in 26.7% cases. Infection and prematurity were found to be the main cause of jaundice in this study. In this series no infant developed kernicterus due to early treatment with phototherapy and exchange transfusion when needed. Poor feeding is one of important separate problem, 68% cases in our study which is not consistent with the study of Tabib et al[7] who found 16% and Ahmed ASMNU et al[8] who found 23.3% cases with poor feeding.

The major cause of death in the present study have been recorded as septicemia found in 6 (46%) cases out of 13 deaths. Several other studies[9,10] has also reported similar findings of excess mortality among LBW infants associated with septicemia.

Unfortunately still now an important cause of neonatal morbidity as well as mortality in our country is perinatal asphyxia. Home delivery by untrained birth attendants is the main reason for perinatal asphyxia, where more than 90% of all births occur[11], though in present study 89% of the deliveries were conducted at hospital many cases attended late or when home trial failed. The cause of death due to perinatal asphyxia was 23% which is consistent with Tabib et al[7] and Ahmed ASMNU et al[8] who found 43.8% and 38.5% respectively. In this study, 2 (15.3%) deaths were due to RDS which is consistent with findings by Tabib et al[7].

The mode of delivery was found to influence the outcome in the present study. Among 100 babies, 17% LBW baby died that delivered by vaginal delivery where as only 9.4% baby died among LUCS deliveries. Haque et al[12] have also found better outcome of small sick preterm infants delivered by LUCS than pervaginal delivery. So, encouraging institutional delivery and training of traditional birth attendants in identification of high risk deliveries, safe delivery practice and neonatal resuscitation can do much improvement.

CONCLUSION

This study shows poor feeding, temperature instability, jaundice, infection and perinatal asphyxia were common morbidities of LBW baby. The main causes of mortality were septicemia and perinatal asphyxia. Percentage of mortality was more in the group of gestational age <28 weeks and birth weight <1000 gm. Co-ordination between obstetric and neonatal service, improvement of nursing care and further improvement of the LBW care within the available resources are essential to prevent complication and death.

Limitation of the study

i) Small number of patients.
ii) It was an observational study and there was no control group.
iii) Tertiary hospital based study may not represent the actual situation of the community.

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JALALABAD MEDICAL JOURNAL

Original Article

Knowledge Regarding Pulmonary Tuberculosis Among Adult Rural Population In A Selected Area of Gagipur

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ABSTRACT

Tuberculosis continues to remain one of the major health problems in the South East Asia Region. Bangladesh ranks sixth in the global list of 22 countries with the highest burden of tuberculosis (TB). According to WHO, incidence and prevalence of all forms of TB in 2009 were 225 and 426 per 100000 population respectively. This descriptive type of cross sectional study was conducted among 480 adult rural population both male and female of Gushulia village of Tongi thana under Gazipur district to determine the socio-demographic characteristics and to assess the knowledge regarding pulmonary tuberculosis among the rural population. The data were collected by using self administered, pre-tested, semi-structured questionnaire. In this study it was found that maximum respondents had good knowledge regarding transmission, sign-symptoms, factors related to the disease and treatment facilities. But they had poor knowledge about the site, cause, treatment and prevention of the disease. Only 20% said organism or germ as a cause of the disease and lungs as the only site of tuberculosis. Out of total, 51% mentioned infected cough as a source of transmission of the disease. A good number (48.65%) respondents said primary symptom of tuberculosis is fever with chronic cough for more than 3 weeks. Majority (52.6%) mentioned malnourished and people living in overcrowded area as vulnerable group and 74.59% of them selected smoking as a risk factor for pulmonary tuberculosis. About 55.62% mentioned sputum examination and chest x-ray as diagnostic tool for tuberculosis and 53.75% mentioned the government medical college hospitals as the place to get diagnostic tests and full course of treatment free of cost. Forty one percent of them were found to know about the prevention of the disease.

Key words: *Knowledge, Pulmonary tuberculosis, Rural population.*

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INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis* which is primarily an illness of respiratory system and is spread by coughing and sneezing. TB is the leading cause of death among adults in developing countries due to a single infectious agent. Worldwide every year about 8 million people develop TB disease and annually 2 million die of this in spite of the availability of highly effective treatment. Among all the regions, the South East Asia Region accounts for 35% of the global TB cases. It is 30% in Africa Region, 20% in Western pacific, 7% in the Eastern Mediterranean, 3% in the American and 5% in the European region. According to the World Health Organization Bangladesh ranks sixth among countries with the highest burden of TB in the world, with 300,000 new cases and 70,000 deaths each year. Mostly uneducated and poor people in rural areas are affected; 86 adults in every 100,000 suffer from TB[1]. It is a contagious disease like common cold, it spreads through the air. Only people with TB in their lungs are infectious. When infectious people cough, sneeze, talk

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or spit, they propel TB germs known as bacilli into the air. A person needs only to inhale a small number of bacilli to be infected. Left untreated each person with active TB may infect 10 and 15 people every year. The association between poverty and TB is well recognized and the highest rates of TB are found in the poorest people of the community. Poverty may result in poor nutrition, which may be associated with alterations in immune function. On the other hand, poverty results in overcrowded living conditions, poor ventilation, poor hygiene, which are likely to increase the risk of transmission. Comparatively poor treatment facilities in remote areas may contribute to the higher prevalence in rural areas, compounded by lack of awareness. However people infected with TB bacilli will not necessarily become sick with the disease. The immune system "walls off" the TB bacilli and can lie dormant for years. When someone's immune system is weakened, the chances of becoming sick are greater[1]. Around 90% of the infected people do not progress to TB disease because of their immunity and the bacilli usually remain dormant within the body. They don't have symptoms and cannot spread TB to others. About 10% of the people infected with TB bacilli may progress to TB disease in their lifetime. The bacilli usually enter the body by inhalation through the lungs and multiply, spread to other parts of the body via blood stream and produce sign symptoms. Tuberculosis of the lungs or pulmonary tuberculosis is the most common form of TB. It occurs in about 80% of cases. Extra pulmonary TB can affect any other part of the body[2]. Pulmonary TB is suspected in a person presented with persistent cough for three weeks or more, with or without production of sputum. In addition to cough other sign symptoms may or may not be present. The highest priority for TB control is identification and successful treatments of patients who are suffering from smear positive TB. Microscopic examination of sputum, X-ray examination of the lungs, and culture of bacilli are the tools of diagnosis of TB. Treatment with right combination of drugs and cure of infectious cases of TB will interrupt transmission of infection in the community. Therefore successful completion of treatment is the main effective way of prevention of TB. In 1993 The World Health Organization (WHO) declared tuberculosis as a global emergency and recommended a standard strategy for treatment of the disease known as directly observed treatment short course (DOTS)[3]. Successful TB control measures are of extreme importance for the epidemic to be halted.

MATERIALS AND METHODS

This descriptive type of cross sectional study was conducted to assess the knowledge regarding pulmonary tuberculosis among rural population in selected area of Gushulia village of Tongi thana under Gazipur district. This place was selected purposively for its communication facilities, good co-operation of village people and time limitation. According to the study objectives the study was designed with description of knowledge related factors. The study period was from 19th December 2012 to 4th February 2013. Total of 480 rural adult people between 18-95 years of both sexes were taken as study population. Prior to data collection a semi structured questionnaire was prepared based on the objectives of the study. Respondents were selected purposively and data was collected by face to face interview with the respondents through semi structured questionnaire. All the available adults of selected village who were willing to participate in the study were interviewed. To assess the level of knowledge regarding pulmonary tuberculosis, the respondents were categorized into three types, good knowledge, fair and poor. Those who answered the correct answer were considered to have good knowledge; those who answered "don't know" were graded as having poor knowledge and those who answered "others" considered to have fair knowledge. Statistical analysis was done by SPSS.

RESULTS

Total 480 respondents took part in the study. Both male and female adults aged between 18-95 years was included and response rate was 100%. Among them 56% was male and rest were female. Majority of the respondents (49.37%) were in the age group of 18-35 years. Regarding their religion, 71% were Muslims and 23% were Hindu. Only 5% were Buddhist and Christians and 1% others (Table-I). It was observed that among the participants 32% completed primary level in terms of their educational status, 28% were illiterate, 26% completed their secondary level. Few came from higher secondary, honors level and only 1% came with post graduates level (Table-II). It was seen that most of the respondents (27%) were farmer and 21% business. Twenty two percent said others like singer, dancer actor etc. as their profession (Table-III). It is revealed from this study that among 480 respondents 90% heard about TB earlier and 10% didn't. Regarding their knowledge about pulmonary tuberculosis it was found that 67% of the respondents didn't know the cause of TB but 20% could answer that a germ or organism is the cause of the disease. As the

site of pulmonary TB, 20% could give correct answer. Infected cough is the source of TB was correctly answered by 51% and about 49% correctly answered about primary symptoms of pulmonary TB. Malnourished people living in overcrowded area are vulnerable for TB infection, was correctly mentioned by 52.6%. Smoking was selected as a risk factor by 75% respondents. Sputum examination and a chest X ray is the diagnostic tool, was correctly answered by 39% people. Government medical college hospitals are the place for free treatment of TB was known to 53.75%. Forty percent of the respondents knew about the prevention of TB (Table-IV).

Table-I: *Distribution of respondents by sociodemographic characteristics (n=480).*

Socio Demographic Variables	Frequency (%)
Age in Years	
18-35	237 (49.37)
36-55	176 (36.67)
56-75	63 (13.13)
76-95	4 (0.83)
Sex	
Male	267 (56)
Female	213 (44)
Religion	
Islam	340 (70.83)
Hinduism	109 (22.71)
Buddist	14 (2.92)
Christian	11 (2.29)
Others	6 (1.25)

Table-II: *Distribution of the respondents by their educational status (n=480).*

Educational Level	Frequency (%)
Illiterate	138 (28.75)
Primary	158 (32.92)
Secondary	126 (26.25)
Higher secondary	40 (8.33)
Honors	10 (2.08)
Post graduate	8 (1.67)

Table-III: *Distribution of the respondents by their occupation (n=480).*

Type of Occupation	Frequency (%)
Farmer	105 (26.88)
Service holder	76 (15.82)
Business	101 (21.04)
Day labor	33 (6.88)
Unemployed	36 (7.5)
Others	129 (21.88)

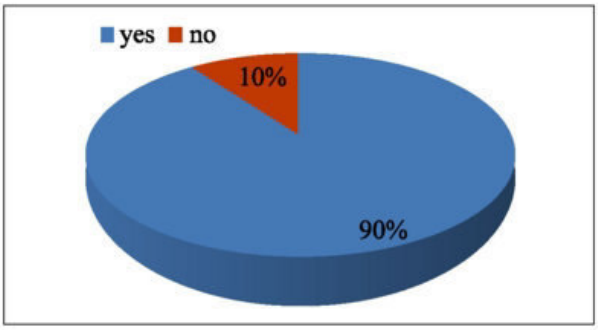

Figure-1: *Distribution of the respondents by they heard about tuberculosis before (n=480).*

Table-IV: *Distribution of the respondents by their knowledge regarding pulmonary tuberculosis (n=480).*

Knowledge Related Variables	Level of Knowledge		
	Good, No (%)	Fair, No (%)	Poor, No (%)
Cause of PTB	99 (20.63)	59 (12.29)	322 (67.08)
Site of TB	99 (20.63)	322 (67.08)	59 (12.29)
Transmission of PTB	245 (51.05)	33 (6.87)	202 (42.08)
Sign symptoms of PTB	234 (48.65)	66 (13.35)	180 (38)
Vulnerable group for PTB	252 (52.6)	88 (18.33)	140 (29.16)
Habit related to PTB	358 (74.59)	16 (3.33)	106 (22.08)
Diagnosis of PTB	187 (38.96)	26 (5.42)	267 (55.62)
Treatment availability of TB	258 (53.75)	34 (7.08)	188 (39.17)
Prevention of TB	195 (40.62)	86 (17.92)	199 (41.4)

DISCUSSION

The present study was done with the aim to assess the knowledge regarding pulmonary tuberculosis among rural population in a selected area of Gazipur District. Tuberculosis is a major public health problem in Bangladesh. Over 300000 people fall ill of tuberculosis each year and 51/1000 dies due to TB every year in Bangladesh. Drug resistant tuberculosis (MDR-TB, XDR-TB), and TB/HIV infection control are the challenges to reach the Millennium Development Goals by the year 2015. The study may act as a platform on which future investigators may give a look at this topic. Among the participants 90% of them heard about tuberculosis before and only 10% said that they didn't hear and 67% of them said they didn't know the cause of TB. Regarding the site of TB whether it occurs only in lungs or not, 20.63% of them mentioned the correct answer. Which means more than half of the respondents didn't know about extra pulmonary TB. In means of ways of transmission, among the respondents 51.05% mentioned infected cough as a source of transmission of the disease. Previous study shows that among 120 rural students in southern Iran, almost all of the participants knew the sign-symptoms, ways of transmission and preventive methods of pulmonary TB. Most of them had received TB related information by television[4]. In our study 48.65% respondents said primary symptom of TB is fever with chronic cough for more than 3 weeks. Previous study in Dhaka city on patient's knowledge and attitudes toward TB in an urban setting showed that among 762 adult TB patients one-fourth of them were illiterate and night fever was the most common symptoms known (89.9%), among them 56% were aware that it could spread through sneezing and coughing, and television was mentioned as a source of information[5]. In this study 52.6% respondents mentioned malnourished people living in overcrowded area as vulnerable group. Among the respondents 74.59% selected smoking as a risk factor for pulmonary tuberculosis. Knowledge regarding diagnosis of pulmonary TB 38.96% of them mentioned sputum examination and chest x-ray as diagnostic tool for TB. Another study on knowledge of TB and associated health seeking behavior among rural Vietnamese adults with cough for three weeks showed that among 559 people a large proportion of individuals with cough for more than three weeks had limited knowledge of the causes, transmission modes, symptoms and treatment of TB. In that study men had significantly higher knowledge score than women (93.04 vs 2.55). Better knowledge was significantly related to seeking health care and seeking hospital care[6]. In this study regarding their knowledge about treatment availability of TB 53.75% mentioned Govt. medical college as the place to get completely free test and treatment for TB. This study found that, 40.62% of them mentioned prevention of pulmonary TB can be done by proper diagnosis of disease at right time, taking drugs at right dose and duration. Previous study on knowledge, practices and prevention regarding TB in urban and rural areas of Pakistan showed that among 150 urban and 150 rural people, 22.4% of rural and 14.4% of urban males said treatment completion is important. And 20% of urban and 9.8% of rural female agreed, doctors were an important source of information in rural areas[7].

CONCLUSION

Maximum respondents had good knowledge regarding transmission, sign-symptoms, factors related to the disease and treatment facilities. But knowledge about the site, cause, and prevention of the disease was poor, which is very important because successful completion of treatment is one of the effective ways of prevention. To achieve Millennium Development Goal we should emphasize on raising the knowledge about the treatment and prevention of the disease and improving awareness through effective health education program among the vulnerable people of Bangladesh.

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JALALABAD MEDICAL JOURNAL

Original Article

Localization of Occlusion Site of Left Anterior Descending Coronary Artery in Acute Anterior Myocardial Infarction by Changes in Lead aVL

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ABSTRACT

This cross sectional comparative study was done in the Department of Cardiology, Sylhet MAG Osmani Medical College Hospital during the period of 1st July 2008 to 30th June 2010 to determine the diagnostic significance of ECG change in lead aVL in the localization of proximal left anterior descending artery (LAD) occlusion in acute anterior myocardial infarction (MI). Coronary angiogram (CAG) was used as a gold standard test for assessing ECG finding. A total of 45 admitted acute anterior MI patients were enrolled for the study with a median age of 45 years (24-70). All the 45 patients had an admission ECG and CAG within 30 days. Site of the occlusion in LAD was explored in all patients by CAG. Sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy were calculated. Occlusion was found at proximal LAD in 62.2% patients, rest 37.7% had lesions in mid or distal part of the vessel. ECG revealed abnormality in lead aVL in 70.8% patients, of them 16.13% had T inversion, 35.48% had ST elevation and 48.39% had a Q wave. Sensitivity and specificity of aVL abnormality in ECG for detecting the lesions were 89.3% and 64.7%. False negative result in ECG was only 10.7%. Positive and negative predictive values of ECG were 80.6% and 78.6% respectively. Overall, ECG made correct detection of occlusion site in 80% cases. Based on the study findings, ECG changes in lead aVL can be used to predict the occlusion site in proximal LAD. Presence of changes in lead aVL (ST elevation or Q wave or T wave inversion) should be considered a high-risk finding in acute anterior MI, indicative of proximal LAD lesion.

Key words: *Occlusion, Left anterior descending artery, Acute anterior myocardial infarction, Lead aVL.*

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INTRODUCTION

Coronary heart disease (CHD), the most common cardiovascular disease, is the major cause of death in middle aged and older people in most developed countries and many of the developing countries. WHO predicted that CHD will be the top of the contributors to disease burden by 2020 and world will face an impending epidemic of the disease[1]. The prevalence of CHD in Bangladesh was estimated as 3.3/1000 in 1976 and 17.2/1000 in 1986 indicating 5 fold increase in 10 years[2]. Three small scale population based studies showed average prevalence of ischemic heart disease as 6.5 per thousand population of Bangladesh[3]. Worldwide, 30% of all deaths can be attributed by cardiovascular diseases, of which more than half are caused by CHD. Globally, of those dying from cardiovascular diseases, 80% are in developing countries not in the western world[4].

Heart is supplied by two coronary arteries: right and left coronary artery. Left coronary artery is divided into left circumflex and left anterior descending artery. A

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large part of the myocardium of the left ventricle is perfused by the left anterior descending artery (LAD) and its occlusion thus causes severe haemodynamic deterioration, frequently resulting in rapid fatality. Prediction of LAD occlusion is important with regard to select the appropriate treatment strategy and estimating prognosis[5]. The site of occlusion in LAD is reliably predicted by 12 lead ECG in patient with acute anterior wall myocardial infarction. ST elevation of 0.5mm in lead aVL or any ST elevation in lead aVR in association with ST segment elevation in at least two contiguous precordial (V_2, V_3 or V_4) leads have a sensitivity of 94%, specificity 49%, positive predictive value 85% and a negative predictive value of 71% to predict a proximal LAD lesion[6]. Abnormal Q wave in lead aVL was associated with occlusion proximal to first diagonal (D1), whereas ST depression in aVL was suggestive of occlusion distal to first diagonal (D1)[7]. A greater degree of ST segment depression in lead III than that of ST segment elevation in lead aVL is a useful predictor of proximal LAD occlusion in patients with anterior AMI[8].

Coronary angiogram (CAG) is a gold standard investigation for detection of occlusion site. In this study specific ECG criteria in lead aVL (ST elevation or Q wave or T wave inversion) were compared with coronary angiogram for accurate detection of occlusion site in proximal LAD.

MATERIALS AND METHODS

This study was designed as a cross sectional comparative study and was conducted in the Department of Cardiology, Sylhet MAG Osmani Medical College Hospital during the period of July 1, 2008 to June 30, 2010. ECG changes in lead aVL (ST elevation or Q wave or T wave inversion) and occlusion site of LAD from coronary angiogram were the primary variables considered. A total number of forty five (45) patients with acute ST elevated anterior myocardial infarction, aged 24 to 70 years, admitted within 48 hours of onset of chest pain, were selected consecutively. Clinical history and examination findings were recorded. All the patients underwent a conventional 12 lead ECG examination on admission and coronary angiogram within 30 days after the attack of acute myocardial infarction. ECG was compared with angiographic localization of infarct related artery. After taking informed written consent, patients were interviewed for data collection using a structured questionnaire. Sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy were calculated.

RESULTS

Among 45 patients with acute anterior myocardial infarction, 31 (68.9%) had changes in lead aVL and 14 (31.1%) had no changes (Table-I). Coronary angiogram (CAG) showed 28 (62.2%) patients had occlusion in proximal LAD and 17 (37.8%) had occlusion in mid or distal LAD.

Table-I: *Distribution of types of aVL changes in ECG (n= 31).*

Abnormal aVL Status	Frequency (%)
ST elevation	11 (35.48)
Q wave	15 (48.39)
T inversion	5 (16.13)
Total	31 (100)

Table-II: *Association between different changes in aVL and proximal LAD occlusion in CAG (n= 45).*

	Proximal LAD Occlusion in CAG			
aVL Change	Positive	Negative	p	χ^2
ST elevation (n=11)	10	1	<0.05	7.36
Q wave (n=15)	11	4	>0.05	3.77
T inversion (n=5)	4	1	>0.05	0.14
Normal (n=14)	3	11	>0.05	2.57
Total (n=45)	28	17		

Diagnosis of proximal LAD occlusion by ECG changes in aVL were 31 (68.89%) and diagnosis of proximal LAD occlusion by CAG were 25 (55.56%). This difference between the two methods in the diagnosis of proximal LAD lesion was not statistically significant (p >0.05). In ECG, lead aVL were normal in 14 (31.11%) patients and among them proximal LAD lesion were in 3 patients and mid or distal lesion were in 11. The difference between two methods in the diagnosis of proximal lesion in LAD was not statistically significant (p >0.05) [Table-II].

Table-III: *Agreement between ECG changes of aVL (ST elevation or Q wave or T wave inversion) and proximal LAD occlusion confirmed by CAG (n= 45).*

Changes in Lead aVL	CAG		Total
	Proximal LAD Occlusion		
	Present	Absent	
Present	25	6	31
Absent	3	11	14
Total	28	17	45

χ^2=14.25, p <0.05, Kappa (k) = 0.84

Table-IV: *Diagnostic value of ECG in detection of lesion in the proximal LAD.*

Test	Percentage
Sensitivity	89.3
Specificity	64.7
Positive predictive value	80.6
Negative predictive value	78.6
Diagnostic accuracy	80

DISCUSSION

Current study attempted to assess the diagnostic accuracy of ECG in detecting proximal LAD lesion using CAG as gold standard. A total of 45 admitted patients with acute anterior MI were enrolled in this study. All the 45 patients underwent 12 lead ECG at admission and coronary angiogram within 30 days of index MI. Current study focused on the characteristic ECG changes in lead aVL. In this study, among the 45 patients with acute anterior MI, 14 (31.1%) ECG showed no changes in lead aVL and 31 (68.9%) patients showed aVL changes. Among the 31 patients types of aVL changes were T inversion in 5 (16.13%), ST elevation in 11 (35.48%) and Q wave in 15 (48.39%). On the other hand 14 patients had no change in lead aVL but 3 (21.43%) patients had proximal LAD lesion and 11 (78.57%) patients had mid or distal lesion. Site of occlusion in LAD was simultaneously explored in all patients by CAG. Among them, 28 (62.2%) were found to have occlusion at proximal LAD and 17 (37.7%) had lesion mid or distal LAD. Among the 28 patients of proximal LAD lesion, 25 (89.29%) patients had aVL changes and 3 (10.71%) patients had normal aVL.

Sensitivity of aVL changes in ECG in detecting culprit lesion in proximal LAD was 89.3% and specificity was 64.7%. The figures showed the ability of ECG in detecting 89% of proximal lesion confirmed by gold standard CAG and ability of excluding 65% of other than proximal lesion. ECG leaves only 6.7% false negative cases. The figures confirm the robustness of the test as diagnostic criteria of proximal lesion. Positive and negative predictive values of ECG in detecting culprit lesion were 80.6% and 78.6% respectively, which suggested that ECG is quite efficient in detecting cases with both proximal and distal lesion. Overall, ECG made correct detection in 80% cases.

Similar study was done by Kim T Y et al. (1999) shows that, among their 52 patients 24 patients had lead aVL injury pattern and 21 (87.5%) had proximal LAD lesion and 3 (12.5%) had distal lesion. In our study, 31 patients had aVL changes and 25 (80.65%) had proximal LAD lesion and 6 (19.35%) had distal lesion. This finding is similar to that study. They also showed the sensitivity and specificity of an ST injury pattern in aVL in predicting culprit lesion were 91% and 90%, respectively. In this study sensitivity and specificity was 89.3% and 64.7%. Findings of this study also correlate with the previous study.

In a study by Solisa et al.[9] showed that, among the patients with ST elevation in lead aVL 94.2% had prediagonal lesion. In present study 11 patients had ST elevation in lead aVL, among them 10 (90.9%) had prediagonal lesion. They also showed the presence of Q wave in lead aVL in 48.07% of patients. In this study 15 (33.3%) patients had Q wave in lead aVL, among them 11 (73.33%) had prediagonal lesion and 4 (26.67%) had distal lesion. This difference may be due to delayed arrival of patients to the medical contact. They also showed presence of abnormal Q wave in lead aVL and ST depression in lead III signifying the lesion proximal to the first diagonal branch ($p= 0.01$). But in this study isolated Q wave in lead aVL was not significant and do not agree ($p>0.05$ and $k= 0.31$) for proximal LAD lesion. But χ^2 value (3.77) is almost near to table value (3.84). So Q wave in aVL could be an indicator for proximal LAD lesion.

Kosuge et al.[8] in their study showed among 128 patients with anterior MI, 84 (65.63%) had prediagonal lesion and in our study among 45 patients, 28 (62.22%) had prediagonal lesion. They also mentioned the degree of ST elevation in lead aVL was significantly greater in LAD proximal to first septal and first diagonal ($p<0.001$) and present study supports this finding ($p<0.05$). Study by Eskola et al.[6] included 298 patients who had anterior MI and 146 (48.99%) had prediagonal lesion but in our study 62.22% patient had prediagonal lesion. Their result differs from current study as they included evolving anterior MI in their study. They found that ST-elevation ≥ 0.5 mm in lead aVL had sensitivity 82%, specificity 50%, positive predictive value 84% and negative predictive value 45% to predict a proximal LAD lesion. This finding is similar to the findings of current study. They also commented that ST elevation in lead aVL is a more sensitive marker of proximal LAD occlusion if patients with inferior ST elevation were excluded from the analysis.

Engelen et al.[7] did a study among 100 patients and found that, 41 (41%) had prediagonal lesion which is different from current study. They mentioned that Q wave in lead aVL was more frequent in LAD occlusion

proximal to first diagonal branch in comparison to distal occlusion (44% vs 15% p= 0.002). But in this study 15 (33.33%) patients had Q wave in lead aVL, 11 (73.33%) had prediagonal lesion and 4 (26.67%) had distal LAD lesion. They showed that Q wave in aVL had a sensitivity of 44%, specificity of 85%, and positive predictive value of 67% and negative predictive value of 69% for prediction of proximal LAD lesion. They concluded that, considering the LAD occlusion site in relation to first diagonal, an abnormal Q wave in lead aVL is suggestive of proximal occlusion, while ST depression in same lead is associated with distal occlusion. But in this study it does not predict the proximal lesion. They also mentioned that ST elevation in lead aVL was present in 83% of patients with stenosis in proximal to D1, 61% in distal lesion. But in this study 90.9% had ST elevation in lead aVL with proximal LAD lesion and 9.1% had distal LAD lesion.

Birnbaum et al.[10] found that the presence of 1 mm ST elevation in lead aVL and V_2-V_5 had good positive and negative predictive values (PPV=95, NPV=94) for prediagonal lesion but sensitivity was poor (46%). This may be due to the fact that they only included ST elevation in lead aVL and any one of other leads. They also showed that ST elevation in lead aVL also occured due to occlusion of 1st diagonal and 1st obtuse marginal artery.

Kujo et al.[11] found that ST elevation in lead aVL ≥ 0.5 mm had a sensitivity of 73% and a specificity of 78% for prediction of occlusion site proximal to the first diagonal and first septal branch. This study finding correlated with the current study.

An acute proximal obstruction of the LAD artery habitually causes extensive necrosis that is frequently accompanied by haemodynamic deterioration. Therefore, early localization of the anatomical site of the arterial lesion can be useful in evaluating myocardium at risk and in selecting the therapeutic strategy to be used. In recent years, many studies are published in the medical journals that are aimed to determine which electrocardiographic features allow identification of the artery responsible for the AMI and the location of the arterial lesion. Our study suggests that changes in lead aVL at admission ECG could be a valid marker for quick detection of proximal LAD lesion.

CONCLUSION

The study showed that ST elevation, T wave inversion and Q wave in lead aVL are useful determinant for prediction of proximal LAD lesion. Study findings suggested that the presence of characteristic ECG changes in lead aVL is highly sensitive, with high positive and negative predictive values for prediction of a lesion in proximal LAD. Although the specificity is low, relatively better negative predictive value safe guards the test of making more false positive findings. Thus, the presence of changes in lead aVL can be considered as a high-risk finding in acute anterior MI, indicative of a relatively proximal LAD lesion and ST elevation is the most important change for the detection of proximal LAD lesions.

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JALALABAD MEDICAL JOURNAL

Review Article

Insomnia - A Yet Unsolved Riddle

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ABSTRACT

Insomnia is yet one of the unsolved mysteries in sleep disorder medicine. The definition of insomnia continue to change and expand. Insomnia is grouped into primary and secondary insomnia. There are three types and four patterns of insomnia along with some co-morbid conditions.

Key words: *Insomnia, Sleeep disorder, Primary, Secondary.*

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INTRODUCTION

Insomnia has remained yet one of the unchartered waters of sleep disorder medicine[1]. That the definitions of insomnia continue to change and expand indicates that the condition is not yet thoroughly understood[2]. Moreover, literature concerning important variables involved in the complaint and its treatment is still scarce. Thus although a commonly occurring symptom in the general population, it is frequently under reported and often inappropriately treated[3].

Definition:

The most currently accepted definition of insomnia is "a sleep disorder in which there is an inability to fall asleep or to stay asleep as long as desired[1]." This sleep disorder is sometimes practically described as a positive response to either of the two questions: a) does the patient experience difficulty in sleeping or b) does the patient have difficulty in staying asleep?[2] Insomnia is often thought of as both a medical sign and a symptom that can accompany medical and psychiatric disorders and it is typically followed by functional impairment while awake. It can occur at any age but it is particularly common in the elderly[3]. Insomnia can be short term (less than 3 weeks) or long term (more than 3 weeks) and can lead to memory problems, depressions, irritability, bi-polar disorders, and increased risk of heart disease and automobile related fatal accidents.

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Grouping of insomnia:

Insomnia may be grouped into primary and secondary (Co-morbid). Primary insomnia is a sleeping disorder not attributable to any medical, psychiatric or environmental cause[4]. It is described as a complaint of prolonged onset of sleep[5], disturbances of sleep maintenance or the experience of non-refreshing sleep. Secondary insomnia has some antecedent causes.

Types of insomnia:

1) Transient: Lasts for less than one week. It can be caused by another disorder: severe trauma causing excessive pain, changes in the sleep environment, sleep timing, severe depression or stress with consequent sleepiness and impaired psychomotor performance.
2) Acute: Inability to consistently sleep well for a period of less than four weeks. Insomnia along with difficulty in initiating and maintaining the quality of sleep and the sleep is non refreshing and in turn result in problems in daytime function[6]. It is also known as stress related insomnia[7].
3) Chronic: Insomnia lasts for more than four weeks. It can itself be a primary disorder or secondary to another disorder. People with high-level of stress hormones or shift in the level of cytokines are more likely to have this disorder[8]. Its effects can vary according to its cause. It might include muscular fatigue, hallucinations, mental fatigue, and chronic insomnia might also cause diplopia[9].

Patterns of insomnia:

I. Sleep onset insomnia: Difficulty in falling asleep at

the beginning of the night; often a symptom of anxiety disorder. Delayed sleep phase can be misdiagnosed as insomnia. It causes a delayed period of sleep spilling over into daylight hours[10].

II. Poor sleep quality: Can occur as a result of for example restless leg syndrome, sleep apnea or major depression. The patient does not reach the stage III (REM sleep or Delta sleep) which has restorative properties. Major depression leads to alterations in the actions of hypothalamo-pituitary-adrenal axis causing excessive release of cortisol which can lead to poor sleep quality. Nocturnal polyurea can also be very disturbing to sleep[11].

III. Subjective insomnia: These people suffer from "sleep state misperception". They have sound sleep for eight hours each night but they believe that they have slept for only few hours.

IV. Fragmented sleep: Endocrinological disorders like hypothyroidism, diabetic neuropathy, acromegaly, Cushing's syndrome, premenstrual syndrome, and last trimester of pregnancy may cause fragmented sleep, shallow sleep and reversal of normal diurnal rhythm[12].

Co-morbid conditions causing insomnia:

* Use of psychoactive drugs, stimulants like caffeine, nicotine, cocaine, amphetamines, methyl phenidate, aripiprazole, MDMA, modafinil, excessive alcohol[13].
* Withdrawal of antianxiety drugs like benzodiazepines or pain killers like cocaine.
* Previous thoracic surgery.
* Heart disease[14].
* DNS (Nocturnal breathing disorders).
* Use of fluoroquinolones[15].
* PLMD (Periodic limb movement disorder) can cause arousals during sleep which the sleeper is unaware[16].
* Pain due to injury or disease[17].
* Hormone shifts during menopause[18].
* Life events like fear, stress, anxiety, emotional or mental tension, work problem, financial stress, childbirth, and bereavement.
* Mental disorders like bipolar disorder, clinical depression, generalized anxiety disorder, schizophrenia, OCD, PTSD, dementia[19].
* Brain lesions or traumatic brain injury.
* Abuse of OTC sleep drugs can cause rebound insomnia.
* Poor sleep hygiene (eg: excessive surrounding sounds).
* A rare genetic condition can cause a prion based, permanent and eventually fatal form of insomnia called fatal familial insomnia.

Risk factors:

a) Individuals older than 60 years.
b) History of mental health disorders.
c) Emotional stress.
d) Working late night shifts.
e) Travelling through different time zones.

Treatment:

Along with drugs (Hypnotics and sedatives) the following are helpful:

a. CBT (Cognitive behavioral therapy)[20].
b. Meditation.
c. Concomitant treatment of other diseases that the individual is suffering from.
d. Sleep hygiene (eg: quiet surrounding, sleep timing, wash of face, hand and feet with cold water before going to sleep.

CONCLUSION

Time has now come for the physicians and all concerned to pay attention to this arena of health concern.

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JALALABAD MEDICAL JOURNAL

Case Report

Ectodermal Dysplasia: A Rare Case Report

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ABSTRACT

Ectodermal dysplasia is a hereditary disorder that occurs as a consequence of disturbance in the ectoderm of the developing embryo. The triad of nail dystrophy, alopecia or hypotrichosis and palmoplantar hyperkeratosis is usually accompanied by lack of sweat glands and complete or partial absence of primary or permanent dentition. Here we report a male baby presented with absent of permanent teeth and hair and absence of sweating with heat intolerance which was characteristic phenotypic features of ectodermal dysphasia. Diagnosis was made by history, physical examination and confirmed by skin biopsy. Histopathology revealed the case as anhidrotic type of ectodermal dysplasia.

Key words: *Alopecia, Ectoderm.*

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INTRODUCTION

Ectodermal dysplasia is a group of syndromes deriving from abnormalities of the ectodermal structure[1]. It was first described by Thurman[2,3]. It is a hereditary disorder occuring as a consequence of disturbance in the ectoderm of the developing embryo. The triad of nail dystrophy (onchodysplasia), alopecia or hypotrichosis (scanty, fine, light hair on the scalp and eyebrows) and palmoplantar hyperkeratosis accompanied by lack of sweat gland and partial or complete abscence of primary or permanent dentition[3,6]. Ectodermal dysplasia represents a large and complex group of diseases comprising more than 170 different clinical conditions[4,6]. The incidence of this condition is 1:100000 with a mortality rate of 28% within 3 years of age. When at least two types of abormal ectodermal features occur, such as malformed teeth and extremely sparse hair, the patient is diagnosed as ectoddrmal dysplasia syndrome[4,5,6]. There are two major types of this condition depending on the number and functionality of the sweat glands: a) X-linked anhidrotic or hypohidrotic, where sweat glands are either absent or significantly reduced in number, b) hidrotic, where sweat glands are normal and the condition is inherited as autosomal dominant[2,3,4]. The dentition and hair are affected similarly in both types, but the hereditary patterns and nail and sweat gland manifestation tend to differ. Some ectodermal dyspalasia are only present in single family unit and derive from very recent mutation and can occur in any race; but more prevalent in fair caucasians[3].

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CASE REPORT

A 10 years old male child second issue of his non consanguinous parents got admitted into the Paediatrics department of Jalalabad Ragib-Rabeya Medical College Hospital on 22.12.12 with the complaints of absence of teeth and hair since birth, there was also complaints of heat intolerance and absence of sweating from the same duration. He was born at term by normal

vaginal delivery. His mother was on regular antenatal care during her pregnancy and she was generally healthy. Clinical examinations revealed facial dysmorphism, prominent forehead, sparse and very fine scalp hair and eyebrows, depressed nasal bridge, saddle nose, protruded lip and chin, prominent maxilla. Intraoral examination revealed absence of permanent teeth, under developed maxillary and mandibular ridges. There were no other cases of ectodermal displasia in his family.

Figure-1: *The boy with saddle nose.*

Figure-2: *Fine and thin scalp hair, eyebrows and eyelashes.*

Figure-3: *Absence of permanent teeth.*

DISCUSSION

Ectodermal dysplasia represents a large group of hereditary conditions characterised by congenital defects of one or more ectodermal structures including skin appendages. The original constructional theme encoded in the ectoderm, diverge into epidermis, hair, sweat and mammary glands and the mineralised crystalline anvils of teeeth, under the direction of local signals emanating from the underlying mesoderm. The intimate origins of these diverse ectodermal structures account for the wide spectrum of dysplasia[7].

Mutation in the, EDA, EDAR and EDARADD, genes cause ectodermal dysplasia. The EDA, EDAR and EDARADD genes provide instructions for making proteins that is responsible for critical interaction between two cell layer ectoderm and mesoderm. Mutation in the EDA, EDAR, EDARADD gene prevent the normal development of hair, sweat gland, teeth[8,9]. Dental defects include anodontia, polydontia, dysplasitic teeth, deficient enamel development (Amelogenisis imperfecta), dentine deficiency and under development of alveolar ridges[10]. Hypohidrosis accompanies slight frontal bossing and some depression of the nasal bridge. The scalp hair is often fine, dry, sparse and light in color, the nails are dystrophic and other features are cleft lip, cleft palate, syndactyly and defect of external genitalia, lacrimal gland abnormalities etc[11]. This disorder is assigned to chromosome 11_q23 by linkage mapping[12]. The gene responsible for X-linked type has been recently reported by Monreal et al, indicating that direct molecular diagnosis of the disorder is feasible and will allow for the identification of female carrier and help to distinguish between the X-linked and recessive pattern of inheritence through genetic testing[13]. Skin biopsy confirms the diagnosis. Prenatal diagnosis of

ectodermal dysplasia has occasionally been reported by foetal skin biopsy, obtained by fetoscopy at around 20 weeks of gestation[13].

CONCLUSION

Ectodermal dysplasia is a rare gentic disorder with involvement of various tissues in the body. A careful and thorough examination will lead to an accurate diagnosis. Restoration of the normal function should be the main concern in its management.

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JALALABAD MEDICAL JOURNAL

Case Report

Preservation of Fertility in Abnormally Adherent Placenta by Injection Methotrexate: A Case Report

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ABSTRACT

Placenta accreta refers to morbidly adherent human placenta that can threaten maternal life as well as fertility. Due to massive obstetrical hemorrhage it often requires peripartum hysterectomy. A case of morbidly adherent placenta following an uneventful vaginal delivery with an unscarred uterus where surgical management failed, is presented in this report. Although the patient was posted for hysterectomy, she was successfully managed conservatively by injection methotrexate as she was desirous of retaining her fertility.

Key words: *Placenta accreta, Morbidly adherent placenta, Methotrexate.*

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INTRODUCTION

Placenta accreta and its associated pathologies, percreta and increta, are uncommon but potentially lethal complication of pregnancy. It is caused when the placenta is abnormally adherent to the underlying myometrium as a result of partial or complete absence of the decidua basalis and Nitabuch's layer[1]. It is mostly diagnosed after delivery when manual removal of placenta fails. The depth of invasion includes: invasion of the superficial myomertrium (accreta), invasion into deeper myometrium (increta) and invasion through serosa and/or adjacent pelvic organs (percreta)[2]. In the literatures the term 'placenta accreta' is often used interchangeably as a general term to describe all these conditions[3].

Ideally the diagnosis might be evaluated antenatally in high risk pregnancies using ultrasound[4]. This can allow predelivery planning to reduce maternal morbidity and mortality. Unfortunately most cases are identified only at the time of delivery when forcible attempts at manual removal of placenta are unsuccessful[5].

Traditionally caesarean hysterectomy at the time of delivery has been a preferred strategy for placenta accreta[4]. Conservative strategy of leaving the excessively adherent placenta in-situ along with adjuvant injection methotrexate therapy not only prevents dreadful complications but also retain future fertility in hemodynamically stable patients desirous of future pregnancy[6].

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CASE REPORT

A 23 yrs old woman (gravida 3rd, para 0+2 abortion) was admitted at 36+ weeks of pregnancy in preterm labour. Her obstetric history was significant. She had previous two spontaneous abortion for which D & C was done. After admission she had uneventful vaginal delivery with retained placenta that resulted in moderate amount of bleeding. Bleeding ceased after uterine massage and intravenous infusion of oxytocin. Since the uterus became firmly contracted and the patient was hemodynamically stable without significant bleeding, manual removal of placenta was planned on the next day with two units of blood in hand. During operation surgeon was able to remove only small fragments of tissue as the remaining

placenta was densely adherent to the myometrium. Intraoperative vaginal bleeding occurred which was managed by fundal massage, oxytocics and blood transfusion. The bleeding settled immediately. She became hemodynamically stable with normal vital signs. On per abdominal examination uterus was enlarged to 24 weeks size and felt well contracted.

Figure-1: *MRI of post partum uterus showing echodence area invading posterior myometrium.*

Figure-2: *High resulation ultrasound of same uterus showing increased vascularity.*

Her hemoglobin was 9.8gm/dl, blood group was O+ve, total and differential count of WBC was within normal limit, with normal reading of platelet count, coagulation profile, hepatic and renal function tests. MRI, color Doppler USG and serum β HCG was done. MRI showed a placenta of about 7×4 cm almost completely invading posterior myometrium of the uterine wall (Figure-1). Color Doppler USG revealed blood flow in the spiral arteries into the intervillous space (Figure-2). Maternal serum β HCG was 1810 mIU/ml.

Our diagnosis was persistent retained placenta increta and as the patient was willing to preserve her future fertility, we decided to administer Inj. methotrexate (1mg/kg) intravenously every week with folic acid supplementation. The patient was discharged satisfactorily after one dose of methotrexate. Management then continued as an outpatient at one week interval to monitor infection and bleeding. On subsequent follow up patient remained afebrile with occasional passage of fragments of placental tissue. Total 4 doses of Inj. methotrexate were given one in each follow up.

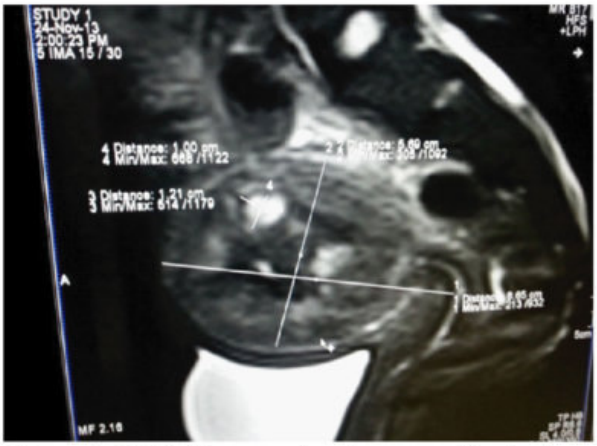

Figure-3: *MRI of uterus showing a small echodence spot on the posterior myometrium.*

We assessed the patient clinically weekly. Patient's Hb concentration, the leukocyte and platelet count, liver and renal function tests were also evaluated on weekly basis. All values remained within the normal range. Size of the uterus decreased remarkably and was not palpable abdominally after 18 days postpartum. By 25th postpartum day her serum β HCG decreased to 116 mIU/ml and became non-detectable at the end of 6 wks. Her MRI showed a small echodense spot of about 1×1cm (Figure-3) persisting on the posterior myometrium. Patient started menstruating regularly after about 3 months of delivery.

DISCUSSION

One of the potentially catastrophic obstetric complication, placenta accreta is increasing largely due to current trend towards elective repeat caesarean sections[7]. The incidence of placenta accreta is considered between 1 in 7000 to as high as 1 in 540

pregnancies[8]. The risk factors for placenta accreta are previous uterine surgery (like caesarean section, myomectomy), previous D & E, placenta previa, advanced maternal age, multiparity, Asharman's syndrome and presence of fibroids[9]. It is important to make an early and accurate diagnosis for appropriate management and reduction of associated morbidity thereof. Prenatal diagnosis may be established by ultrasound, MRI and color Doppler[10].

Though traditional management of this entity has centered upon hysterectomy but there has been a gradual shift to uterine conservation and leaving behind the adherent placenta in-situ with either a) adjuvant treatment with methotrexate in some cases[11] or b) simply awaiting its spontaneous resorption[9]. Mussali et al[12] managed three cases of placenta accreta with methotrexate and succeed in preserving the uterus in two cases. One case of placenta accreta and three cases of partial placenta increta were managed effectively with methotrexate by Sonin[13] and by Pinho et al[14] respectively.

It has been hypothesized that methotrexate acts by inducing placental necrosis and expediting more rapid involution of the placenta[15]. It has been shown to decrease trophoblastic activity and placental vascularity[11]. This contradicts the belief that methotrexate acts only on rapidly dividing cells, given that trophoblastic proliferation is not felt to occur at term[16]. There is also lack of consensus regarding the optimal dosing, frequency, or route of administration. In this particular case Inj. methotrexate in 1mg/kg body weight was used intravenously. However, it has been used intravenously, intramuscularly[17], orally[18] and in combination with an intra umbilical injection[12].

Another study on conservative management mentions leaving behind the placenta in situ with one of these associated treatments like bilateral hypogastric artery ligation, medical treatment with methotrexate or uterine artery embolization; placental resorption happened in majority of the cases with no report of maternal mortality but two cases failed where hysterectomy was performed[19].

Although conservative management of placenta accreta appears to be successful at avoiding hysterectomy in most cases, there is still potential risk of morbidity when the placenta is left in-situ. The patient requires follow up to ascertain resolution of placental tissue as well as to diagnose the complication like infection and hemorrhage. Monitoring clinically, by serial ultra sonogram and β HCG are used in this regard. USG with color Doppler and MRI has been used to monitor the placental involution. It makes sense to believe that reducing placental volume means placental involution.

CONCLUSION

Even today, the reality is that a majority of morbidly adherent placenta are diagnosed during the third stage of labour or during caesarean section which results in adverse consequences including exsanguinating hemorrhage. Although hysterectomy traditionally has been the definitive treatment for placenta accreta, obstetrician should consider medical management for patients who are clinically stable and wish to preserve fertility. Adequate transfusion and management of complication facilities, monitoring clinically and with serial β HCG and follow up USG or MRI should be available. Antepartum diagnosis should be improved among the high risk patients for placenta accreta in order to optimize conservative strategy.

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Miscellaneous

Campus News

Postgraduate Training Recognized by BCPS

A high powered inspection team consisting of nine members from 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 Bangladesh College of Physicians and Surgeons (BCPS) has extended the tenure of recognition of training imparted in the departments of **Medicine, Surgery, Paediatrics, Obstetrics & Gynaecology, Physical Medicine & Rehabilitation, Dermatology & Venereology and Cardiology** to the resident doctors for a period of five years. The council has granted recognition to the department of **Radiology & Imaging** for imparting training to the 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 in the departments of **Ophthalmology, Otolaryngology, Psychiatry, Pathology (Histopathology), Orthopaedic Surgery** and **Paediatric Surgery** were recognized by Bangladesh College of Physicians and Surgeons (BCPS) earlier and to be continued.

Programmes

* Orientation of 20th batch of Jalalabad Ragib-Rabeya Medical College was arranged on 2nd January 2014, in the college campus. Prof. Dr. Md. Aminul Haque Bhuyan honorable Vice Chancellor Shahjalal University of Science and Technology, Sylhet graced the occasion as the chief guest. Chairman of the governing body Danobir Dr. Ragib Ali was present as guest of honor and Prof. Dr. Md. Kismatul Ahsan, honorable Vice Chancellor of Leading University, Sylhet was present as special guest. The programme was presided over by the Principal Maj. Gen. (Retd) Prof. Md Nazmul Islam. All the students of 20th batch along with their guardians, teachers of this institution were present on the occasion.
* Orientation of the foreign students of 20th batch of Jalalabad Ragib-Rabeya Medical College was arranged on 25th January 2014 in the college campus. Chairman of the governing body Danobir Dr. Ragib Ali was present as the chief guest. The programme was presided over by the Principal Maj. Gen. (Retd) Prof. Md Nazmul Islam. Fifty three foriegn students of 20th batch along with some of their guardians, teachers of this institution were present on the occasion.
* 52nd meeting of the Governing Body of Jalalabad Ragib-Rabeya Medical College and Hospital was held in the college conference room on 5th February 2014. The meeting was presided over by founder of the college & hospital and chairman of governing body Danobir Dr. Ragib Ali. The member secretary and principal of JRRMC, Maj. Gen. (Retd) Prof. Md Nazmul Islam, Mr. Abdul Hye, senior vice president of Ragib-Rabeya Foundation, and other members of the governing body were also present in the meeting. The meeting approved the budget of Taka 77 crore for the next financial year.
* Twentieth Founding Day of Jalalabad Ragib-Rabeya Medical College and Hospital and a three day long 1st Reunion was observed from 6th to 8th March 2014. The occasion was enlightened by Mr. Ariful Haque Chowdhury, Honorable Mayor, Sylhet City Corporation, Prof. Pran Gopal Datta, Honorable Vice Chancellor, Bangabandhu Shekh Mujib Medical University, Prof. Dr. Md. Aminul Haque Bhuyan, Honorable Vice Chancellor, Shahjalal University of Science and Technology, Sylhet, Prof. Dr. Md. Kismatul Ahsan, Honorable Vice Chancellor, Leading University Sylhet, Prof. Morshed Ahmed Chowdhury, Dean School of Medical Sciences, SUST and Principal Sylhet MAG Osmani Medical College. Ex students, teachers and present students of this college were present on this occasion.
* Bangla Nobo Barsha was organized by the cultural committee of this college on Pohela Baishak 1421, 14th April 2014.

Seminars:

The following seminars held in Jalalabad Ragib-Rabeya Medical College during January to June 2014:

1. A seminar on **"Knee Pain Management"** was organized by the department of Orthopaedics on 18th March 2014.
2. A seminar on **"Stress Related Disorder"** was organized by the department of Psychiatry on 5th June 2014.

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

a. Concise and informative title of the article
b. Author(s) name, highest academic degree(s).
c. Name of the department(s) and institution(s).
d. 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. 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

a) 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

Parkin DM, Clayton D, Black RJ, Masuyer E, Friedl HP, Ivanov E, et al. Childhood leukaemia in Europe after chernobyl: 5 year follow-up. Br J Cancer 1996; 73:1006-12.

c) No author given

Cancer in South Africa (editorial). S Afr Med J 1948; 84:15

d) Organization as author

The cardiac society of Australia and New Zealand. Clinical exercise stress testing. Safely and performance guidelines. Med J Aust 1990; 146: 267-9.

Books and monographs

a) Personal author(s)

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

b) Editor(s),compiler(s) as author

Norman IJ, Redfern SJ, editors. Mental health care for elderly people. 5th ed. New York: Churchill Livingstone; 1999.

c) Organization as author and publisher

World Health Organization. Ethical criteria for medical drug promotion. Geneva: World Health Organization; 1988.

d) Chapter in a book

Phillips SJ, Whisnant JP. Hypertension and stroke. In: Laragh JH, Brenner BM, editors. Hypertension: pathophysiology, diagnosis and management. 2nd ed. New York: Raven Press; 1995. p 465-9.

e) Dissertation or thesis

Kaplan SJ. Post hospital home health care: the elderly access and utilization (dissertation). St. Louis (MO): Washington Uni; 1995.

Other published material

a) Newspaper article

Lee G. Hospitalization tied to ozone pollution: study estimates 50,000 admissions annually. The Washington post 1996; June 21; sect. A: 3 (col. 5).

b) Dictionary and similar references

Student's medical dictionary. 26th edi. Baltimore: Williams and Wilkins; 1995. Apraxia; p.119-20.

Unpublished material

a. In press

Leshner AI. Molecular mechanisms of cocaine addiction. N Eng J Med (in press) 1997.

Electronic material

a) Journal articles in electronic format

Morse SS. Factors in the emergence of infectious diseases. Emerg Infect Dis [serial online] 1995 Jan-Mar [cited 1996 June 5]; 1(1): [24 screens]. Available from: URL: http://www.cdc.gov/ncidod/EID/eid.htm

b) Monograph in electronic format

CDI, clinical dermatology illustrated [monograph on CD-ROM]. Reeves JRT, Maibach H. CMEA Multimedia group, producers. 2nd ed. Version 2.0. San Diego: CAEA; 1995.

C) Computer files

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

Table(s)

Each table should be typed on a separate sheet, brief title for each and should be numbered consecutively using Roman numbers and be cited in the consecutive order. Internal horizontal and vertical lines should not be used.

Illustration(s)
(Figure(s), photograph(s) etc.)

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Acknowledgement should appear at the end of the manuscripts before references.

Review and action

Manuscripts are usually examined by the editorial staff and are sent to outside reviewers. Author's suggestion regarding the names of possible reviewers is encouraged, but editorial board reserves the right of final selection.

Submission

Please send the manuscript(s) to

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