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Instruction to Authors

Original Article

Case Report

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Original Article

Study of Serum FT_3, FT_4 and TSH Levels in Pregnant Women

Yeasmin S[1], Hossain AFMA[2], Yeasmin T[3], Amin MR[4]

Abstract

Thyroid disease have a strong predominance in woman of childbearing age. Pregnancy may be associated with thyroid dysfunction. Our objective was to assess the serum FT_3, FT_4 and TSH levels in pregnant women. This cross-sectional analytical study was done in the Department of Physiology of Dhaka Medical College from July 2006- June 2007. Total 50 apparently healthy women of low socioeconomic class, age ranged from 18-40 years were selected from the Outpatient Department of urban primary health care project at Mirpur, Dhaka. Out of them 30 pregnant women of different trimester were taken as study group and 20 age matched non pregnant women were taken as control. Serum FT_3, FT_4 and TSH levels were parameters in both groups. Statistical analysis was done by the SPSS 12.0 programme. The means (±SD) of serum FT_3 levels were 6.36 ± 1.16 p mol/L and 6.38 ± 1.38 p mol/L, FT_4 levels were 20.25 ± 4.77 pmol/L and 19.39 ± 8.17 pmol/L and TSH levels were 0.96 ± 0.96 mIu/L and 1.27 ± 0.86 mIu/L in group A (Study) and group B (control) respectively. The difference of means (SD) of serum FT_3, FT_4 and TSH levels were not significant ($p>0.05$) between group A and B. From the statistical analysis of the results obtained in the present study and their comparison with those of published reports, it may be concluded that there is no change of serum FT_3, FT_4 and TSH levels in pregnancy.

Keywords: Thyroid hormone level, TSH, Pregnancy, Antenatal checkup.

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Introduction

Pregnancy is a physiological condition in female. Many changes occur in pregnancy. During pregnancy hormonal changes include not only oestrogen and progesterone level but also other hormones like thyroid hormone[1]. The endocrine glands play very important role in the physiology of reproduction. During pregnancy, physiological alteration of various endocrine glands namely the pituitary, thyroid, parathyroid, adrenals and pancreas, show distinct physiological changes leading to increase in output of respective hormones. The basic purpose of these changes is to adjust the internal environment of the mother to meet the additional requirements impose by metabolic changes during pregnancy as well as to met the extra demands by the growing fetus[2]. Common thyroid diseases have a strong predominance in women of childbearing age. For this reason, assessment of thyroid function during pregnancy is very important. Proper diagnosis and treatment of thyroid dysfunction during pregnancy is important to avoid both fetal & maternal complications. Assessment of both hyper & hypothyroidism during pregnancy should be done with a careful measurement of TSH & free thyroid hormones[3]. Thyroid hormones are essential for normal growth and skeletal maturation. They potentiate the effect of growth hormone on the tissue. In hypothyroid children bone growth is slowed and epiphyseal closure is delayed[4]. Thyroid hormones have important roles in embryogenesis and fetal maturation[5]. In hypothyroidism mentation is slow and the CSF protein level is elevated. Thyroid hormones have marked effects on brain development and its deficiency affects the cerebral cortex, basal ganglia and cochlea. Consequently, thyroid hormones deficiency during development causes mental retardation, motor rigidity and deaf-mutism[4]. Thyroxine plays a very important role in the development and maturation of the central nervous system in utero and in the immediate post natal periods[6]. Mildly increased serum TSH levels during pregnancy might also increase the risk of fetal death. So, TSH measurement should be a routine screening for thyroid dysfunction before or during first trimester of pregnancy[7]. Currently FT_3, FT_4 and TSH are the front line tests for evaluating thyroid functional status. The TSH test is the best early indicator of thyroid dysfunctions. In screening the TSH test is considered a cost-effective gold standard for evaluating thyroid function. If the TSH result

is abnormal, the FT_4 level is tested. If FT_4 is normal, the FT_3 level is tested for disorders[8]. The thyroid abnormalities during gestation suggests that screening for thyroid dysfunction in relation to pregnancy should be strongly considered. A free serum level is more accurate in detecting thyroid activity than a total serum level, which is affected by protein binding. Free T_3 & T_4 levels are not influenced by the degree of protein binding, which can be affected by numerous factors (illness, genetics, medications). So, FT_3 & FT_4 are the true markers of thyroid hormones biological activity[9]. So, the present study has been designed to asses the thyroid functional status by measuring FT_3, FT_4 & TSH levels in pregnant women and to compare these values with the control group (non- pregnant). The study result will help us to determine whether the thyroid function tests are to be included as a routine test during antenatal check-up or not.

Materials and Methods

This Cross-sectional analytical study was done in the Department of Physiology in Dhaka Medical College, Dhaka from July 2006- June 2007. Permission was taken from the concerned Departments & authorities after getting recommendation of ethical committee. Informed written consent was taken from all the study subjects after full explanation of nature and purpose of the study. Total 50 subjects of age ranged from 18-40 years were selected from the out patient department of urban primary health care project at Mirpur, Dhaka, who belong to low socio-economic status. Out of total 50 subjects 30 were pregnant women(Group-A) and 20 were non-pregnant women of child bearing age (Group-B). Group A was again subdivided in to three sub-groups (A_1- Pregnant women of first trimester, A_2- Pregnant women of second trimester, A_3- Pregnant women of third trimester). Estimation of serum FT_3 and FT_4 of study subjects by RIA and estimation of serum TSH of study subjects by IRMA at center for nuclear medicine & ultrasound, DMCH campus, Dhaka were taken as parameters of both groups. Study subjects were selected considering inclusion and exclusion criteria. Inclusion criteria were - a)Age 18 - 40 years b) Pregnant women c) No clinical evidence of thyroid disease.

Exclusion criteria were - a) Subject with pregnancy complication b) Subject with Diabetes Mellitus, renal or hepatic disorders c) Subject received lipiodol injection or any other medication known to influence thyroid function. All the subjects were explained about the aim and objective of this study. The test procedure was briefed and demonstrated. Written consent was taken before performing the test. Detailed history of each subject was obtained by using a pretested questionnaire. Clinical examination of these subjects was done before taking blood samples. The sample was selected randomly according to the inclusion & exclusion criteria. With all was drawn from the ante-cubital vein in a disposable syringe and then blood was immediately transferred to a dry clean test tube and allowed to clot. After clot formation, serum was separated by centrifuging the blood at 3000 rpm for 5 minutes. Serum was kept in micro centrifuge tube after labeling and was preserved at-40ºC until analysis. All data were checked and edited after collection. Then the data were entered into computer and analyzed with the help of SPSS 12 programme and significance test were done by unpaired Student's 't' test.

Results

The means (±SD) of serum FT_3 levels were 6.36 ±1.16 pmol/L and 6.38 ±1.38 pmol/L in group A (Study) and group B (control) respectively. The difference of means (± SD) of serum FT_3 levels were not significant (p>0.05) between group A and B. (table I)

Table I: FT_3 level in study and control group (n=50)

Group	n=50	Minimum pmol/L	Maximum pmol/L	Mean± SD	t	p	Remark
Study	30	2.83	8.53	6.36±1.16	0.048	>0.05	Not Significant
Control	20	4.78	11.22	6.38±1.38			

Data were expressed as mean ±SD n: Number of the subject

Group A: pregnant women (Study)

Group B : Non pregnant women(Control)

SD : Standard deviation p : probability value

The means (±SD) of serum FT_4 levels Were 20.25 ±4.77 pmol/L and 19.39 ±8.17 pmol/L in group A (study) and group B (control) respectively. The difference of means (± SD) of serum FT_4 levels were not significant (p>0.05) between group A and B.(table II)

Table II: FT_4 level in study and control group(n=50)

Group	n=50	Minimum pmol/L	Maximum pmol/L	Mean± SD	t	p	Remark
study	30	12.04	33.69	20.25±4.77	.470	>0.05	Not Significant
Control	20	6.38	48.40	19.39±8.17			

The means (±SD) of serum TSH levels were

0.96 ± ± 0.96 mIu/L and 1.27 0.86 mIu/L in group A (study) and group B (control) respectively. The difference of means (SD) of serum TSH levels were not significant (p>0.05) between group A and B.(table III)

Table III: TSH level in study and control group (n=50)

Group	n=50	Minimum mIu/L	Maximum mIu/L	Mean ± SD	t	p	Remark
Study 30	3.35	0.96	0.96	1.169 ±	>0.05	0.16	Not Significant

The results are expressed as follows:

1. Serum FT_3 : p mol 2. Serum FT_4 : p mol/L 3. Serum TSH : mIu/L

Results were expressed as mean ± SD (Standard deviation). The statistical significance of difference between the groups were evaluated by using Student's 't' test in case of control and study groups and by ANOVA test in case of subgroups (study).

Group A- Pregnant women (study), Group A_1-Pregnant women of first trimester, Group A_2-Pregnant women of second trimester, Group A_3-Pregnant women of third trimester, Group B-Non pregnant women of child bearing Age (control).

p values were obtained by Student's 't' test and by ANOVA test.

$p > 0.05$ = Not significant, $p < 0.05$ = Significant

$p < 0.01$ = Very significant, $p < 0.001$ = Highly significant

Discussion

The present study has been undertaken to evaluate the changes of serum FT_3, FT_4 and TSH levels in pregnant women and non pregnant women. For that purpose serum FT_3, FT_4 and TSH levels were estimated in pregnant and non pregnant women.

Total 50 subjects age ranged from 18-40 years were selected, of whom 30 were pregnant women (study group) and 20 were non pregnant women (control group). The pregnant women were again grouped into three groups according to the duration of pregnancy. The subjects were from low socio economic status and were free from disease. Pulse rate, resting blood pressure of all the subjects were recorded before collection of blood.

In this study the mean serum FT_3 levels were 6.36±1.16 p mol/L and 6.38±1.38 p mol/L in case and control group respectively and mean serum FT_4 levels were 20.25±4.77 p mol/L and 19.39±8.17 p mol/L in pregnant and non pregnant women respectively. The difference of means (±SD) of serum FT_3 and FT_4 levels were not statistically significant (p>0.05).

These findings are also consistent with those reported by Corinne *et. al* (1999) [3] . Some studies have shown a decrease in free hormones during pregnancy[10]. Pregnant women on average had lower free hormone concentrations at term than non pregnant women and studies have shown that serum FT_3 and FT_4 are about 25% lower in women at delivery than non pregnant women[11]. Where as some other studies have shown an increase[12]. However most pregnant women (>78%) remain within the same reference interval as non pregnant women[13] . Serum free T_4 and T_3 levels were significantly elevated throughout the pregnancy in comparison with non pregnant. FT_4 concentration was elevated after 10 weeks of pregnancy and FT_3 concentration was elevated at 13-20 weeks[14]. During the first 5 weeks of pregnancy mean serum free T_4 and free T_3 levels were 50% higher than in non pregnant women or women during the third trimester. FT_4 was increased significantly throughout the first trimester but FT_3 was significantly above control values only during the first 5 weeks. FT_4 and FT_3 levels decreased to control levels in the third trimester. These changes in FT_4 and FT_3 concentrations are consistent with a weak thyrotropic action of Human Chorionic Gonadotropin hormone (HCG), which attained maximum concentrations early in the first trimester and then decreased markedly in the second and third trimester[12] .

In present study the mean (±SD) serum TSH levels were 0.96±0.96 mIu/L and 1.27±0.86 mIu/L in experimental and control group respectively. The difference of means (±SD) of serum TSH levels were not statistically significant (p>0.05). This finding is also consistent with those reported by Corinne *et. al* (1999) [3] . TSH levels are significantly lower at 9-12 weeks compared with the rest of the pregnancy. HCG may be a weak thyroid stimulator that causes a modest rise in free thyroid hormones early in the pregnancy which in turn causes a modest reduction in pituitary TSH secretion[14]. High concentration of HCG present in the first trimester of pregnancy causes the reduction in TSH level[15]. TSH level is decreased in the first trimester and then return to normal throughout the duration of pregnancy. Normal TSH level throughout the pregnancy indicates thyroid is functioning normally [16]. From the statistical analysis of the results obtained in the present study and their comparison with those of published reports, it may be concluded that there is no change of serum FT_3, FT_4 and TSH levels in pregnancy. So, the study result will help us to determine that the "Thyroid function tests" are not necessary to include as a routine test during antenatal check-up.

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Original Article

Evaluation of Short Term Fever with Flu like Symptoms in a Tertiary Level Hospital in Bangladesh

Majumder MMI[1], Ahmed MT[2], Nath SCD[3]

Abstract

Short term fever, a major public health concern is commonly caused by influenza virus. This is a cross-sectional surveillance study designed to identify common causes of short term fever and diversity of causative different viral strains specially influenza virus, done in medicine and pediatrics department, Comilla Medical College Hospital, Bangladesh from November 2013 to October 2014. Patients having fever with flu like symptoms for less than 7 days was selected. Nasopharyngeal swab was analyzed by RT-PCR for detection of influenza A and B with other respiratory virus. Routine blood test, Malaria detection, blood culture for Salmonella, urine culture was done.Out of 529 patients virus was isolated in 122, of which Influenza, non influenza and mixed viral pathogens was isolated in 65,48 and 9 patients respectively. Salmonella, Malarial parasites and urinary tract infection (UTI) was found in 40, 4 and 8 cases respectively. Sixty five patients was detected influenza A and B (31vs34), with both A & B in one patient. Most of Influenza A and B cases were found in early monsoon. Among Influenza A positive cases, 29 belonged to H3N2 and 2 cases H1N1 (pdm09) subtype. This study revealed influenza A and B, salmonellosis and other non influenza viruses as main etiology of short term fever. RT PCR for virus is an important investigation for viral detection. Blood and urine culture is adjunctive investigation to detect salmonellosis and UTI. No avian and swain flue was detected.

Keywards: Short term fever, flu like symptoms, influenza virus, RT-PCR, culture.

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Introduction

Short term fever with flu like symptoms is a major public health concern globally which is commonly caused by viruses, out of which influenza virus most common. Other common causes are enteric fever, malaria and urinary tract infection (UTI). Influenza is caused by influenza viruses A and B. The emergence of different influenza viruses caused by antigenic shift results in influenza pandemic.[1]Risk for complications and death following influenza infection is higher among young children, pregnant women, older persons, and persons with some chronic medical conditions[2] According to the Centers for Disease Control and Prevention, 5 to 20 percent of the population is infected with the flu each year in the United States[2]. The World Health Organization (WHO) reports that throughout the world, annual outbreaks result in 3-5 million severe cases and results 250,000 to 500,000 deaths[2]. Influenza A viruses are divided into subtypes based on two proteins on the surface of the virus: the hemagglutinin (H) which has 18 different sub type and the neuraminidase (N) has got 11 different neuraminidase subtypes.[1,3] In the spring of 2009, a new influenza A (H1N1) virus emerged to cause illness in people.[1] That virus (often called "2009 H1N1") has now replaced the H1N1 virus that was previously circulating in humans.[1]Occasionally, viruses are transmitted from wild aquatic birds to domestic poultry which may cause an outbreak and give rise to human influenza pandemics.[4,5] Three influenza pandemics occurred in the 20th century each following a major genetic change in the virus and killed millions of people which is highly virulent and had a direct adaptation to human[6]. A new strain of highly pathogenic avian influenza A (H5N1) has been circulating among birds in eastern Asia since 1996 [7] The virus has gradually expanded the host range from wild to domestic birds and animals and is becoming more pathogenic. In Asia in the 1990s a deadly avian strain of H5N1 has posed the greatest influenza pandemic threat. Common cold is a less severe disease different from influenza may sometimes confusedwith influenza.[8] Parainfluenza can cause short term fever in milder form. UTI, malaria, enteric fever are common cause of febrile illness in our country. Some of the patients of enteric fever sometimes present with flu like symptoms[9] and simultaneously classical step ladder pattern of fever is altered by analgesic

to differentiate from flu or other viral illness. Bangladesh is the eighth most populous country in the world [10] with low environmental hygiene and poor health sector related economical support. So there is every chance of rapid spread of infection. To prevent such hazards, it is necessary to identify common possible causes of short term fever caused by common viruses including influenza virus bacteria and parasites. This surveillance study was designed to evaluate common etiology of short term fever with flu like symptoms and diversity of viral strains specially influenza virus.

Materials and Methods

This is a cross-sectional surveillance study done in Comilla Medical College Hospital, Comilla for 1 year during the period of 1st November 2013 to 30th October 2014. All indoor and outdoor patients of medicine and pediatrics department presented with history of fever, cough, sore throat and running nose for less than 7 days was included in this study. Detailed history regarding age, socioeconomic status, residential status, seasonal effect, sanitation, travelling history, family history was collected in prescribed data collection form. To determine common viral causes like influenza, with proper aseptic measures, swab was collected from throat &nasopharynx and kept in viral transport media. Specimens was directly stored at dry shippers at or below -700c and transported to icddr,b Dhaka virology laboratory and stored in liquid nitrogen dewars at or below -70ºc until time of analysis. Sample was analyzed by real time reverse transcriptase-polymerase chain reaction (RT-PCR) for detection of influenza A and B, as well as H1, H3, two different versions of H5, six other respiratory viruses (human metapneumovirus (hMPV), respiratory syncytal virus (RSV), parainfluenza virus 1, 2 & 3 and adenovirus. A subset specimens of severe \ respiratory tract infection was also be tested for more than 21 respiratory pathogens using Taqman Array Card. Negative for the above respiratory pathogens was also tested for new pathogen discovery This project is being continued in joined collaboration with icddr,b Dhaka. Blood was examined for complete count and malarial parasites. Urine for R/M/E with culture and sensitivity was done by Kirby- Bauer disc diffusion technique using Muller Hinton Agar as per recommendation of clinical and Laboratory Standard Institute[11]. After aseptic precaution 10 ml blood from adult and 7 ml blood from pediatric patient was collected and was transfer to bottle containing 50 ml and 30 ml media of automated blood culture system for adult and pediatric patient respectively. It was incubated up to 5 days for salmonella. Growth was isolated and anti microbial susceptibility were tested by Kirby- Bauer disc diffusion technique using Muller Hinton Agar as per recommendation of clinical and Laboratory Standard Institute[12].

Results

Our analysis included indoor and outdoor patients that participated in this study during the period of 1st November' 2012 to 31st October' 2013. Descriptive statistics were used to summarize and processing of all results from prescribed data collection form and laboratory results. This study was in collaboration of icddr,b, Dhaka, Bangladesh, for their virological report based on RT-PCR and also investigations from Comillamedical college hospital microbiological laboratory. Baseline characteristics shown in table I. It can be noted that most of the patients were from middle class family (73%) and rural area (68%). Out of 529 patients 298 (56.32%) was male.

Table- I: Base line characteristics of the study population

Age ranges (in years)	Frequency	Percentage
1-15	22	4.2
16-24	139	26.3
25-39	169	31.9
40-59	127	24
≥ 60	72	13.6
Total	529	100.0
Sex distribution		
Male	298	56.32
Female	231	43.66
Educational status		
Illiterate	224	42.3
Primary	106	20.03
SSC	96	18.2
HSC	75	14.2
Graduate	28	5.29
Socio-economic status		
Lower class	144	27.2
Middle class	357	67.5
Higher class	28	5.2
Residential status		
Rural	360	68.04
Urban	169	31.95
Associated disease		
Diabetes mellitus	9	1.7
Hypertension	2	0.37
Coronary heart disease	14	2.64
COPD	04	0.74
Asthma	48	9.07
Personal history		
Tobacco chewing	19	3.6
Smoker	24	4.53
Taking OCP	9	1.7

Table II shows viral infection was the most common cause of in short term pyrexia which consists of total 122 (23%) cases. It can also observed that 67% cases no specific cause was identified.Out of total 529 patients 40 samples (7.56%) shows blood culture positive for salmonella. The salmonella infection was not co infected with influenza and other respiratory viral infection.

Table- II: Common pathogens identified in short term pyrexia (n=529)

Aetiology	Frequency	Percentage
Viral pathogens	122	23.06
Salmonella	40	7.56
UTI	8	1.52
Malaria	4	.76

In table III showed distribution of total viral pathogens. Out of total 122 viral pathogens 53.28% are single flu pathogen. Out of 65 influenza patients influenza A and B are 47% and 51.5% respectively and 1(1.51%) patient had both influenza A&B virus.

Table-III: Distribution of total viral pathogens (n=122)

Pathogens	Frequency	Percent
Single flu	65	53.28
Single non-flu	48	39.34
Mixed	9	07.38
Total=	122	100

Table- IV: Distribution influenza A subtypes (n=62)

Influenza A subtypes	Frequency	Percent
H3N2	29	93.55
H1N1(pdm09)	2	6.45
Total	31	100

Influenza A sub typing shown in table V where most of the patients (93.55%) are belongs to H3N2 subtype.

Table- V: Seasonal variation of influenza viruses: (n=62)

Months	Sample	flu	flu percent	A	B	A+B
Nov-2013	38	4	11%	3	1	-
Dec-2013	34	2	6%	-	2	-
Jan-2014	61	3	5%	-	3	-
Feb-2014	50	2	4%	-	2	-
Mar-2014	60	3	5%	1	2	-
Apr-2014	47	3	6%	1	2	-
May-2014	43	1	2%	1	-	-
Jun-2014	43	18	42%	16	1	1
Jul-2014	34	17	50%	8	9	-
Aug-2014	35	8	23%	1	7	-
Sep-2014	42	2	5%	-	2	-
Oct-2014	42	3	7%	-	3	-

Table VI shows seasonal variation of influenza A viruses. Most of the samples were collected in between January to March and maximum flu +ve sample (35 samples) was found in June and July in the early Monsoon.

Table- VI: Respiratory virus other than influenza: (n=57)

Organisms	Frequency	Percent (out of total virus)
Parainfluenza virus 1	4	3.27
Parainfluenza virus 2	2	1.64
Parainfluenza virus 3	6	4.92
Human metapneumovirus	5	4.1
Respiratory syncytial virus	19	15.57
Adenovirus	12	9.84
Mixed	9	7.38
Total	57	46.72

Discussion

Considering demography, economic profile and social condition of our country, infectious disease are more common in Bangladesh, South East Asia including Bangladesh and male patients seek more medical attention than female. Viral infection endemic occurred in different parts of the world although no such epidemic was recorded in Bangladesh. Viral fever, enteric fever, urinary tract infection, malaria are the most common causes of febrile illness in our country. Short duration fever in developing countries is due to multifaceted infection by bacteria, virus and parasites[13]. For rational treatment, identification of causes is vital because of misuse and overuse of antibiotics causes antibiotic resistance which is a growing problem across the world.[14] In this study, out of 529 collected specimens 66 (12.47%) were influenza positive although all of these patients presented in our hospital with influenza like symptoms. Another study by ICDDRB during May 2007 and December 2008 the shows out of total 3,699 patients, 385 (10%) were influenza positive which was similar to our study.[15] RT-PCR shows no avian influenza and swain flu virus. We can also conclude that common influenza vaccine could be effective in 12% patients of short term fever with influenza like symptoms. In this study influenza peaked in June-July, early Monson which is similar to a community-based survey in Thailand.[16] Press release Hong Kong shows highest flu activity was recorded in late May.[17] Viral aetiology was confirmed in 122 (23%) patients where plan of treatment should be only supportive. Out of total 529 blood cultures *S. typhi and S. paratyphi* was found in 6.80% and 0.76 % patients respectively. UTI was found in 1.57% patients. It can be concluded that antibiotics has definite role in 9.13% patients. Most of our patients of pyrexia of acute onset treated with antimicrobial agent where antibiotic has got no role in all patients. We recommend using antibiotics according to culture and sensitivity report. Widespread use of antimicrobial drugs in general population will lead to develop antimicrobial resistance. All in tertiary level hospital we should arrange all modern facilities for detection of viruses, bacteria and parasites. We

credit equally for the study and preparing the manuscript. Most of Influenza A and B cases were found in June and July, in early monsoon. Influenza A positive cases, belonged to H3N2 and cases H1N1 (pdm09) subtype. This study revealed influenza A and B, salmonellosis and other non influenza viruses as etiology of short term fever. RT PCR for virus is important investigation for viral detection. Blood for culture and sensitivity is adjunctive investigation to detect salmonellosis. No avian and swain flue was detected.This study revealed influenza A and B, other non influenza viruses and salmonellosis as etiology of short term fever. Most of Influenza A and B cases were found in early monsoon. Influenza A positive cases, belonged to H3N2 and H1N1 (pdm09) subtype. RT PCR for virus is important investigation for viral detection. No avian and swain flue was detected.

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Original Article

Effectiveness of Levofloxacin in Community Acquired Pneumonia in Adult Bangladeshi Population

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Abstract

Community- acquired pneumonia (CAP) is a common condition with a significant mortality. Levofloxacin is recommended for the empiric management of CAP in inpatienst and outpatients. The present study conducted to find out the effectiveness of Levofloxacin in CAP among Bangladeshi Population. Total 50 Patients aged more than 18 years, diagnosed pneumonia based upon clinical features of respiratory tract infection and rediological changes, were included in this study. The study consists of four visits: first one for screening and enrollment. Second visit on day 2-4 during which patient on therapy, third visit 5-7 day after the last dose of the drug and fourth visit 28days after the last dose of the drug. The mean # SD of age of the respondents was 34.3# 19.1 years with a range of 18-100 years. Among the respondents 62.0% were male and 38.0% were female. Most of the respondents presented with fever (98.0%) and cough (100.0%) and chest pain was present in 66.0% cases. Ninety six percent respondents presented with productive cough and only 4.0% respondents with dry cough. Consolidation in left lower zone was the most common findings (32.0%) followed by consolidation in right mild zone (30.0%). Among the respondents 32.0% were treated with oral form and 68.0% were treated with injectable form of levofloxacin. About 92.0% were improved with the treatment. Levofloxacin monotherapy is well tolerated, cost-effective treatment for patients with CAP. Further large scale multi- centered study will help to strengthen this outcome.

Keywords: Community- acquired pneumonia (CAP); Levofloxacin.

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Introduction

Community-acquired pneumonia (CAP) is defined as signs and symptoms of an acute infection of the pulmonary parenchyma in a previously healthy patient who acquired the infection in the community[1,2]. The diagnosis of CAP is based primarily on clinical factors: a combination of signs and symptoms such as cough, fever, chills, sputum production, dyspnea, pleuritic pain, tachypnea, tachycardia, hypoxemia, features of consolidation on auscultation, and a new infiltrate on chest imaging[3]. CAP is a common and potentially serious illness with considerable morbidity worldwide and places a large burden on medical and economic resources[4-6]. It is the leading cause of death in the world and remains a common and serious illness despite the availability of potent new anti- microbials and effective vaccines[7,8]. The mortality rate of pneumonia patients in out-patient settings is low, in the range of one to five per cent, but among patients who require admission to ICU it approaches 25%[9-12]. Despite the availability of effective antimicrobial agents, CAP remains a significant cause of morbidity and mortality worldwide, especially among elderly individuals and individuals with coexisting disease[8,13]. Today, physicians must choose an optimal therapeutic regimen that eradicates the respiratory infection effectively, minimizes the risk of development of resistance, and does not compromise the safety of the patient[6]. Treatment of patients with CAP is often empiric. Any agent selected for empirical therapy should have good activity against pathogens associated with CAP, a favorable tolerability profile and be administered in a simple dosage regimen for good compliance[4]. Strategies for the empirical treatment of CAP are complicated by shifting etiologies and the emergence of drug-resistant pathogens[14]. Streptococcus pneumonia has been identified as the commonest organism causing CAP all over the world[6,8,14-20]. But some studies, over the last three decades, have reported of increased incidence of pneumonia due to "atypical" and gram- negative organisms[10,14,19,21-24]. Previously effective therapy for CAP has traditionally been accomplished with B- lactam antibiotics, macrolides, trimethoprim/ sulfamethoxazole and tetracyclins. However, increasing antibiotic resistance has been observed for several common pathogens in CAP including *S. pneumonia, H. influenza, M. Catarrhalis, S.aurius* and gram negative bacteria[10]. Increased prevalence of drug-resistant strains remains a primary

concern in the treatment of CAP[6]. The respiratory fluoroquinolones have gained a reputation as a highly effective and well- tolerated option for the first-line treatment of CAP[6-8,25]. Levofloxacin is a fluoroquinolone antibacterial agent with a broad spectrum of activity against Gram-positive and Gram-negative bacteria and atypical respiratory pathogens. It is active against both penicillin-susceptible and penicillin-resistant *Streptococcus pneumonia* and recommended for the empiric management of CAP in inpatients and outpatients[7,8,25-27]. Some studies showed that in the treatment of CAP Levofloxacin alone is comparable to or better than combination therapy like injectable 3rd generation Cephalosporin plus Macrolides[5]. Levofloxacin was effective in treating patients infected with *S. pneumonia* that was nonsusceptible (intermediately resistant or resistant) to Penicillin[6]. Levofloxacin was also a beneficial treatment for CAP from a pharmacoeconomic perspective[7,8,28]. Several published articles provide data from clinical trials measuring the efficacy and safety of levofloxacin used in the treatment of CAP and CAP-related infections[6]. So far we know there are limited data about efficacy of levofloxacin in the treatment of CAP in Bangladeshi population. The present study conducted to find out the effectiveness of Levofloxacin in CAP among Bangladeshi population.

Materials and Methods

This prospective observational study was conducted from February to November in 2010 at Uttara Adhunik Medical College Hospital. The study consists of four visits: first one for screening and enrollment, other 3 visits for assessment of safety and effectiveness. Second visit on day 2-4 during which patient on therapy, third visit 5-7 days after the last dose of the drug that is post therapy visit and fourth visit 28 days after the last dose of the drug that is post study follow-up. Approximately 6 weeks needed to complete the study. Total 50 patients aged more than 18 years, diagnosed pneumonia based upon clinical signs and symptoms of lower respiratory tract infection including at least 2 of fever, cough, greenish- yellow sputum, chest pain, shortness of breath, or evidence of decreased lung function during the physical examination, has a chest x-ray findings consistent with acute pneumonia, previously received antibiotics for pneumonia if the duration of therapy was <24 hours were included in the study. Patients having allergic or serious adverse reaction to any antibiotic similar to those used in this study or to penicillin, collection of pus in the cavity between the lung and the membrane that surrounds it, cystic fibrosis, severe kidney failure, decreased in white blood cell count, seizure disorder or any unstable psychiatric condition were excluded from this study. Those fulfilled the diagnostic criteria were enrolled in the study and treated with oral Levofloxacin 750mg once daily for 10 days or injectable Levofloxacin 500mg once daily for same duration. Data were collected by face to face interview with a predesigned questionnaire. Data were analysed with statistical software and presented in frequency and percentage in tabulated form.

Results

The mean ± SD of age the respondents was 34.32± 19.12 with a range of 18-100. Among the respondents 31 (62.0%) were male and 19(38.0%) were female. The male and female ratio was 1.63:1. Among the respondents 13(26.0%) were in the age group of less than 20 years, 15(30.0%) were in the age group of 21-30 years, 5(10.0%) were in the age group of 31-40 years, 7(14.0%) were in age group of 41-50 years and rest 10 (20.0%) were in the age group of more than 50 years. Among the respondents 3 (6.0%) were diabetic and 10(20.0%) were hypertensive. Most of the respondents presented with fever (98.0%) and cough (100.0%) and chest pain was present in 66.0% cases. 48 (96.0%) respondents presented with productive cough and rest 2 (4.0%) respondents presented with productive with dry cough (table I).

Table- I: Distribution of characteristics of the respondents

Variables	Frequency	Percentage
Age group		
<20	13	26.0
21-30	15	30.0
31-40	5	10.0
41-50	07	14.0
>50	10	20.0
Mean ± SD	34.32 ± 19.12 (18-100)	
Sex		
Male		

Table- II: Distribution of the clinical Laboratory findings of the respondents (n=50)

Laboratory findings	Mean ± SD	Range
TC	15.13 ± 6.71	4.10-31.70
Platelet count		
223.14 ± 42.77	100.00-320.00	
ESR		
58.58±29.97	9.00-125.00	
Neutrophils		
78.00±10.46	45.00-92.00	
Lymphocytes		
15.50±8.53	5.00-50.00	
Eosinophils		
2.50±1.60	1.00-9.00	
Monocytes		
3.26±1.24	1.00-600	

Consolidation in left lower zone was the most common findings in left lower zone was the most common findings (32.0%) followed by Consolidation in right mild zone (30.0%). Other findings were consolidation in right lower zone, consolidation in left mild zone and consolidation in right upper zone were 20.0%, 08.0% and 6.0% respectively (table III).

Table- III: Distribution of the findings of the chest X ray of the respondents (n=50)

CliestXrayP/Avie	Frequency	Percent
Consolidation in Rt	15	30.0

Table- IV: Distribution of study population according to form of medicine taken (n= 50)

Form of medicine taken	Frequency	Percent
Oral	16	32.0
Injection	34	68.0
Total	50	100.0

Among the 50 respondents 46 (92.0%) were improved with the treatment and rest 4 (8.0%) were not improved with the treatment (table V).

Table- V: Distribution of the respondents according to the response of the treatment (n=50)

Clinical features	Frequency	Percent
Improved	46	92.0
Not- improved		

white blood cell count (WBC)[31]. But a WBC of > = 10.4 was not helpful in predicting radiologically defined pneumonia unless symptoms had been present for seven days or more. In CAP due to Streptococcus pneumonia, the commonest organism, leukocytosis is common and early in the disease, chest X-ray findings may be normal, but later, they may show classic lobar pneumonia[20]. Chest radiography (posteroanterior and lateral views) has been shown to be a critical component in diagnosing pneumonia. According to the latest American Thoracic Society (ATS) guidelines for the diagnosis and treatment of adults with CAP, " all patients with suspected CAP should have a chest radiograph to establish the diagnosis and indentify complications (Pleural effusion, multilobar disease)." Chest radiography may reveal a lobar consolidation, which is common in typical pneumonia; or it could show bilateral, more diffuse infiltrates commonly seen in atypical pneumonia. However, chest radiography performed early in the course of the disease could be negative[30]. In the present study cjonsolidation in left lower zone was the most common findings (32.0%) followed by consolidation in right mild zone (30.0%) Other findings were consolidation in right lower zone, consolidation in left mild zone and consolidation in right upper zone were 20.0%, 08.0% and 6.0% respectively. Broad-based, national surveillance studies have demonstrated that clinical isolates of *S. pneumonia, H. influenza, and M. catarrhalis* in the United states continue to be highly susceptible to levofloxacin (>99% of isolates)[32-34]. Many clinical trials support the effective and safe use of levofloxacin for the treatment of CAP and CAP- associated infection[6]. In the present study 32.0% were treated with oral form and 68.0% were treated with injectable form the levofloxacin. About 92.0% were improved with the treatment. Kahn *et a*l. (2004) in their retrospective review of 661 levofloxacin-treated patients showed that the overall clinical success rates for patients with CAP due to penicillin-resistant or macrolide-resistant *S. pneumonia* were 94.7% (18 of 19) patients) and 96.9% (31 of 32 patients), respectively[13]. Dunbar *et al*. (2003) in their study showed that the majority (99%) of pathogens identified at study entry were fully susceptible to levofloxacin in vitro[14].

Levofloxacin monotherapy is well tolerated, cost- effective treatment for patients with CAP. Further large scale multi-centered study will help to strengthen this outcome.

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Original Article

Demographic Profile of NSTEMI (Non ST Elevation Myocardial Infarction) Patients & Association of ST-Segment Depression and Level of Troponin I with NSTEMI Patient's in-Hospital Outcome

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Abstract

Acute coronary syndrome (ACS) remains the leading cause of death in the developed world and second leading cause of death in developing countries. Elevated troponin levels and extent of ST-segment depressions are clinically important because they may act as an effective prognostic marker .This cross-sectional study has been designed to see the correlation of ST-segment depression and level of troponin I with in-hospital outcome of NSTEMI patients. The study was conducted in the Department of Cardiology, Dhaka Medical College Hospital, Dhaka during the period of April, 2011-March, 2012. A total of 90 patients were selected by purposive sampling. In this study,the mean ±SD age of the patients was 55.9±9.1 years with a range of 36-80 years with a male -female ratio of 2:1.Over all dyslipidaemia was the most common risk factor present in 55(61.10%) patients followed by smoking in 48(53.3%) patients then obesity in 32(35.60%) then hypertension in 31(34.4%) patients. Troponin I level was significantly high in patients who developed acute LVF (10.36±7.4 vs 7.0124±6.8, p=.027), and cardiogenic shock (13.72±11.37 vs 8.64±7.35, p=.033). Troponin I was significantly high in patients who developed complication (10.72±8.84 vs 6.24±5.41, p=.005) than the patients who were discharged without complication. ST segment depression was significantly more in patients who developed acute LVF(1.07±1.63 vs.55±.74, p=.048). Logistic regression analysis of acute LVF with Troponin I and ST-segment depression showed that ST-segment depression and level of Troponin I were important correlates of acute LVF .

Keywords: NSTEMI, Troponin I, ,ST-segment depression, In-hospital outcome

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Introduction

Acute coronary syndrome (ACS) remains the leading cause of death in the developed world and second leading cause of death in developing countries[1,2]. Various studies have pointed out that South Asians have a higher prevalence of ACS as compared with other ethnicities, with a higher rate at younger ages [3]. Being a south Asian country Bangladesh is not immune to this higher prevalence of ACS. Non ST elevation myocardial infarction (NSTEMI) is an important part of ACS.

Elevated troponin levels are clinically important because they may act as an effective prognostic marker[4]. In the consensus document of the Joint ESC/ACC Committee, myocardial infarction is defined on the basis of pathological findings or on the basis of a typical rise and fall in biochemical markers of myocardial necrosis and the presence of at new assay least one of the following: ischemic signs and symptoms, electrocardiographic (ECG) signs of ischemia or necrosis, or a coronary artery intervention [5]. Diagnostic level for increased cardiac risk is troponin I > 0.25 ng/ml. A level of 0.1-0.25 ng/ml is considered intermediate. A level of < 0.1 ng/ml is considered negative. An elevated troponin indicates myocardial necrosis. It can occur in acute myocardial infarction and in other clinical settings where myonecrosis has occured. The assay identifies patients who are at higher risk for cardiac events and mortality[6,7]. Each increase of 1.0 ng/ml in the cardiac troponin I level is associated with an increase in the relative risk of mortality. Lower limit of detection is 0.04 ng/ml. The 97.5 percentile for apparently healthy adults troponin I level is 0.06 ng/ml. A minimum of 03 ml of blood is required. Moderately hemolyzed specimens are acceptable. The test is available only on a STAT basis with a maximum 60 minute turn-around time. A troponin I level >2.0 ng/ml will be treated as a panic value [6,7]. In patients of ACS with ST depression ≥2 mm in 2 or more adjacent leads the probability of dying was 6 times higher within 1 year than it was the case with patients without ST depression in ACS [8] . In the presence of normal ECG appearance, NSTEMI is not excluded. In patients with ischemic symptoms and normal ECG, there may be approximately 1 - 6% patients presenting with evidence of myocardial necrosis (i.e., NSTEMI) [9] . About 30% of patients with NSTEMI, have an MI within 3 months of onset; sudden death is less common. Five clinical characteristics predict 90% of the mortality in patient with NSTEMI, these are older age, low systolic BP, Killip class >1, fast heart rate, anterior location on ECG[10] . A substantial number of patients get admitted to the Cardiology Department of Dhaka Medical College Hospital and diagnosed as NSTEMI. The aim of the study is to correlate in-hospital outcome of these patient by the level of troponin I and extent of ST-segment depression on ECG and to determine, between the level of troponin I and extent of ST-segment depression, which one is the better predictor regarding in-hospital outcome of NSTEMI patients . The objectives of the study was to find out the association between ST-segment depression and level of troponin I with in- hospital outcome of NSTEMI patients.

Materials and Methods

This Cross sectional study was in the Department of Cardiology, Dhaka Medical College, Dhaka for 1 year during the period of April, 2011 to March, 2012. All the patients of acute coronary syndrome admitted in the Coronary care unit, Dhaka Medical College Hospital Newly diagnosed NSTEMI Patients who have not any valvular or congenital heart diseases and not suffering from any severe co morbid condition and willing to participate in providing data and sample of blood, were selected. Patients having previous history of PCI, CABG , or old MI were excluded from the study. Sample size was 90. Data was collected by using a structured data sheet. After recording patients profile, risk factors of IHD like hypertension, smoking, dyslipidaemia, diabetes mellitus, family history of premature CAD and obesity was noted.Then the patients ECG were done and troponin I was tested within 6 to 24 hours of symptoms . Baseline laboratory investigation e.g., serum creatinine, blood sugar, lipid profile, Echocardiography was done for each patients. Then all the patients were grouped according to serum Troponin I and ST-segment depression status. Then in-hospital outcome of all patients like acute LVF, Cardiogenic were noted and compared by the level of Troponin I and ST-segment depression. Data was analyzed by using SPSS (statistical package for the social science) version 16. Continuous data were expressed as mean± standard deviation of mean and categorical data as percentages. Categorical variables were analyzed by chi-squre test. Quantitative variables were analyzed t test or ANOVA. Correlation between magnitude of ST-segment depression and level of Troponin I with in-hospital outcome was measured by regression analysis. P value $p<0.05$ was considered as significant.

Results

This study was conducted in the Department of Cardiology, DMCH, Dhaka for 1 year starting from April 2011 to March 2012. A total 90 patients with NSTEMI were followed up during hospital period. Patients were categorized into 4 groups on the basis of ST-segment depression and another 4 groups by troponin I. In-hospital outcome was taken. The descriptive and inferential statistics are described below by tables and graphs. Table-1 shows, the mean ±SD age of the patients was 55.9±9.1 years with a range of 36-80 years. The highest number of patients are within the group '51-60' years (33.3%) followed by 41-50 years group (31.1%) and >60 years group (30.0%)

Table -I. Distribution of the patients by age (n=90)

Age (years)	**n(%)**
31-40	

Among the patients, 60(66.7%) were male and 30 (33.3%) were female. Male female ratio was 2:1 (Fig.1)

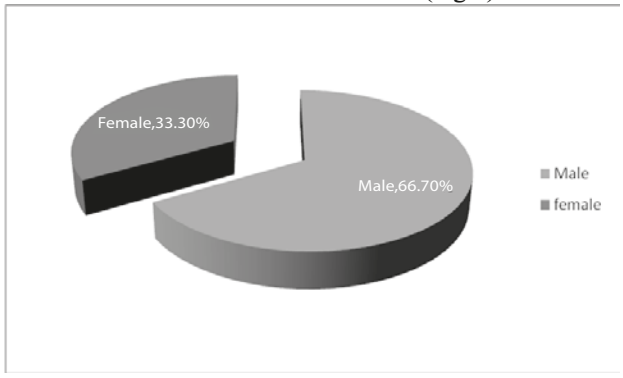

Figure 1: Distribution of patients by sex (n=90)

Figure-2 shows among the traditional risk factors for the cardiovascular diseases, smoking or chewing tobacco was present in 48(53.3%) patients, obesity in 32(35.6%), hypertension in 31 (34.4%), diabetes mellitus in 18(20.0%), dyslipidaemia in 55(61.1%), family history of premature CAD in 11(12.2%) and sedentary life style in 8(8.9%) patients

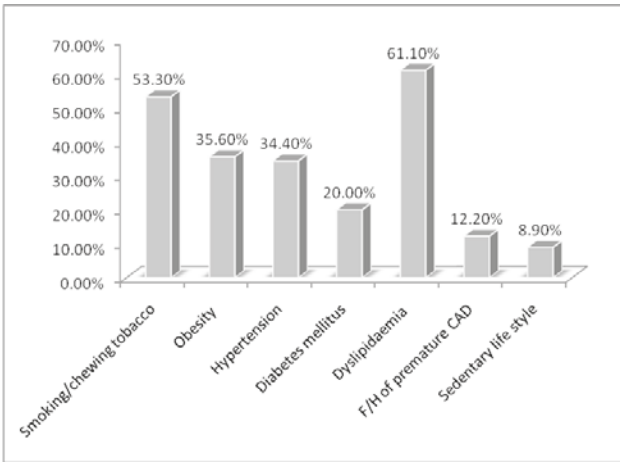

Figure- 2: Distribution of patients by traditional risk factors (n=90)

Figure 3 shows Troponin I was catagorised 2(2.2%) patients in group 1, 3(3.3%) patients in group II, 35(38.9%) patients in group III and in group IV 50(55.6%) patients.

Distribution of patients by troponin I level (n=90)

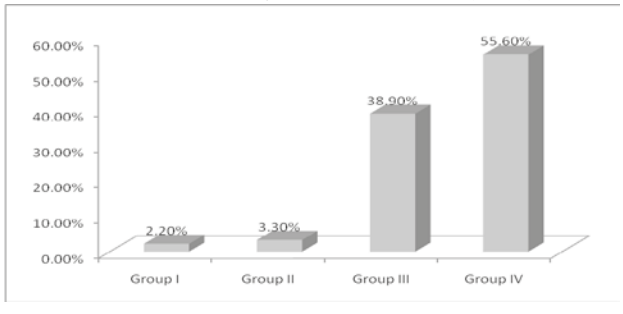

Figure - 3: Group I = troponin I level up to 0.5 ng/ml, Group II = troponin I level >0.5 to 1.0 ng/ml , Group III = troponin I level >1.0 to 5.0 ng/ml, Group IV = troponin I level >5.0 ng/ml

Figure - 4 shows distribution of patients by measurement of ST segment depression. In group I 51(56.7%) patients, group II 34(37.8%) patients, in group III 5(5.6%) and in group IV no patients .

Distribution of patients by ST segment depression (n=90)

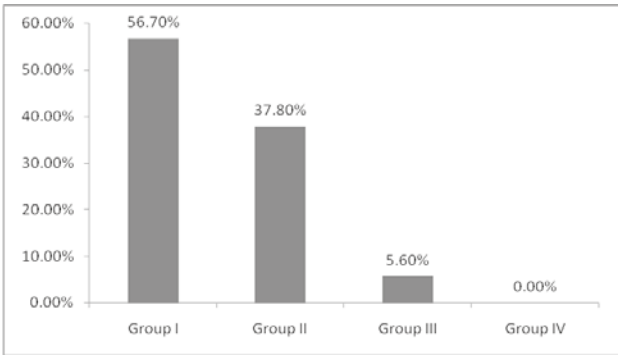

Figure-4: Group I = ST-segment depression 0 mm, Group II = ST-segment depression 1-2 mm, Group III = ST-segment depression >2 to 3mm, Group IV = ST-segment depression >3 mm.

Table 2 shows troponin I level was significantly high in patients who developed acute LVF (10.36±7.4 vs 7.0124±6.8, p=.027), and cardiogenic shock (13.72±11.37 vs 8.64±7.35, p=.033). Troponin I was significantly high in patients who developed complication (10.72±8.84 vs 6.24±5.41, p=.005) than the patients who were discharged without complication. No significant difference was observed in Troponin I level between patients with or without development of arrhythmia, conduction defect and death (p>0.05).

Table-2: Comparison of troponin I level between patients with or without development of in- hospital outcome :

In hospital outcome	Troponin I (ng/ml) (Mean ± SD)	P value
Acute LVF		
Yes (n=41)	10.36 ± 7.4	0.027*
No(n=49)	7.012 ± 6.8	
Cardiogenic Shock		
Yes (n=14)	13.72 ± 11.37	
No (n=76)	8.64 ± 7.35	0.033*
Arrhythmia		
Yes (n=07)	9.58 ± 11.08	0.958
No (n=83)	9.41 ± 8.03	
Conduction defect		
Yes (n=01)	1.22 ± 1.05	0.319
No (n=89)	9.52 ± 8.23	
Discharge with complication	10.72 ± 8.84	0.005*
Yes (n=64)	6.24 ± 5.41	
No (n=26)		
Death		
Yes (n=1)	10.00 ± .01	0.945
No (n=89)	9.42 ± 8.27	

P value was derived from t test, * = Statistically significan

Table 3 shows ST segment depression was significantly more in patients who developed acute LVF (1.07±1.63 vs.55±.74, p=.048). ST segment depression was not statistically different in patients with or without development of Cardiogenic shock (.57±1.38 vs .801±1.23, p=.810), arrhythmia (.57±.98 vs .69±.91, p=.749), conduction defect (0.00 vs.69±.91, p=.457), discharge without complication (.57±.70 vs .71±.98, p=.308) and death(0.00 vs .69±.91, p=.457).

Table-3: Comparison of ST-segment depression between patients

with or without development of in- hospital outcome :

In hospital outcome	ST-segment depression (Mean ± SD)	P value
Acute LVF		
Yes (n=41)	1.07 ± 1.63	.048
No(n=49)	.55 ± .74	
Cardiogenic Shock		
Yes (n=14)	.71± 1.38	
No (n=76)	.801 ± 1.23	.810
Arrhythmia		
Yes (n=07)	.57 ± .98	.749
No (n=83)	.69 ± .91	
Conduction defect		
Yes (n=01)	0.00	.457
No (n=89)	.69 ± .91	
Discharge with complication		
Yes (n=64)	.71 ± 1.40	.308
No (n=26)	.57 ± .70	
Death		
Yes (n=1)	0.00	.457
No (n=89)	.69 ± .91	

P value was derived from t test

Discussion

The mean ±SD age of our patients was 55.9±9.1 years (table-I) and male participants were 66.7% and female 33.3%. The mean age of the patients of a meta-analysis by Heidenreich *et al* (2001) was 63 years and male was 67% in their study. The findings of the study by Heidenreich *et al* (2001) [4] are similar to this study findings. In the present study smoking or chewing tobacco was present in 53.3% patients, obesity in 35.6%, hypertension in 34.4%, diabetes mellitus in 20.0%, dyslipidaemia in 61.10%, family history of premature CAD in 12.2% and sedentary life style in 8.9% patients (figure-2). The participant of Heidenreich *et al* (2001) meta-analysis had a history of hypertension in 42%, diabetes in 17% and smoking in 41% [4]. All these findings are similar to this study findings. Among all patients 6(6.6%) patients' pulse was feeble. The remaining 84(93.4%) patients had mean±SD pulse 86.75±14.27 beats/min with a range of 50-120 beats/min indicating the presence of arrhythmia including patients' systolic and diastolic blood pressure was not recordable. The remaining 86(95.6%) patients had mean±SD systolic blood pressure 118.12±19.42 mm of Hg with a range of 60-200 mm of Hg and mean±SD diastolic blood pressure 75.82±11.14 mm of Hg with a range of 40-100 mmHg indicating the presence of hypertension and cardiogenic shock. ST segment depression was significantly more in patients who developed acute LVF (1.07±1.63 vs 55±.74, p=.048). But ST segment depression was not statistically different in patients with or without development of cardiogenic shock (.57±1.38 vs .801±1.23, p=.810), arrhythmia (.57±.98 vs .69±.91, p=.749), conduction defect (0.00 vs.69±.91, p=.457), discharge without complication (.57±.70 vs 71±.98, p=.308) and death(0.00 vs .69±.91, p=.457). One (2.0%) patient of ST segment depression group' died during hospital stay. However there was no significant difference in mortality among the groups (p=0.457) The findings of the study was supported by Birnbaum *et al* (1996), Atar *et al* (2007), Kaul *et al* (2001), Peterson *et al* (1996)[11-14]. Atar *et al* (2007) collected electrocardiographic (ECG) and clinical data from 6,770 patients with NSTEACS. The authors found that ST-segment depression in any of the ECG locations was associated with higher mortality compared with patients without ST-segment depression[12]. Kaul *et al* (2001) described that ST segment depression was the strongest predictor of one-year mortality. Patients with ST segment depression ≥2 mm were almost 6 times more likely to die within one year than patients with no ST segment depression [13]. Troponin I level was significantly high in patients who developed acute LVF (10.36±7.4 vs 7.0124±6.8, p=.027), and cardiogenic shock (13.72±11.37 vs 8.64±7.35, p=.033). Troponin I was significantly high in patients who developed complication (10.72±8.84 vs 6.24±5.41, p=.005) than the patients who were discharged without complication. No significant difference was observed in Troponin I level between patients with or without development of arrhythmia, conduction defect and death (p>0.05). These observations are in consistent with the findings of the trial by Acharji *et al* (2012), Ben-Dor *et al* (2006), Diderholm *et al* (2002), Heidenreich *et al* (2001) [15-17]. Diderholm *et al* (2002) observed that troponin I level is an effective prognostic marker and its level predicts in-hospital out come in NSTEMI. The in-hospital outcome they observed were heart failure, arrhythmia, cardiogenic shock, heart block, even death etc. [17]. In a meta-analysis of seven clinical trials and 19 cohort studies Heidenreich *et al* (2001) found that patients with positive troponin (I or T) had significantly higher mortality than those with a negative test. They also found that there was no significant difference for mortality between troponin T and troponin I level[4]. The study was not supported by Nikus *et al* (2004). They found that the troponin levels did not differ significantly according to ST level depressions[18]. In the present study cardiac troponin I level and ST

segment depression has significant correlation with some in-hospital outcome like acute LVF and also significant correlation with patients with complication of NSTEMI during hospital stay. This finding is in line with the findings of Ciric-Zdravkovic (2007). Ciric-Zdravkovic (2007) proved that serum cardiac troponin level is related to ST deperession size changes. Troponin I levels are much more elevated with ST depression depth increase [19].The study was supported by Mia M E H, In 2011 one cross sectional study was done in NICVD, Bangladesh, which found that magnitude of ST-segment depression positively correlate with the severity of coronary artey disease.[20]

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Original Article

Comparison between Invasive & Non-Invasive Diagnostic Evaluation of Tuberculous Peritonitis in Our Prospective

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Abstract

This cross sectional study was carried out in the department of gastroenterology, Rangpur Medical College Hospital, Rangpur from January 2014 to July 2014 to compare between Invasive & Non-Invasive Diagnostic Evaluation of Tuberculosis Peritonitis In our prospective in clinically suspected patients. Total 30 patients (age 39.69±21.26, 18M/12F) with clinical suspicion of peritoneal tuberculosis were included in this study after analyzing selection criteria. Laparoscopic peritoneal biopsy with 'histopathological' diagnosis was considered as gold standard against which accuracies non-invasive test of two biomarkers (ADA & CA-125) were compared. Cut off value of ADA and CA-125 is 24 U/l, 35 U/ml respectively. Sensitivity, specificity, positive predictive value, negative predictive value and accuracy of ADA as a diagnostic modality in peritoneal tuberculosis were 87.5%, 83.33%, 95.45%, 62.5% and 86.67% respectively whereas CA-125 was found to have 83.33% sensitivity, 50% specificity, 86.9% positive predictive value, 42.85% negative predictive value and 76.6% accuracy. Both biomarkers were simple, non-invasive, rapid and relatively cheap diagnostic test whereas laparoscopy was an invasive procedure, costly & requires trained staff and not without risk and also not feasible in the entire centre in our country. So ascitic fluid ADA and serum CA-125 was important non-invasive diagnostic test for peritoneal

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Introduction

Bangladesh is a high endemic zone of tuberculosis. Tuberculosis can involve any part of the gastrointestinal tract and is the sixth most frequent site of extra-pulmonary involvement. Prevalence of peritoneal tuberculosis in Bangladesh is 12%. About 20% of tuberculosis patients may have extra-pulmonary & up to 12% peritoneal tuberculosis and of these 25-60% may have peritoneal involvement[1]. Concomitant active pulmonary TB associated with peritoneal TB is 30%. Majority of peritoneal tuberculosis result from reactivation of latent tuberculos foci. Peritoneal tuberculosis occurs in three forms: wet type with ascites, dry type with adhesions, and fibrotic type with omental thickening and loculated ascites.The gross pathology is characterized by enlarged and matted mesenteric lymph nodes, omental thickening and multiple yellow-white peritoneal tubercles. Diagnosis of peritoneal tuberculosis is sometimes difficult. High index of clinical suspicion is necessary for the diagnosis of peritoneal tuberculosis as missing the diagnosis can result in significant morbidity & mortality. Laparoscopic peritoneal biopsy is the gold standard in the diagnosis of peritoneal tuberculosis but it is invasive, costly and not feasible in all the centre. Adenosine deaminase activity is increased in chronic inflammatory response eg. tubercular pleural effusion, tuberculous peritonitis. The ADA activity is significantly higher in the peritoneal tuberculosis. Tuberculosis is virtually excluded if the value is very low. High level of ADA (cut off value 24 U/L) gave the test sensitivity of 93% and specificity 96%[2, 3, 4] . The CA-125 is a tumor marker associated with ovarian carcinoma. The CA-125 is also significantly higher in peritoneal tuberculosis. So ovarian malignancy is must be excluded before diagnosis of peritoneal tuberculosis. High level of CA-125 (cut off value 35 U/ml) gave the test sensitivity of 98.4% and specificity 95.9% [5]. There is a significant correlation between ADA & CA-125 in patients with peritoneal tuberculosis[6]. Both biomarkers are simple, rapid, non-invasive & relatively cheap diagnostic test for peritoneal tuberculosis. So establish as a new biochemical marker of ADA and CA-125 are time demanding for the diagnosis of peritoneal tuberculosis. The aim of this study is to evaluate of ADA and CA-125 as non-invasive diagnostic tools for peritoneal tuberculosis.

Materials and Methods

This cross sectional study was carried out in the department of gastroenterology in Rangpur Medical College Hospital, Rangpur from January 2014 to July 2014 on the patients with clinical suspicion of peritoneal tuberculosis. 30 patients were selected purposively

meeting the following inclusion & exclusion criteria. Clinically suspected cases of peritoneal tuberculosis presenting with peritoneal pain, fever, ascites, weight loss, history of contact of TB patients or past history of TB were included in this study and those admitted in this hospital and those refused to be included in the study, Pregnant or lactating mother, known case of cirrhosis of liver, CKD, heart failure or intra-peritoneal malignancy were excluded. Taking detailed clinical history, Physical examination, relevant investigations (eg. CBC, S.Creatinine, RBS, liver function tests, chest x-ray PA view, ECG, USG of W/A, urine R/M/E) were done in all cases. Endoscopy and colonoscopy were done in selected cases for exclusion of intra-peritoneal malignancy. Serum CA-125 and ascitic fluid study (including ADA, SAAG and malignant cell) were done in all patients. All patients were underwent laparoscopic peritoneal biopsy by experienced and skill surgeon after taking informed written consent from every patient and histopathology report of tissue samples were collected. Ethical clearance was taken from the institutional ethical committee of RANGPUR MEDICAL COLLEGE hospital. Samples were interviewed with a specific pre-designed and pre-tested questionnaire and other information were gathered by document review. Collected data was cleaned, edited and analyzed with the help of software SPSS. P value <.05 was considered to be significant.

Results

Results of the study were analyzed by comparison between ADA, CA-125 and histopathology of peritoneal tissue. Baseline clinical data and investigations findings were also observed. Mean age of the study subjects was 39.69±21.26 (SD). In ascitic fluid study, 22 patients (73.3%) of ADA level was found high (>24 U/L) and rest of the 8(26.7%) patients of ADA level was found low (< 24U/L). Among the study subjects, 23(76.7%) patients of serum CA-125 level was found high (> 35(U/ml)) and rest of the 7 (23.3%) patients of CA-125 was found low(<35 u/ml). According to histopathological reports, 24(80%) patients was found tubercular granuloma and non-tubercular was in 6 (20%). In this study, 22 patients of high level of ADA (> 24 u/l) was found histopathologically tubercular in 21(87.5%) patients and rest 1 patient was found non-tubercular. On the other hand, 8 patiens of low level of ADA (< 24 u/l) was found histopathologically tubercular in 3 (12.5%) patients and rest of the 5 patients were found histopathologiclly non-tubercular. (P<.05s,$\chi 2$= 12.31df=1, CI 95%). This relation was highly significant (P value 0 .001). In present study, 23 patients of high level of CA-125(>35 U/ml) were found histopathologically tubercular in 19 (79.2%) patients and rest of the 4 patients were found histopathologically non-tubercular. On the other hand, 7 patients of low level of CA-125 (<35 u/ml) was found histopathologically tubercular in 5(20.8%) patients and rest of the 2 patients were found histopathologically non-tubercular. This association was not statistically significant. p value =.051 , ($\chi 2$ .419,df 1 CI 95%) .Relation of ADA with CA-125 was mentioned in table I. Sensitivity and specificity were described in table II.

Table-I: Relation of ADA with CA-125 (N=30)

			ADA (u/l)		Total	P Value
			<24	>24		
CA-125 (u/ml)	<35	number	2	5	7	.896
		%	28.6%	71.4%	100.0%	
	>35	number	6	17	23	
		%	26.1%	73.9%	100.0%	

Table-II:

(a): Sensitivity and specificity of ADA (N=30)

		Gold standard test		
Test		Tubercular	Non-Tubercular	Total
Test Positive (ADA >24)		21	1	22
Test Negative (ADA <24)		3	5	8
Total		24	6	30
Performance of Diagnostic Test				
PPV	NPV	Accuracy	Sensitivity	Specificity
95.45%	62.5%	86.67%	87.5%	83.33%

(b) Sensitivity and specificity of CA-125 (N=30)

Test		Tubercular	Non- tubercular	Total
Test positive (CA-125 > 35)		19	4	23
Test negative (CA-125 < 35)		5	2	7
Total		24	6	30
Performance of diagnostic test				
PPV	NPV	Accuracy	Sensitivity	Specificity
86.9%	42.85%	76.6%	83.33%	50%

Discussion

High index of clinical suspicion is necessary to diagnose peritoneal tuberculosis[8]. In this study male is predominant possibly due to increase risk of exposure to infecting agent. One third of the patients had history of contact with TB patients (33.33%). Past history of tuberculosis was in 4 patients (13.4%). Muneef et al found 30% of the patients either gave past history of TB or presented with active TB[9]. Clinical presentations and baseline investigations data were consistent with other published data[9]. Twenty two patients (73.3%) had high ADA level (>24u/l). Among the study subjects 23(76.7%) patients had high serum CA-125 (> 35 u/ml). Low serums CA-125 were in 7 patients (23.3%). Uygur-Bayramicli O et al also pointed diagnostic value of ascities fluid ADA and CA-125 in peritoneal tuberculosis. Present study is comparable with this study. All study patient underwent laparoscopic biopsy and histopathology consistent with TB was found in 24(80.0%). Bhargava et al did Laparoscopy in 3 cases and revealed tubercle on the peritoneum and intestine with omental thickening which are histopathologicaly proved (100%).[11] In this study 22 patients had high ADA level (>24 u/l) .Among high ADA level, 21 patients had histopathologicaly proved TB. On the other hand, among 8 patients of low ADA, 3 patients

patients was non-tubercular (P<.05, χ^2= 12.31df=1, CI 95%). This relation was highly significant. In this study, 23 patients had high CA-125 value (>35u/ml). Among them 19 patients had histopathologicaly consistent with TB and 4 patients had non-tubercular. On the other hand, among the 7 patients of low CA-125 value, 5 patients had histopathlogicaly consistent with TB and 2 patients were non-tubercular. In case of ADA, sensitivity was 87.5% and specificity was 83.33%. In case of CA-125, sensitivity was 83.33% and specificity was 50%. Mean ± SD of ADA was 65.67 ± 34.12 in tubercular patients and mean ± SD of ADA was in 13.27 ± 7.17 in non-tubercular patients, confirmed by biopsy. The association between two groups was statistically significant (P value <.05). In case of tubercular patients, CA-125 (Mean ±SD) was in 223.83 ±159.17 and non-tubercular of CA-125 (Mean ±SD) was in 155.67± 181.49. This difference was statistically not significant. Binder HJ et al found that six of seven studies outside the United States have reported 100% sensitivity for the diagnosis of peritoneal tuberculosis, with specificities in the range of 92-100%.[12] In another study pointed that the diagnostic sensitivity of adenosine deaminase for peritoneal tuberculosis was in 94.2%, and its positive predictive value was in 75%[10]. In my study PPV was 95.45%, accuracy was 86.67%. It is concluded that measurement of ADA in ascitic fluid and serum CA-125 is a fast and accurate test for diagnosis of peritoneal tuberculosis. It has enough discriminatory power to either confirm or rule out the diagnosis of peritoneal tuberculosis in most cases. The beginning of empirical treatment when a patient has a high value of both ADA and CA -125 to be good approach while we waiting for the results of mycobacterial culture or biopsies.

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Original Article

Efficacy of the Canalith Repositioning Procedure in Benign Paroxysmal Positional Vertigo (BPPV)

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Abstract

Benign paroxysmal positional vertigo (BPPV) is paroxysms of vertigo occurring with certain head movements, typically looking up or turning over in bed comprising about 20% of Dizziness cases. This study was carried out to evaluate the Efficacy of canalith repositioning procedure(CRP) in BPPV. A randomized clinical trial including 80 patients with BPPV was performed Medicine & Neurology Outpatient Department, Chittagong Medical College Hospital. The patients were randomly divided into two groups. Group A treated by anti-vertigo drug and CRP, Group B treated by anti-vertigo drug alone. All patients were followed up in hospital at one week after & 4 weeks. The rates of effectiveness of CRP treatment and the control treatment for were 86.8% and 59.4%, respectively. There was a significant difference (27.4%) in the outcomes of the CRP & control groups (P <.05). Mean total drug use for the group A was 10 ± 1, whereas it was 30 ± 1.5 for group B, mean difference = 20 (P < .001, highly Significant). At 4 Weeks, subjective improvement and symptom free occurred in 94.7% patients in group A and 73% patients in group B (difference21.7%). Complications in the CRP group were observed in 10.6% of the patients.

This study demonstrated that canalith repositioning procedure (CRP) was effective in the treatment for benign paroxysmal positional vertigo insofar as it provided faster recovery & low drug dependence. Complications of CRP were limited to 10.6% of patients.

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Keywords: Canalith repositioning procedure (CRP), Benign paroxysmal positional vertigo (BPPV).

Introduction

Vertigo refers to a hallucination of movement. Patients experience a sense of environmental spin or self-rotation. Benign paroxysmal positional vertigo (BPPV) is paroxysms of vertigo occurring with certain head movements, typically looking up or turning over in bed. This is due to the presence of otolithic debris from the saccule or utricle affecting the free flow of endolymph in the semicircular canals (cupulolithiasis). BPPV is a common cause of dizziness. About 20% of all dizziness is due to BPPV. While BPPV can occur in children,[1,2] the older individuals are more likely to develop dizziness due to BPPV. About 50% of all dizziness in older people is due to BPPV. In one study, 9% of a group of urban dwelling elders were found to have undiagnosed BPPV.[3] About 03 vertigo cases attend in the MOPD every day. Beside this, a very good number of BPPV cases attend every week in neurology outpatient department of Chittagong Medical College Hospital, Chittagong. The vertigo and accompanying nystagmus have a distinct pattern of latency, fatigability, and habituation that differs from the less common central positional vertigo due to lesions in and around the fourth ventricle. Moreover, the pattern of nystagmus in posterior canal BPPV is distinctive. When supine, with the head turned to the side of the offending ear (bad ear down), the lower eye displays a large-amplitude torsional nystagmus, and the upper eye has a lesser degree of torsion combined with upbeating nystagmus. If the eyes are directed to the upper ear, the vertical nystagmus in the upper eye increases in amplitude. Mild dys-equilibrium when upright may also be present.[4,5] BPPV has often been described as "self-limiting" because symptoms often subside or disappear within 2 months of onset[5-8]. Imai T and others studied Natural course of the remission of vertigo in patients with benign paroxysmal positional vertigo published in journal Neurology[7,9]. The canalith repositioning procedure (CRP) for benign positional vertigo has been shown to be efficacious in various studies.[9-16] The CRP, introduced by Epley and modified in various ways, is the most popular maneuver, though other maneuver like Semont maneuver may be used[17-21]. Canalith repositioning manoeuvre in benign paroxysmal

Short and long-term outcomes of canalith repositioning procedure for benign paroxysmal positional vertigo has been shown in various study.[22-24] The present study evaluate the Efficacy of canalith repositioning procedure in benign paroxysmal positional vertigo.

Materials and Methods

Type of study: Randomized case control study.

Place of study: This study was carried out in the out patient department of Medicine and Neurology, Indoor department of Neurology Chittagong Medical College Hospital.

Period of study: This study was conducted from 1st December 2011 to 31th September 2012 for duration of 10 months.

Study population:

The patients who presented with vertigo in the Medicine and Neurology OPD & Neurology ward of CMCH was enrolled in this study.

Study tools: Data collection sheet/Case record form

Sample size: 40 patients in each group, A total number of 80 patients presented with BPPV were enrolled in this study. To yield an 80% power of detecting a clinically important difference in success rate of 30% between the control & treatment group at a significance level of 5%, the required sample size is 40 patients in each group. We assumed a success rate of 50% in control group. A total number of 80 patients presented with BPPV were enrolled in this study.

Sampling technique: Random sampling.

Selection of Subjects:

Inclusion Criteria:

1. Cases of posterior canal-BPPV on the basis of symptoms & Dix-Hallpike maneuver.

2. Vertigo presented within one month.

3. No canalith repositioning treatment applied before.

Exclusion Criteria:

1. Patient having any suspicion of vertigo other than BPPV which needed imaging.

2. Patients who have severe cervical spondylosis

3. Patients who have unstable cardiopulmonary status

4. Patient receiving multiple anti-vertiginious medication

5. Patients unwilling to include in the study.

Results

During the study period, a total of 100 fresh BPPV cases were screened. Of them 80 patients met the diagnostic criteria of BPPV. Out of them 78 patients met the inclusion and exclusion criteria to be selected as study subjects. The study subjects were randomly selected fortreatment with either anti-vertigo drug + CRP (group A) or anti-vertigo drug alone (group B). During the follow up period 01 patient from group A and 02 patients from group B were excluded from the study due to failure to attend at the follow-up. Patients who missed follow up after 1week of starting treatment but attended third follow-up after completion of 4 weeks of treatment were included as having completed the study. As such, ultimately, 38 patients in group A & 37 patients in group B completed the study.

In group A 50% cases were idiopathic, 31.6% post-traumatic, 13.1% associated with migraine & 5.3% others. In group B 51.4% cases were idiopathic, 29.7% post-traumatic, 10.8% associated with migraine & 8.1% others. P >0.05, not significant with X^2 test.(table I)

Table- I: Etiology among the study groups (with X^2 test significance)

Etiology	Group A		Group B (Control)		*P* Value
	n	%	n	%	
Idiopathic	19	50	19	51.4	>.05
Post-traumatic	12	31.6	11	29.7	>.05
Migraine	05	13.1	04	10.8	>.05
Others	02	5.3	03	8.1	>.05
Total	38	100	37	100	

In group A 50% cases were right sided, 36.8% cases were left sided, 13.1% cases were bilateral. In group B 48.6% cases were right sided, 40.5% cases were left sided, 10.8% cases were bilateral. P value >0.05, not significant with X^2 test.(table II)

Table- II: Distribution of the side of canal involvement among the study groups

Side Involved	Group A		Group B (Control)		P value
	n	%	n	%	
Right	19	50	18	48.6	>.05
Left	14	36.8	15	40.5	>.05
Bilateral	05	13.2	04	10.8	>.05
Total	38	100	37	100	

Mean total drug use for the group A was 10 ± 1, whereas it was 30 ± 1.5 for group B (mean difference = 20

(P < .001, highly Significant with t - test). (table III)

Table - III: Antivertigo medications among the study groups (with t - test significance)

Vertigo Medication		N	MEAN	± SD	MEDIAN	RANGE	P
In 2nd Visit	Group A	37	7	1.5	8	3 – 10	<0.05
	Group B	37	13	1.35	12	5 – 15	
	TOTAL	74	10	1.42	10	4 – 12.5	
In 3rd Visit	Group A	38	10	1	10	3 – 13	<0.01
	Group B	37	30	1.5	28	20 – 45	
	TOTAL	75	20	1.23	17	11.5 – 29	

Dix Hallpike's maneuver became -ve in 75.7% patients in group A & 32.4% patients in group B At 1 Week. At 4 Weeks, Dix Hallpike's maneuver became -ve in 86.8% in group A and 59.4% patients in group B, P < .001, highly Significant with X^2 test.(table IV)

Table- IV: Dix Hallpike's maneuver after 1 week & 4 weeks (with X^2 test significance)

Dix Hallpike's maneuver	At 1 Week				At 4 Weeks				*P* Value
	Group A		Group B		Group A		Group B		
	n	%	n	%	n	%	n	%	
+ve	09	24.3	25	67.6	05	13.2	15	40.6	<.001, Significant
-ve	28	75.7	12	32.4	33	86.8	22	59.4	<.001, Significant
Total	37	100	37	100	38	100	37	100	

Subjective Improvement + symptom free occurred in 86.5% patients in group A & 64.9% patients in group B At 1 Week. At 4 Weeks, Improvement + symptom free occurred in 94.7% patients in group A and 81% patients in group B, P < .005, Significant with t - test.(table V)

Table - V: Subjective assessment in different visits among the study groups

Symptom Grading	At 1 Week				At 4 Weeks				*P* Value
	Group A		Group B		Group A		Group B		
	n	%	n	%	n	%	n	%	
Stable/worse	05	13.5	15	40.5	02	5.3	10	27	<.005 Significant
Improved	17	86.5	16	59.5	12	94.7	16	73	<.005 Significant
No symptom	15		06		24		11		
Total	37	100	37	100	38	100	37	100	

Discussion

BPPV is an important cause of recurrent vertigo and vertigo related disabilities in general population. Its effective and curative treatment is not available to date.[19] So far no drug has shown any remarkable outcome. Symptomatic medication is used to reduce frequency, duration and severity of attacks. Until recently, BPPV was believed to be a self-limiting condition, and hence it required no treatment.[11,18] The addition of various types of head maneuvers particularly Epley's maneuver for the treatment of BPPV has been very successful.[13,19] The most common presenting complaints other than vertigo among study subjects include nausea/vomiting (78.9% in group A & 75.7% in group B), next complaints are Dizziness/light headedness, Imbalance & Headache. In the study, group A has 28.9% and group B has 27% positive family history of BPPV. No significant difference observed between 2 groups in chi-square test (P>0.05). In group A 50% cases were idiopathic, 31.6% cases were post-traumatic, 13.1% cases were associated with migraine, & 02 cases were post- stroke. In group B 51.4% cases were idiopathic, 29.7% cases were post-traumatic, 10.8% cases associated with migraine, 01 cases were post-stroke & 02 cases were associated with dementia. The aetiological difference between two groups was not significant (p>0.05). *Simhadri Sridhar*, et al,& *Kwanchanok Yimtae*, et al, showed 50% & 67.2% cases are idiopathic respectively.[14,19] Regarding the side of Involvement, In group A 50% cases were right sided, 36.8% cases were left sided, 13.1% cases were bilateral. In group B 48.6% cases were right sided, 40.5% cases were left sided, 10.8% cases were bilateral. The difference of side Involvement between two groups was not significant (p>0.05). Totally 37 cases were right sided, 29 cases were left sided, 9 cases were bilateral. The effectiveness of our CRP technique in curing vertigo was 75.9%. This result nearly matched to various previous reports.[7,13-20] The effectiveness of the control treatment for BPPV in our study was 48.2%. The time course of recovery for patients receiving CRP treatment, as assessed by the Dix-Hallpike test, was significantly faster than for the patients in the control group. In this study, the rates of effectiveness (Dix Hallpike's maneuver became -ve) of CRP treatment and the control treatment for benign paroxysmal positional vertigo were 75.7% & 32.4% respectively at the end of 1 week. But it became 86.8% and 59.4%, respectively after 4 weeks. This corresponded to previous reports at the 1-month assessment (ie, 76.5%)[18]. There was a significant difference in the treatment outcomes of the CRP and control groups (P <.05). Though significant, difference became lesser at 4 weeks. The time course of recovery for patients receiving CRP treatment, as assessed by the Dix-Hallpike test, was significantly faster than for the patients in the control group. Moreover, use of medication among patients in group A was significantly reduced compared with patients in the group B. Mean total drug use for the group A was 10 ± 1, whereas it was 30 ± 1.5 for group B (mean difference = 20 (P < .001, highly Significant).

In this study, Subjective Improvement + symptom free occurred in 86.8% patients in group A & 59.5 % patients in group B at 1 Week (difference 27.3%). At 4 Weeks, Improvement + symptom free occurred in 94.7% patients in group A and 73% patients in group B (difference21.7%). P Value <.005 Significant. Our results showed that the CRP is beneficial for patients with BPPV, providing faster recovery, and requiring less anti-

vertiginous medication. Complications from CRP occurred in four patients (10.6%). Two patients (5.3%) develop fainting after undergoing repeated maneuvers in one session, but the reaction resolved after the maneuvers were stopped. Two other patients (5.3%) had immediate symptoms of lateral BPPV on the same side but responded immediately to prompt CRP of the lateral canalithiasis (360° rotation technique). Complications of CRP were found in 13.8% of patients in the study done by Yimtae et al.[19] This study has shown the efficacy of canalith repositioning procedure(CRP) in BPPV treatment. There are very few study showing efficacy of the CRP in Bangladesh. So, we recommend as follows:

CRP should be used in BPPV treatment.

CRP should be an alternative treatment in cases where drugs could not be prescribed.

Future studies should be done to see efficacy of CRP for long duration (3 months or more), taking large sample size. Studies should also be done to see whether efficacy remain sustained.

A cross-over study may be done in future between anti-vertigo drug + CRP or anti-vertigo drug alone.

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Original Article

Value of Widal Test in the Diagnosis of Typhoid Fever

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Abstract

Typhoid Fever occurs worldwide primarily in developing nations where sanitary conditions are poor. The absence of specific symptoms and signs makes the clinical diagnosis difficult. Definitive diagnosis requires the isolation of S. typhi from blood or other body fluid. But in developing countries culture facilities often not available & diagnosis rely upon clinical features and the detection of antibodies by the Widal test. Numerous studies however have cast serious doubts on the value of the test. The aim of the study was to reassess the utility of a single Widal test in the diagnosis of typhoid fever. The descriptive study was carried out on 100 adult patients with suspected cases of typhoid fever, in the Department of Medicine, Chittagong Medical College Hospital for a period of one year from January to December 2009. Blood samples were collected to perform culture and Widal test. TO titre $\geq$1:160 were considered as significant. AO or BO $\geq$1:160 was also considered as significant. The results showed 24 among 100 clinically suspected typhoid fever cases yielded growth of S. typhi. Widal test was found significant in 20(83.33%) out of 24 cultured confirmed cases. Results revealed significant difference in Widal test results between culture positive and negative cases, X^2 value 5.601, P value 0.018(<0.05).The study concluded that use of Widal test may be justified in second week of illness as a suggestive test for clinical diagnosis or in patients who have clinical typhoid fever but are culture negative.

Keywords: Value, Widal test, Typhoid fever

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Introduction

Typhoid Fever also known as Enteric Fever is a fatal multisystem illness caused primarily by *salmonella typhi.* The variable manifestations of typhoid fever make this disease a true diagnostic challenge. The classical presentation includes, fever, malaise, diffuse abdominal pain & constipation. Untreated typhoid fever is an exhausting illness that may progress to delirium, intestinal hemorrhage, bowel perforation & even death. Survivors may be left with long or permanent neuropsychiatric complications[1]. Typhoid Fever occurs worldwide primarily in developing nations where sanitary conditions are poor, poor standard of personal hygiene and frequent contamination of food[1]. It is sporadic disease in developed countries that occurs mainly in returning travelers, with occasional point-source epidemics[2]. Delay in diagnosis, emergence of resistance strain, the lack of availability of safe, effective and cheap vaccine is contributing factors. Typhoid fever is endemic in Asia, Africa, Latin America, and the Caribbean & Oceania[1]. *S. typhi* has been a major human pathogen for thousands of years, thriving in conditions of poor sanitation, crowding & social chaos. It may have responsible for the Great Plague of Athens at the end of the Peloponnesian War. The name *S. typhi* is derived from the ancient Greek "*typhos*" an ethereal smoke or cloud that was believed to cause disease & madness. In the advanced stage of typhoid fever, the patient's level of consciousness is truly clouded. Although antibiotics have markedly reduced the frequency of typhoid fever in the developed world, it remains endemic in developing countries[1].In view of the doubt expressed on the value of the Widal test in different studies[2,3,7] due to above mentioned causes; we thought it worthwhile to reassess the utility of a single Widal test in the diagnosis of typhoid fever.

Materials and Methods

This descriptive study was carried out for a period of one year from January 2009 to December 2009, in the Department of Medicine, Chittagong Medical College and Hospital, Chittagong Bangladesh. The study place is a 1000 bed teaching and referral hospital with more than 10 million populations in its catchment area. Total one hundred patient of clinically suspected Typhoid fever were selected considering the inclusion criteria like

1. Clinically diagnosed case of Typhoid fever based on insidious onset of fever above 38^{o} C (100.4^{o}F) for > 7 days and < 14 days plus two or more of the following in history or physical examinations -Frontal headache, Toxic look, Constipation, Diarrhea, Coated tongue, Diffuse abdominal tenderness, Relative bradycardia, Spleenomegaly or hepatomegaly, Rose spot.

2. Age: 18 years to 60 years, both male & female. And Exclusion Criteria like Other causes of fever like Malaria and other organ specific infections with localizing sign and symptoms like UTI and RTI etc.

Those who did not agree with written informed consent to participate in the study.

Semi-purposive sampling technique was followed in this study.

Results

We could enroll 100 patients of clinically diagnosed Typhoid fever over the study period. Results obtained as baseline characteristics of the subjects, different clinical and laboratory parameters are shown in tabulated form and in diagram. Statistical analysis was done to see the significant difference of Widal test results between blood culture positive and blood culture negative cases. The results obtained were compared and analyzed to observe statistical significance.

Blood culture results

Blood culture was performed among study subjects to see the culture positivity and establish the diagnosis of typhoid fever in clinically suspected individuals. The results shown in the following (figure-I)

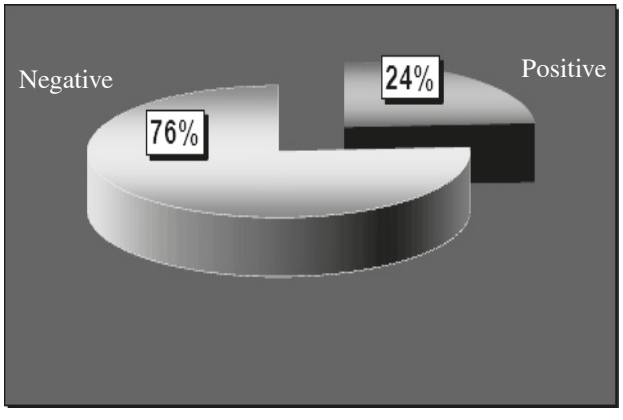

Figure- I: Distribution of blood culture results among the study subjects (n=100)

Figure I shows the distribution of blood culture results among the study subjects. Among clinically suspected Typhoid fever cases, blood culture for *S Typhi* was found positive in one quarter of subjects but rest of the subject did not show growth of *Salmonella* in blood culture.

Widal test results among study subjects

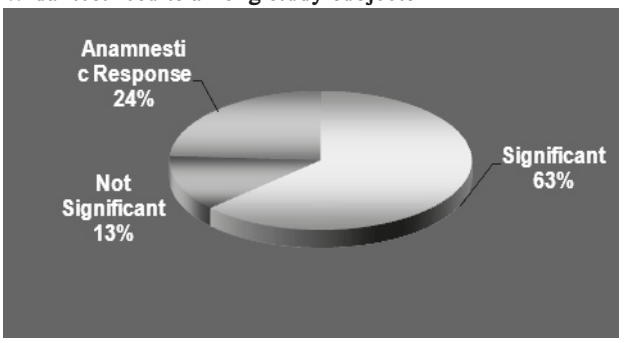

Figure- II (a): Distribution of Widal test result among study subjects (n=100)

Figure II (a) shows the distribution of Widal test results among study subjects. The results showed that Widal test was found significant in majority (2/3rd) of the subjects but rest of the cases did not show any significant rise of titre. Widal test was also performed in blood cultured confirmed typhoid cases. The results showed in the following figure.

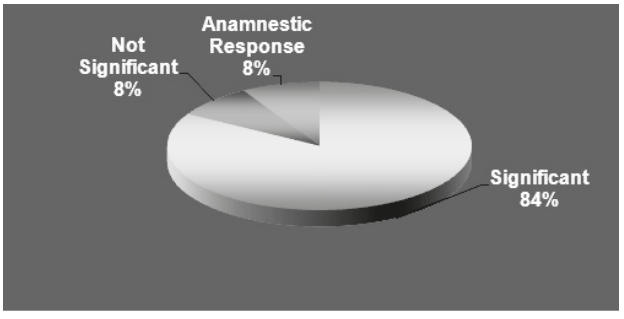

Figure-II (b): Distribution of Widal test results among blood culture positive cases (n=24)

Figure II (b) shows the distribution of Widal test results among blood culture positive cases. Results revealed that Widal test was found significant in most of the blood culture positive cases but few patients with blood culture positive did not show any significant titre.

Distribution of Widal agglutination titre among study subjects

Table I shows the distribution of TO and TH titre (≥1:160) status in blood culture confirmed typhoid fever cases. The results revealed that TO (≥ 1:160) was found significant in majority of blood culture positive Typhoid fever cases. Results showed that both the titre was raised though TO titre raises slightly higher than the TH titre.

Table - I: Distribution of TO and TH (≥1:160) status among the blood culture positive subjects (n = 24)

TITRE	<1:160	≥ 1:160	TOTAL
TO	08(33.3)	16 (66.6)	24
TH	10 (41.6)	14(58.3)	24

Figures in parentheses indicate percentages

Table II shows the significant AO titre (≥160) in study subjects, both cultures positive and culture negative cases. Result revealed that AO titre was found significant more in blood culture positive cases. No significant BO titre was found in study subjects.

Table- II: Distribution of AO status among the study subjects (n = 100)

BLOOD CULTURE	≥ 160	< 160	TOTAL
Positive	4(16.6)	20(83.3)	24
Negative	8(10.5)	68(89.4)	76
N	12	88	100

Figures in parentheses indicate percentages

Widal test result in blood culture positive and culture negative Typhoid fever cases.

Table III Shows the Widal test result in blood culture positive and culture negative Typhoid fever cases. Results revealed that there is difference in Widal test results between blood culture positive and blood culture negative cases. The difference is statistically significant (X^2 value = 5.601, df =1, P value = < 0.05). So the result confirmed that Widal test is found significant in most of the blood culture positive Typhoid fever cases.

Table -III: Widal test results in culture positive and culture negative Typhoid cases (n = 100)

		BLOOD CULTURE		TOTAL
		Positive	Negative	
WIDAL TEST	Significant	20 (83.3)	43 (56.6)	63 (63.0)
	Not Significant	02 (08.0)	11 (14.4)	13 (13.0)
	Anamnestic Response	02 (08.0)	22 (28.9)	24 (24.0)
Total		24(100.00)	76(100.00)	100(100.00)

Figures in parentheses indicate percentages.

Chi-square test statistics: X^2 = 5.601; df = 1; P = 0.018; Significant (< 0.05).

Discussion

A simple Widal test in agglutination titre of TO ≥ 1:160 were observed in 2/3rd of cases of culture positive and culture negative patients with strong clinical suspicion of Typhoid fever. The test was found significant in more than 3/4th of culture-positive typhoid fever cases which is comparable to other studies. Some studies found Widal test significant in more than 90% of blood cultured confirmed Typhoid fever cases[8]. In our study it was found that at a titre more than or equal to 1:160, the positivity of the 'TO' titre (66.6%) was greater than that of the 'TH' titre (56.6%). Hence, the 'TO' titre may be considered to be of greater diagnostic significance. Similar observations are made by Kulkarni *et al*. & Willke[9,10]. AO (*S. paratyphi A*) was found significant(titre ≥1:160) in 16% of blood culture positive typhoid fever cases which is similar to other studies which was around 20% in different studies, but it was 40% in other study[4]. No significant elevation of BO titre was found in our study. Some studies also reported significant elevation of BO titre (≥1:160) in 2 to 3% cases[5].

In the present study blood culture was found positive in one quarter of cases with the clinical diagnosis of typhoid fever which was similar to other study[6]. In other studies however with varying clinical manifestation, *S. typhi* has been isolated from 40 to 60 % cases. This difference could be due to unknown reasons as found in other studies, also have been contributed by prior antibiotic use and also amount of blood taken for culture. Present study revealed that some patients of suspected typhoid fever with positive blood culture had no significant elevation of titres of O or H antibodies. Although these patients may have had antibodies at a lower titre, they may have a negative Widal test throughout the course of their illness. This lack of antibody response among patients with blood culture-positive typhoid fever may be attributed to undefined host or bacterial factors or prior antibiotic treatment or late appearance of antibody titres[8].In our study we had some limitations like we had no sufficient data about how many patients received prior antibiotic and also blood culture was performed in the 2nd week of the illness which decreased the rate of growth of salmonella in culture due to prior antibiotic use. We had no control group, so risk factors for negative blood culture or insignificant Widal test could not be evaluated and sensitivity and specificity of the test could not be done. We could not confirm bacteriologically or serologically (four fold rise of titre) of Typhoid fever in 76 percent cases. The study concluded that Widal test result is positive in significant titre in most cases of blood culture positive Typhoid fever cases and use of Widal test may be justified in the second week of illness as a suggestive test for clinical diagnosis of typhoid fever or in patients who have clinical typhoid fever but are culture negative or in regions where culture facilities are not available. Observing the findings of the present study following recommendations is put forward for consideration of future researchers as well as relevant authority.

Further study with larger sample size, antibiotic free samples and case control study is needed to see the significance of Widal test in clinically suspected enteric fever.

To establish the role of Widal test in enteric fever needs information on sensitivity and specificity in laboratory confirmed typhoid fever cases.

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Original Article

Changes in the Contraceptive Practice among the Women of Reproductive Age in a Selected Hospital of Dhaka City

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Abstract

Family planning is an essential tool for reducing fertility rate. An increase in contraceptive prevalence rate results in reduction of population growth, which in turn contributes significantly to the improvement of people's health. This is a cross-sectional, descriptive type of study carried out among the married women attending in the gynaeout patient department of MARKS Medical College and Hospital. This study was conducted from 1st June 2013 to 31st May 2014. Sample size was 250 which were selected purposively.Reproductive history was used as research instrument for data collection. Data was collected by face to face interview using structured questionnaire. Among 250 married women 156(62%) women practicing contraceptives. Majority 45.6% of the respondents were in the age group of 25-29 yrs. Among the respondents housewives 36%, service holder 64% and 38.4% were educated. About 42.8% respondents had 2 child followed by 3 children 36% & only 1.6% had 4 children. 100% respondents had knowledge about oral pill and barrier method. Among the contraceptive users 35.8% respondents accepted OCP followed by barrier method 33.3%, IUCD users were 16.7%, 7.7% respondents used injectables, 6.4% were natural method user and only 1.2% used emergency pills. Maximum 59% respondents were using contraceptives for less than one year, only 4.5% were using contraceptive of different methods for 10 years. Fertility rate, menstruation regulation is lower among servicing women. Education, empowerment and social position of women help to reduce fertility.

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Introduction

According to a Committee of WHO (1971), family planning refers to practices that help individuals or couples to avoid unwanted births, to bring about wanted births, to regulate the intervals between pregnancies, to control the time at which births occur in relation to the age of the parents, and to determine the number of children in the family[1]. Family planning not only offer contraceptive benefit, it also ensureimprovement in women's health, child health , decrease infantand maternal death, decrease population growth and ultimately enhance the socioeconomic development[2]. The term contraceptive include all measures, temporary or permanent, designed to prevent pregnancy due to the coital act[3]. Ideal contraceptive method should fulfil the following criteria-widely acceptable, in expansible, simple to use, safe, highly effective and requiring minimal motivation, maintenance and supervision. No one single universally accetable method has yet been discovered. So there is changing trend in contraceptive practice. Fertility status(fecundity) is largely determined by age at marriage, age at 1stchild birth, birth space, and use of contraceptives. These variables are indirectly regulated by income, nutrition, housing, education and medical care of the people. There are evidenced that conditional cash transfer or improvement in socio economiccondition have unintended effect on fertility control[4,5]. Bangladesh's population estimated to be 146.6 million and is growing at a rate of 1.42% per annum [6]. Bangladesh has achieved this progress against the backdrop of low literacy rate, low status of women and low income per capita and so on. Women of reproductive age group (15-49 years) represent 46% of the total female population. Contraceptive prevalence (CPR) only 56%. But total fertility rates across the countries is 2.7(ranges from 3.3-8.7) percent[7,8,9]. Total fertility rate in Bangladesh decline sharply over the last 37 years from 6.3 births per women in 1971-1975 to 2.7 births per women in 2004-2006 [9]. For reduction of total fertility rate, family planning plays crucial role[10]. Contraceptive prevalencerate in Bangladesh increase slowly over the last 37 years from 8% in 1975 to 56% in -2007 [7]. During this period improvement in maternal malnutrition (BMI less than 18.5 kg/ sqm) 52% in 1996-97 to 23.5% in 2007[7]. Changes in adult literacy rate 51.6% in 2004 and increase in per capita income is

40%[10]. By studying the reproductive history, size of family, son/ daughter preference, need for another child and contraceptives prevalence can be assessed and it would be helpful informulating an intervention in order to decrease the fertility rate in Bangladesh. The present study aimed at exploring Contraceptive prevalence and related issue among service holder. The reason for non using contraceptives and the experience they gained after using different contraceptives would indicate the pathway to lower fertility rate in the society. This study would help in planning a strategy that could raise CPR and reduce the total fertility rate.

Materials and Methods

This is a cross-sectional, descriptive type of study carried out among the married women attending in the gynaeout patient department of MARKS Medical College and Hospital. This study was conducted from 1st June 2013 to 31st May 2014. Sample size was 250 which were selected purposively. Their history was taken. All patients asked for age, how long they are married, marital age of the women, age at 1st birth, number of living children, birth space, dead children, menstruation regulation and abortion, contraceptive methods, menstrual history, desire for future pregnancy and why they need another child. 250 women (child bearing age group) were selected randomly to find out their contraceptive prevalence / fertility control. Simple random sampling technique was employed to collect data. Interviewer-administered structuredquestionnaire (Reproductive history) was used as research instrument for data collection.

Results

During the study period, 250 women enrolled in the study. Among 250 respondent 30 respondent were in 15-19 yrs age group, 66 were in 20-25 yrs, 114 were in 25-29 yrs and 40 were in >30 yrs age group. Among 250 respondents, 160 are service holder and 90 are housewife. Only 156 women used contractive. 100% respondents had knowledge about oral pill and barrier method. The Majority (45.6%) of respondents were in the age group of 25-29 yrs shows in table I.

Table I: Distribution of the respondents by age.

Age in Years	No. of Respondents	Percentage %
15-19	30	12
20-24	66	26.4
25-29	114	45.6
>30	40	16
Total	250	100

Distribution of respondents by service in figure I below:

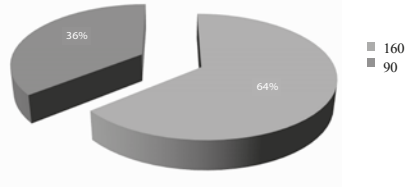

Fig- I: shows that most of the women160 (64%) are service holder.

Distribution of respondents of educational qualification in figure II below:

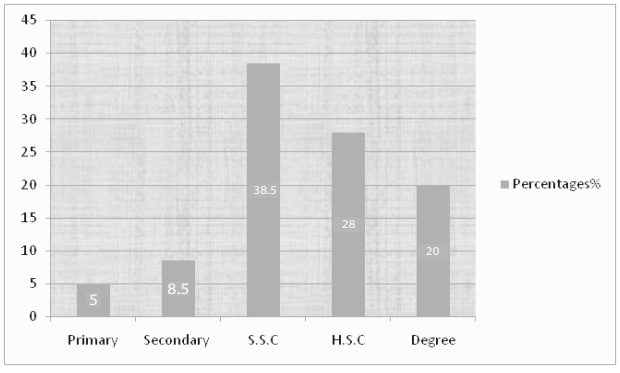

Fig- II: shows that most of the women (38.5%) were S.S.C passed.

Distribution of the respondents regarding practice of contraceptives in figure III below:

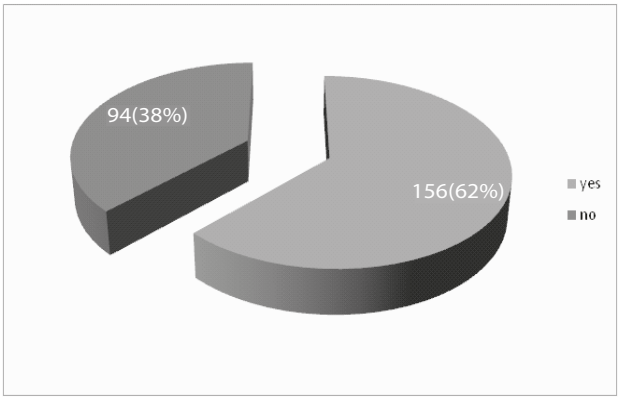

Fig: III shows that 156(62%) women used contracetive, 94(38%) women did not use any contraceptive.

Maximum (42.8%) respondents had 2 children followed by 3 children (36%) & only 1.6% had 4 children shows in table- II.

Table- II: Distribution of the respondents by number of children.

No.of Children	No.of Respondents			Percentage%
		Housewife	Servicing Women	
1	24	5	19	9.6
2	107	13	94	42.8
3	90	50	40	36.0
4	25	18	7	10.0
5-6	4	4	0	1.6
Total	250	90	160	100.0

Table- III: Demographic characteristics of respondents.Indicators Results

Mean age at marriage (Year)	18.24 (13-28)
Mean age at 1st birth (Year)	21.46 (14-33)
1st birth space (Year)	4.29 (2-10)
2nd birth space (Year)	4.75 (1-11)

100% respondents had knowledge about oral pill and barrier method shows in table- IV.

Table- IV: Knowledge about types of contraceptives.

Types of contraceptive	No of Respondent	Percentage%
Oral Pill	250	100
Injectable	180	72
Barrier method	250	100
IUCD	166	66.4
Other method	70	28.0

(35.8%) respondents accepted OCP followed by barrier method (33.3%), IUCD users were 16.7%,7.7% respondents used injectables, 6.4% were natural method user and only 1.2% used emergency pills shows in table-V

Table- V: Distribution of the respondents about use of different types contraceptives.

Types of contraceptive	No of Respondent	Percentage%
Barrier method	52	33.3
OCP	56	35.8
IUCD	26	16.7
Injectable	12	7.7
Natural method	10	6.4
Emergency pill	2	1.28
Total	156	100

Only 4.5% respondents were using contraceptive of different methods for 10 years shows in table VI.

Table- VI: Distribution of the respondents according to duration of use of contraception.

Duration in year	No. of Respondent	Percentage%
<1	92	59.0
1-5	35	22.4
5-10	22	14.1
>10	7	4.5
Total	156	100

Discussion

A woman's health is intricately entwined with her social status that in turn involves a complex set of interrelated factors. Those factors include her income, employment, education, health and fertility and society's perception of her role in the family and community[5,11]. From the study it was found that mean age at marriage is 18.24(13-28) years. It is equal with legal age of marriage[10]. Mean age at first birth is 21.46(18-33) years. Comparison with data from sources show that the age at which women in Bangladesh have their first child has increased steadily over time. For example, in 1975, the median age at first birth among women age 20-24 was 16.8, rising to 18.0 in 1991- 1993, 18.4 in 1996-97 and 18.7 in 1998-2000[12]. A rise in median age at first birth is typically a sign of transition to lower fertility levels[13]. In this study 36% women were housewife and 64% women were service holder. We also found that most of the married women 38.4% who attended the out patient department were S.S.C passed and only 5.2% completed primary level. This indicates that women from middle and higher middle class communities want to be independent rather dependent on their husbands. It was found that maximum respondents (42.8%) had 2 children followed by 3 children (36%) and only 1.6% had 4 children, therefore it can be concluded that middle class or higher middle class community are concerned about their family size. This is consistent with a study by Main[14]. Knowledge about contraceptive is satisfactory as all the respondents (100%) heard about this different type of contraceptive. But this study result is not similar to the the study of demography and health survey as they as they include a huge number of literate& illiterate women of our country[15]. In the present study, 62 percent married women need a method of family planning. The 2001 BMMS indicates that 50% of currently married women in Bangladesh are using a method of family planning, 44% women are using Modern method and 6% using natural method[12]. In this study it is showed that 33.3 percent couple use barrier method of contraception but in Bangladesh 10.6 percent couple use barrier method of contraception[7,11]. Continued publicity against HIV and AIDS and increasing awareness of the people make use of condom more popular. In this study, 35.8% women used OCP it is lower than national levels[7]. Couple have negative attitude towards pill. They think pill causes scanty menstruation, weight gain and fear of malignancy. 6.4% couple practice natural method. Natural method is not very much effective. But couples education and responsibility make the method more effective[2,3] . Adherence with the methods offers best result. Use of emergency contraceptive pill is also less. Only 2(1.2%) couple during the last year receive emergency contraceptive pill. Menstruation regulations (MR) are more prevalent among house wife than servicing women and fertility rate is lower among servicing women. Long term contraceptive method is not much effective for fertility reduction as well as population control because of poor acceptance. Nationally only 21.1 percent couple practice permanent method [11]. But in this study we did not found any couple using permanent method. At present contraception and nature alone cannot control the population in developing countries[16]. Most developing countries, including Bangladesh, want to reduce their fertility to replacement levels, and a recent study analyzing fertility transitions in 143 developing countries concluded that, on average, a life expectancy of 75 years and literacy near 95% are needed to approach this level[17]. Because it may take a long time for some countries to achieve sufficient development, policymakers need to consider other approaches for reaching this goal, such as reducing son preference and infant and child mortality, as well as improving family planning programs[18].

Family planning helps to create favorable conditions for socioeconomic development, and improve educational performance. Minimum regular income, housing, education and medical facility offer family stability and it has unintended effect on fertility. Education and social position makes one more responsible. Servicing women (empowerment) are more eager to keep family small. The fertility reducing effect of the marriage is increasing, but its effect is offsetted by the declining trend in lactational amenorrhoea period, hence the joint effect of marriage and lactational infecundability did not change much over the period. This leads to the conclusion that the future reduction of fertility in Bangladesh may be largely dependent on increased use of effective birth control methods.

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Case Report

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Abstract

A 10 months old female baby admitted with diagnosis of tension pneumatocele in right side of hemithorax with collapse right lung. The baby was first managed conservatively, but the condition did not improve. Surgical management was done after one month of admission in hospital, with improvement of baby's symptoms and general conditions. One month later the baby was well and her lung was found expanded completely.

Keywords: Pneumatocele, Pneumonia, Complication, S. aureus, Surgery.

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Introduction

Pulmonary pneumatoceles are thin-walled, air-filled cysts that develop within the lung parenchyma. They can be single emphysematous lesions but are more often multiple, thin-walled, air-filled, cystlike cavities. Most often, they occur as sequelae to acute pneumonia, commonly caused by Staphylococcus aureus. Pneumatoceles are generally observed soon after the development of pneumonia but can be observed on the initial chest radiograph.[1]

Tension pneumatocele can be defined as expanding air-filled pulmonary cyst, usually of post infectious origin, compressing adjacent area of the lung and resulting in cardiorespiratory compromise.[2]

Since the 1950s, multiple theories have been proposed as to the exact mechanism of pneumatocele formation; Carrey suggested that the initial event is inflammation and narrowing of the bronchus, leading to the formation of an endobronchial ball valve.[3] Ultimately, this bronchial obstruction leads to distal dilatation of the bronchi and alveoli. In 1951, Conway proposed that a peribronchial abscess forms and subsequently ruptures its contents into the bronchial lumen[4]. This also acts similarly to a ball-valve obstruction in the bronchus and leads to distal dilatation. In 1972, Boisset concluded that pneumatoceles are caused by bronchial inflammation that ruptures the bronchiolar walls and causes the formation of "air corridors". Air dissects down these corridors to the pleura and forms pneumatoceles, a form of subpleural emphysema[5] .

In most circumstances, pneumatoceles are asymptomatic and do not require surgical intervention. Treatment of the underlying pneumonia with antibiotics is the first-line therapy. Close observation in the early stages of the infection and periodic follow-up care until resolution of the pneumatocele is usually adequate treatment. The natural course of a pneumatocele is slow resolution with no further clinical sequelae. Invasive approaches thoracostomy or surgery should only be reserved for patients who develop complications such as pleural effusion, empyema, pulmonary abscess and pneumatoceles[6].

Case Report

A 10 months old baby girl was suffering from recurrent attack of respiratory distress, fever, dry cough and nasal discharge for one month. Fever was high grade intermittent in nature associated with chill and rigor and relieved by antipyretic. Severe respiratory distress with chest indrawing, dry cough and nasal discharge for same duration. She was diagnosed as a case of pneumonia and treated by local physician but her condition not improved. Local physician noticed air filled space developed in right lung then she was referred to our hospital for better management. On general examination baby was ill looking , dyspnoeic, chest indrawing present, respiratory rate 30 breaths/min, high temperature. On palpation trachea shifted to the left side. Chest expansion diminished on right side. Percussion note was hyper resonant on right side of chest in midclaclvicular, mid axillary and posterior scapular line. Breath sound diminished on right side in midclaclvicular, mid axillary and posterior scapular line,

some inspiratory crackles present. On routine investigation leucocytosis with raised ESR, on CXR P/A view (Fig-I) there was a large translucent area involvement of upper, mid and lower zone which devoid of lung margin with septum in right side. Some thin walled cystic cavity with multiple fluid level present in right lower zone. Trachea and mediastinum shifted to left side. Widening of intercostal space are also seen. Blood culture was negative. CT scan of chest shown multiple cystic air filled space of variable size are noted in right lung with compression collapse and consolidation of adjacent lung. Finding were consistant with pneumatocele involving right lung. We first tried to manage the patient medically. The child was treated conservatively with injectable antibiotic, oral bronchodilator, expectorant, antipyretic and nebulization but the baby's condition was not improved. So we planned for operative treatment. After proper evaluation of general condition, operation was performed one and half months after admission. Under general anesthesia with one lung ventilation, chest opened with standard posterolateral thoracotomy incision through right 4th intercostals space. A cystic cavity filled with air, was found occupying nearly whole of the right chest cavity (Fig-II). The cystic cavity was carefully dissected out, after removal of cavity right lung expanded properly (Fig-III), with minimum fistula. After haemostasis chest wall closed in layers keeping two drains one in apical and one in basal position. The tissue sent for histopathological examination and microscopic examination reveals section of cyst wall, composed of granulation tissue and fibrous tissue, it is infiltrated with chronic inflammatory cells and foamy histiocytes, consistant with pneumatocele. On first post operative day, breath sound was present on both side of chest in all the area and chest radiograph showed bronchovascular markings present in right side of chest suggestive of expanded right lung, drain tube collection were minimum. Apical chest tube was removed on 3rd post operative day and basal chest tube removed on 6th post operative day. The baby was discharged from hospital on 8th post operative day with advice of follow up visit after one month with CXR P/A view. After one month the baby's general condition improved with normal CXR finding.

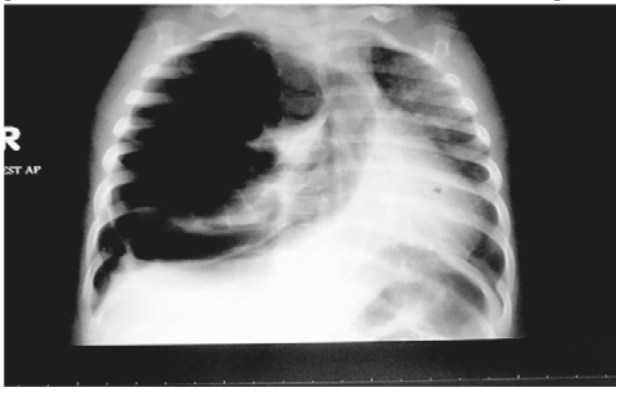

Fig-I : CXR P/A view showing large translucent area involvement of upper, mid and lower zone with devoid of lung margin with septum in right side consistent with

Fig-II : Thoracotomy through rt 4th intercostal space showing cystic structure occupying whole of rt pleural cavity.

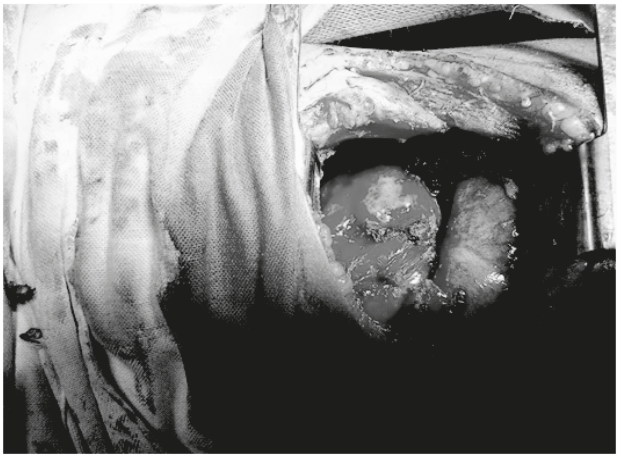

Fig-III : Thoracotomy through rt 4th intercostal space showing fully expanded lung after excision of

Discussion

Pulmonary pneumatoceles are air collections in the interstitium of the lung. Mostly, they occur as sequelae to acute bacterial pneumonia, reported as Staphylococcus aureus, Streptococcus pneumoniae, Proteus mirabilis, Escherichia coli or Acinetobacter calcoaceticus. Noninfectious etiologies include hydrocarbon ingestion, trauma, and secondary to positive pressure ventilation[7]. Tension pneumatocele can be defined as expanding air-filled pulmonary cyst, usually of postinfectious origin, compressing adjacent area of the lung and resulting in cardiorespiratory compromise.Most pneumatoceles occur as a complication of pneumonia. They are known to resolve spontaneously over several weeks or months. Rarely, they may result in complications of tension, infection, and rupture which may be life threatening and requires prompt attention. Tension pneumatocele enlarges significantly compressing adjacent lung and mediastinum resulting in cardiovascular collapse[2]. Our baby patient was diagnosed as a case of pneumonia. Most of the cases reported in the literature were infants and children. Apart from the index patient who presented with double tension pneumatoceles at 3 months of age, only one patient reported by Papageorgiou et al. developed clinical and

radiologic features of traumatic pneumatocele on the 42nd day of life[8]. Most of the cases of adult patients reported in the literature had an additional underlying pathology[9]. Our baby patient was infant.Our patient had multiple pneumatoceles, all confined to the right lung. Multiple tension pneumatoceles are very rare in the pediatric population. There is no consensus in the literature regarding which lung is mostly affected.

Many modalities of treatment have been described in the literature. Image-guided percutaneous drainage, compression, catheter drainage and tube drainage are effective treatment modalities for single tension pneumatocele. Wu and Chen reported failed thoracostomy drainage in a patient with multiple pneumatoceles[10] Pneumonostomy and lung resection surgery (lobectomy and pneumonectomy) have been performed in patients with multiple tension pneumatoceles or after failure of tube thoracostomy drainage[11]. Our baby patient was first treated conservatively, then surgery done successfully and the baby's condition symptomatically improved.

Tension pneumatocele is a rare complication of pneumonia. Close observation in the early stages of the infection and periodic follow-up care until resolution of the pneumatocele is usually adequate treatment option. But some times surgical treatment is helpful for symptomatic improvement of patient's condition. Here a case of tension pneumatocele involving right hemithorax with collapsed right lung described. Surgical management done successfully with symptomatic improvement of baby's condition and complete expansion of right lung.

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Pulmonary Alveolar Microlithiasis(PAM)

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Abstract

PAM is a rare parenchymal Lung disease. Very few case report are available about PAM in Bangladesh. It is diagnosed incidentally during chest radiograph. It is a autosomal recessive disease and is associated with sporadic or familial mutation of SLC 34A2 gene. Many patients are asymptomatic and have either normal or restrictive pulmonary function. Some patients remain static and others progress into pulmonary dysfunction, respiratory failure and corpulmonale. The disease is usually discovered up to 40 years and there is no definitive treatment of this disease. Chest radiograph, HRCT used lung biopsy (transbronchial or open) are the main investigations. This patient come with chest pain and dyspnoea on exertion and nonproductive cough and diagnosed as PAM incidentally during chest radiograph. On the basis of clinical features and laboratory finding, we diagnosed him a case of PAM a very rare condition. As there is no definitive treatment, we treat himsymptomatically.

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Case Report

A 25 years old businessman hailing from Haricharan, Pirgacha, Rangpur was admitted on Rangpur medical college Hospital on 17th September 2014 presented with cheat pain for 5 to 3 years which is mild and not associated with exertion and is not radiated to another side and respiratory distress on exertion for 2 to 3 years which is gradually increasing. He has no recent history of respiratory tract infection and although he had a slight cough, sputum production was minimal. He has smoking history for l0 years and smoking 5 to 7 stick per day 3to 4 years back but had stopped smoking because of increasing dyspnoea. He has past history of pulmonary tuberculosis 12 to 13 years back. Then he Completed CAT-I anti-TB drugs. There is no history of consanguinity of marriage between his parents .General examination revealed patient was well looking having average body build according to his age, pulse-88 beat per minute, BP-120/80 mm of Hg, respiratory rate-18/min. He has no anaemia, jaundice, cyanosis or lymphadenopathy. All other Systemic examinations were revealed normal. Investigations reveals total count 8500/cmm, differential count-neutrophils 61%, lymphocytes 35%, monocytes 02%, eosinophils 02%, basophils 00%, heamoglobin l2.2g/dl, E.S.R l0mm at the end of 1st hour. (wintergreen method), random serum glucose 92mg/dl ,sputum for AFB- negative (2samples), mantoux test- negative, X-ray chest P/A view-shows suggestive of alveolar microlithiasis(figure I).

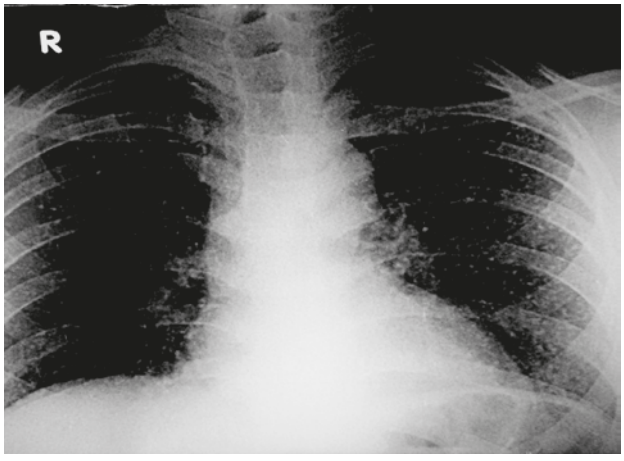

Figure I: Multiple milliary motling like shadow all over lung field

ECG of All chest leads are within normal limit. Echocardiogram shows good LV systolic function. CT Scan of chest suggestive of alveolar microlithiasis (figure II). Forced expiratory volume in one second of 74% or 2.93L FEV1/FVC94%, PEFR=6.33 (68%)

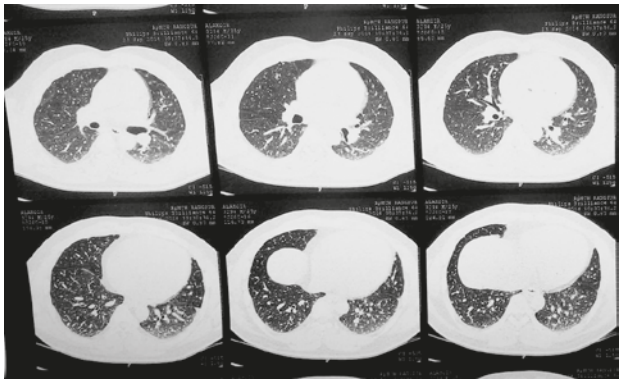

Figure II: Numerous hyperdense area all over lung field

Discussion

PAM is a rare disease that presents chronic evaluation, poorly defined etiology and pathogenesis and is basically characterized by numerous calculi(denominated calciferites, calcospherites or microlites) within air spaces[1-9]. Patients may remain asymptomatic for many years and do usually become symptomatic between the third and fourth decades[3,6,10]. At clinical presentation Patients usually demonstrate a lung disorder with restrictive pattern[3,5-7,12]. Adult patients commonly show progressive deterioration of the pulmonary function and dead usually occur in mid-life because of respiratory failure associated with corpulmonale[7,11,12] and there is no important predominance of gender[2,4,14]. The disease presents a high incidence of familiar occurrence (approximately one third of the cases) suggesting an autosomal recessive inheritance pattern[2,5,8,10]. Most reported cases of pulmonary alveolar microlithiasis have occurred in turkey, Japan and Italy, However the disease is not region specific,it may be seen any where in the world[21,22]. Although the aetiology of PAM remain unclear, mutations of SLC 34A2 gene, which encodes a type to sodium dependent phosphate co-transporter (Napi-llb) are considered to be the cause of the disease[14] SLC34A2 is primarily expressed in the lung and here only in alveolar type 2 cells[14,15]. These cells are responsible for production of surfactant. Loss of function of the gene due to mutations may lead to a decreased cell uptake of phosphate, which in turn may lead to formation of intra - alveolar microlithiasis as a result of phosphate chelating calcium in the extracellular fluid[14,16]. Although the SLC 34A2 gene is involved in phosphate homeostasis in several organs including the lung[16,17], blood levels of calcium and phosphate are usually normal in Pam[13,18,19,20]. PAM is often diagnosed early in the clinical course of disease, although the result of the initial laboratory work up are often unremarkable, with no identifiable underlying disorder of calcium metabolism[23]. However, even with early recognization of the disease , the lack of treatment option results in a poor long term prognosis[22,23]. Although patients with PAM often experience n protracted disease course, they may be asymptomatic for years before respiratory insufficiency become manifest[21,22], typically as seen in our case, patients present with progressive dyspnoea, a restrictive pattern of lung disease and decreased diffusion capacity[21,22,23]. Respiratory insufficiency eventually progresses to pulmonary fibrosis, end stage lung disease and chronic pulmonary heart disease. Extra pulmonary involvement is uncommon[22]. Death is often due to a combination of pulmonary dysfunction and subsequent corpulmonale[22,23]. On radiographs, PAM is characterized by diffuse fine calcific micro nodules that involve both lung in a pattern that is classically described as sand storm-like[24,25,26,38].

Increased calcific densities are often move pronounced in the lower lung zones, a fact that has been attributed to the larger surface area and greater thickness of the lower part of the lungs[27]. High-resolution CT with thin section acquisitions and high spatial frequency, reconstruction algorithms is preferred for the evaluation of pulmonary alveolar microlithiasis because it allows detection of minimal structural changes of the lung parenchyma that are not optimally evaluated with radiography or with other CT techniques. The characteristics findings of extensive innumerable microlithiasis involving both lungs is noted with a predisposition for the posterior segments of the lower lobes and anterior segments of the upper lobes[26-31.] Additionally, the medial aspect of the lung appears to be more heavily involved than the lateral aspects 2r.microliths can also be seen along the bronchovascular and sub pleural interstitium, resulting in a thickened, micro nodular appearance of these structures[26]. Calcifications of the pleura also have been reported[27], No definite treatment is available. Home oxygen therapy is necessary for the patients with respiratory insufficiency. Systemic corticosteroid and bronchoalveolar lavage have been shown to be ineffective .In general, No therapy has proved beneficial including whole lung lavage[32,33], Lung transplantation has been performed in a few patients. Some patients have under gone bilateral sequential lung transplantation or unilateral lung transplantation[34,35,36] Disodium etidronate, which is known to inhibit the microcrystal growth of hydroxyapatite has been used in the dose of 10 mg/kg per day orally for as long as on year with considerable regression of the calcific densities[37].

In conclusion, PAM is diagnosed incidentally during chest radiograph. Most cases are asymptomatic for many years. But it may progress to corpulmonale of any other deteriorating evaluation. For this, patient need follow up examination for ling time .

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Case Report

Farazi MMA[1], Salam MA[2] , Azim MA[3]

Abstract

Ventricular shunts are commonly employed in the management of hydrocephalus, Numerous complications such as dissection, migration and malfunction have been reported in the literature. Here we present a case of migration of the peritoneal catheter through anus who attended in our institute. He was managed successfully without further complications.

Keywords: Ventriculoperitoneal shunt (*VP shunt*)*, shunt infection, shunt migration, mediastinum, OFC* (*occipito frontal circumference*) .

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Introduction

Ventriculoperitoneal (VP) shunt is one of the commonly performed procedures for the management of hydrocephalus[1]. Although shunts have decreased the mortality and morbidity associated with hydrocephalus, they are still associated with many potentially avoidable complications. The common complications of VP shunt surgery are infection of shunt, blockage and disconnection, migration of shunt tube, shunt failure, bowel perforation, cerebrospinal fluid (CSF) pseudocyst, inguinal hernia and hydrocele. The incidence of abdominal complication reported in the literature is 10-30%[2]. Extrusion of distal end of VP shunt through anal opening is rare and a lesser known complication[3]. We are reporting one such case of transanal extrusion of the distal end of the VP shunt.

Case Report

A male baby of 3 months of age presented with the complaints of gradual increasing size of the head since birth. On examination his OFC 47 cm, setting sun signs of the eyes, engorgement of the scalp veins, fontanelles arebulged, Ultra sonogram and CT Scan of brain shows gross ventriculomegaly of both lateral and third ventricles. We inserted a ventriculoperitoneal shunt and recovery was uneventful. The baby left the hospital after seven days with advice and follow up after one month. Accordingly after one month follow up he was normal. His OFC became 43cm, eyes are normal and he enjoying a healthy life. But after two months his parents came with the complaints of protrusion of abdominal end of the shunt tube through anus. We admitted him and examined that the peritoneal end of the tube is exteriorized but there was no sign of malfunction. The abdomen was not distended and bowel moved regularly. We did a X-ray abdomen and found that the tube came through perforating the rectum. We reposite the tube per rectally after cutting the distal end of the tube and finally discharged him without any problems.

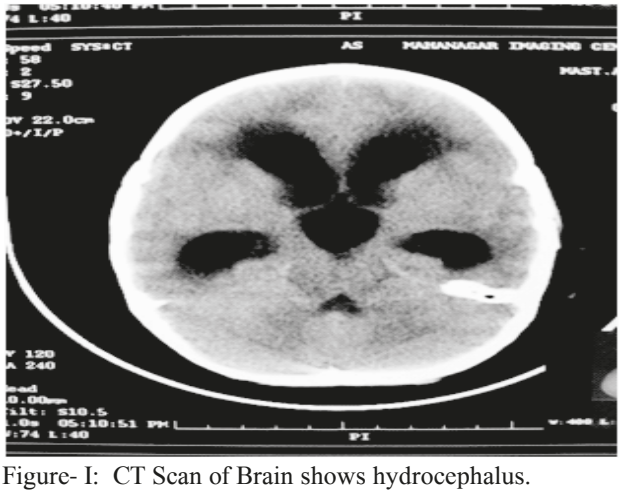

Figure- I: CT Scan of Brain shows hydrocephalus.

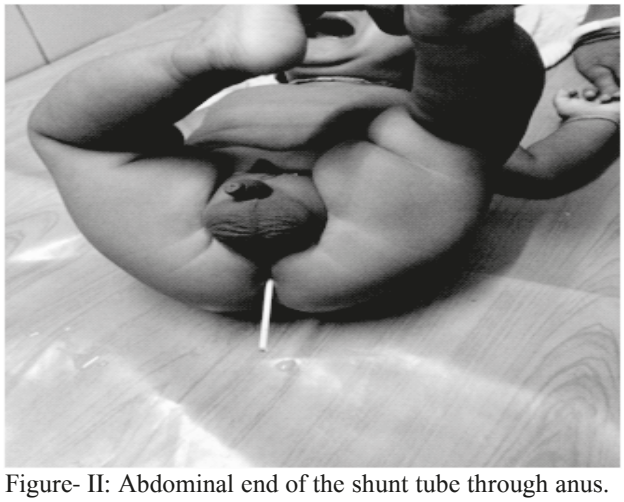

Figure- II: Abdominal end of the shunt tube through anus.

Discussion

There are many complications listed which may be seen after v-p shunt insertion[3, 4,9,13.] Most of these patients present with abdominal signs and/or intracranial sepsis [9]. Inguinal hernia and/or hydrocele may follow the insertion of a ventriculoperitoneal shunt with a frequency ranging from a minimum of 3.8% to a maximum of 16.8% [4,13]. Peritoneal CSF pseudocysts are an infrequent but important complication in patients with ventriculoperitoneal shunts. Their incidence is regarded as ranging between 1 and 4.5%.[4, 11]. Intestinal perforation and anal extrusion of a distal ventriculoperitoneal shunt is an unusual complication. Large intestine is considered the most frequent site of perforation due to VP shunt with an incidence of 0.1-0.7% [11]. The first case of anal extrusion of distal VP shunt was reported by Wilson and Bertrand in 1966[12]. Since then more than 100 such cases have been reported in the literature, predominantly in children. Most of these bowel perforations have asymptomatic course and are diagnosed only after the trans-anal shunt extrusion. Only a small proportion of children have clinical manifestations. Children with meningitis, encephalitis or ventriculitis due to *E.coli* or other gram negative coliform bacteria should be considered to have an undiagnosed asymptomatic bowel perforation due to VP shunt [13,14]. The exact basis of VP shunt related bowel perforation has not been fully defined. Various proposed mechanisms include foreign body reaction because of silicon tubing of VP shunt, pressure necrosis, and weak bowel musculature. Local inflammation and resulting fibrosis, adherence of shunt tube and continuous water hammer effect of CSF pulsations can erode the intestinal wall. Once in bowel lumen, shunt tube is driven downward and forward by peristaltic waves. Poor host immunity, surgical technique and long shunt tube in peritoneal cavity also contributes to shunt extrusion. The management of these cases most importantly involves early diagnosis of bowel perforation. X-ray following injection of contrast medium into shunt tubing, can give a clue to the diagnosis. The treatment of these cases involves shunt removal, intravenous antibiotics and re-insertion of shunt at an appropriate time or external ventricular drainage. In case of anal extrusion, distal shunt tube should be divided after traction at an anal verge and remaining shunt assembly should be removed by neck incision. After removal of VP shunt, intestinal perforation heals spontaneously. Emergency laparotomy in required only in cases presenting with features of peritonitis. In our case, only presentation was spontaneous protrusion of shunt tube from anal opening. Peritoneal end of shunt tube was divided after traction, as contaminated tube should not be allowed to be in contact with the peritoneum or the shunt tract[15]. It is done to lower the theoretical risk of infection. Patient was clinically asymptomatic during discharge from hospital.

In conclusion, this case reaffirms the need of close follow up of patients with VP shunts for timely detection and management of potentially fatal complications.

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Rahman MM[1] , Ferdous B[2], Tarik SA[3], Uddin MM[4] , Haque A[5]

Abstract

Juvenile dermatomyositis (JDM) is an autoimmune vasculopathy affecting children and adolescent under the age of 18 years. In this report, we describe a 9 years old boy who had myopathy and typical skin rash. Upon treatment with oral prednisolone and topical corticosteroid the patient condition considerably improved. Our case report illustrates that JDM requires comprehensive evaluation and multidisciplinary management.

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Introduction

Juvenile dermatomyositis (JDM) is a rare autoimmune vasculopathy of childhood that preferentially affects dermal and muscular vessels. By definition, the onset of JDM is prior to the age of 18, whereas the average onset is in the 7th to 8th year of life, with a slight preference for the female gender[1]. the etiology of JDM is not yet clear, but there is a disproportional association with certain HLA alleles, such as B8[2], DRB1*0301, DQA1*0501[3] and DQA1*0301[4] has been reported, suggesting genetic susceptibility.Polymorphisms of both the TNF-α promoter[5] and the interleukin-1 receptor antagonist[6] have been identified as additional risk factors. The incidence of DM is 9.63 cases per million population[7]. Muscle weakness may occur concurrently or after weeks to years[8]. Dermatomyositis may be associated with systemic manifestations like malaise, arthralgia, dyspnoea, etc. However, subcutaneous calcifications are especially common in children[9].Early diagnosis and aggressive treatment can lead to remission and prevention of severe complication[10].

Case Report

A 9 years old boy presented to our department with malar and periorbital heliotrope erythema in figure I below:

Fig- I: Periorbital heliotrope erythema

The rash also involve forehead, chest and different parts of the body in figure II below:

Fig- II: Rash involving chest, forehead and face.

He had severe proximal muscle weakness and arthritis of the different joints. All symptoms persist for more than one year, physical examination revealed erythematous scaly plaques (Gottron papules) over metacarpophalangeal and proximal interphalangeal joints in figure III below:

Fig- III : Gottron papules.

and calcinosis cutis, a tender dystrophic calcification over palmer surface of the finger in figure IV below:

Fig- IV: Calcinosis cutis over palmer surface of finger.

Laboratory examination revealed elevated Creatin kinase and Aldolase, negative rheumatoid factor, Blood count showed Hb(9.9 gm /dl),ESR 60 mm in 1st hour Total count 15200/cmm, X-ray chest and abdominal ultrasonogram showed no abnormality. X-ray of calcinosis cutis showed calcification.

Based on clinical appearances, laboratory and imaging data the diagnosis of JDM was made.

Patient was administered oral prednisolone 2mg/kg/day for 6 weeks then tapered. Calcium and Diltiazem 30 mg once daily was given. In addition topical steroid clobetason proprionate was given for skin lesion for 3 months. The skin lesion and muscle weaknes gradually resolved after 6 weeks of treatment (fig IV). After 3 months skin manifestation had disappeared and muscle enzymes were within normal range. Continuation of the treatment is planned for at least 12 months.

Discussion

Diagnostic criteria for JDM are currently still based on those established by Bohan and Peter[11], which include a characteristic skin eruption, symmetrical proximal muscle weakness, elevated muscle enzymes, pathological muscle histology, and myopathic electromyographic changes. The presence of 3 of these criteria characterizes definite JDM, whereas the prevalence of 2 criteria makes the diagnosis probable. The key to a favourable outcome in cases of JDM is early diagnosis and aggressive pharmacologic corticosteroid treatment[12]. However early diagnosis is often hampered by the nonspecific nature of the the initial signs of JDM, such as fatigue, fever, weight loss, irritability, myalgia and arthalgia. Identification of characteristic skin lesion may help to establish an early diagnosis. Typical cutaneous lesions include a characteristic periorbital heliotrope rash (present in more than two-thirds of patients), facial malar rash, Gottron papules (livid scaly plaques on the extensor surface of joints), and nailfold changes that may present as periungual infarcts. Nailfold capillaroscopy shows reduced capillary density, capillary dropout, branching, and dilatation[13]. In addition, nonspecific eruptions on the extremities and mouth, skin ulcers, lipodystrophy[14], psoriasiform scalp dermatitis[15], and limb edema have been described. Myopathy, mostly affecting the proximal muscles, is present in about 95 percent of dermatomyositis cases ; the existence of amyopathic dermatomyositis is controversial. Myalgia may precede skin rashes, thereby posing a diagnostic challenge[16]. However our patient had typical skin rash, gottron papules and severe proximal myopathy which help us to make diagnosis easy. Muscle enzymes are usually elevated in JDM. In our patient CPK and Aldolase was raised. Histopathologic findings characteristic of dermatomyositis include a moderate perivascular lymphocytic infiltrate around the superficial and deep vascular plexus of the dermis with some lymphocytes scattered at the dermoepidermal junction.but histopathology was not done in our cases. Systemic glucocorticosteroids are the mainstay of therapy.They are administered oraly (up to 2 mg/kg/day of prednisolone) and therapy is continued until there is improvement of clinical and laboratory parameter[17].

Our patient has tolerated oral prednisolone well in figure V below:

Fig- V: 3 months after treatment.

Juvenile Dermatomyositis is a rare disease which causes chronic disability in children.Early diagnosis and effective management with proper pharmacotherapy can prevent morbity and mortality.

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Case Report

Ahmed P[1], Farid GM[2], Ishague T[3], Siddiqua A[4]

Abstract

Uterine fibroids represent the most common large solid benign tumor of the female genital tract. This 35 years old lady, mother of one child represented to our clinic with a history of progressive abdominal swelling that had rapidly increased in the last two years. There were associated abdominal pain, easy fatigability, heavy menstrual loss and prolong secondary subfertility of about ten years. On examination abdomen was enlarged and the mass measuring about 25cm from xiphisternum, firm, irregular and fairly mobile. Pelvic ultrasound scan revealed features of huge multiple uterine fibroids and the size of the largest one was about 20x25cm,moderate bilateral hydro-nephrosis. Intraoperative findings were moderate pelvic adhesions, huge multiple fibroids and the largest measuring about 18x20cm. Total abdominal hysterectomy with preservation of both ovaries were done. Histopathological report confirmed benign leiomyoma with no evidence of malignancy.

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Introduction

Uterine fibroids are the most common benign tumors that develop in the muscular walls of the uterus and are common is women of African origin[1]. Fibroids affect 20-50% of women of reproductive age[2]. The aetiology of uterine fibroids is unclear. Nalliparity, hereditary, black race, obesity, polycystic ovarian syndrome, hypertension and diabetes mellitue are associated with increased risk of uterine fibroids[3]. Fibroids may present with menstrual dysfunction, pain, pressure related symptoms, sub-fertility and pregnancy related problems[5, 4]. Uterine fibroids may recur after myomectomy with a period incidence of 1 to 58.8%. Large uterine fibroids are common in our environments; however it is uncommon for recurrent uterine fibroids to grow to a large without seeking intervention.

Case Report

This 35 year old lady presented to our clinic with a five year history of progressive abdominal swelling that had rapidly increased in the last 2 years. There were associated abdominal pains, easy fatigability and heavy menstrual loss but no history of post coital bleeding. Her menarche was at the age of 15 years with a regular cycle. She is mother of one child and had history of prolong secondary sub-fertility of about 10 years. General examination revealed a middle aged woman, moderately pale. The Abdomen was enlarged and a mass measuring about 25cm form the pubis to xiphisternum. It was firm, irregular and fairly mobile. Pelvic examination was unremarkable. A provisional diagnosis of recurrent symptomatic uterine fibroids was made. Pelvic ultrasound scan revealed features suggestive of huge multiple uterine fibroids and the size of the largest one was about 20×25cm, moderate bilateral hydronephrosis. Intravenous urography showed right renal pelvis diverticulation and incomplete right ureteric obstruction presumably due to an intraluminal filling defects. Full blood count revealed heamoglobin of 8g/l. She was transfused two units of blood and counseled for total abdominal hysterectomy. Intraoperative findings were moderate pelvic adhesions, huge multiple fibroids and the largest measuring about 18×22cm. Fallopian tubes and ovaries were normal. Careful adhesiolysis and total abdominal hysterectomy with preservation ovaries was done. She had two more units of blood. She made a good post-operative recovery and was reviewed 6 weeks at gynaecology clinic, with no complaints. Her haemoglobin was 11 g/l and histopathological result confirmed begins leiomyoma with no evidence of malignancy.

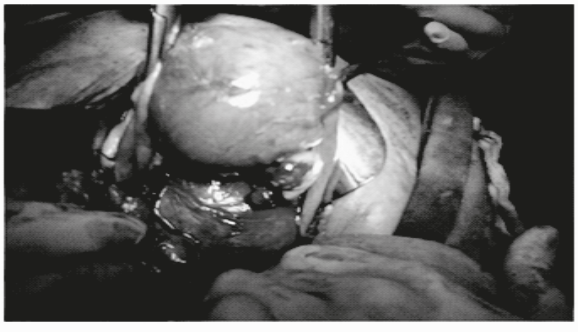

Fig- I: A large intramural Leiomyoma before removal

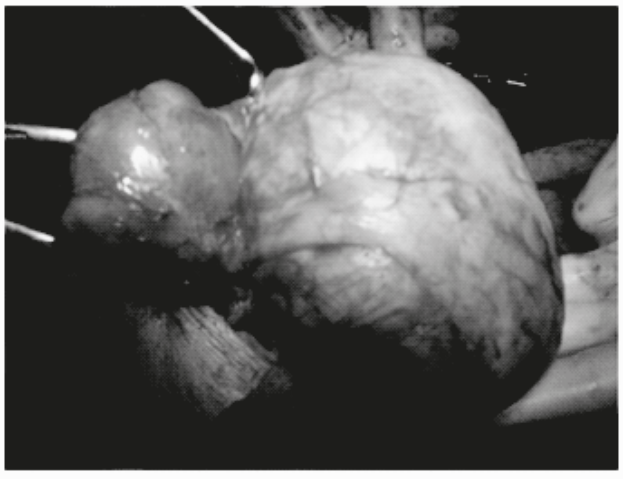

Fig- II: A large intramural Leiomyoma after removal

Discussion

Uterine fibroids represent the most common large solid benign tumor of the female genital tract in our environment. The average uterine size at present is ± 15 9.7weeks[7]. Our patient presented with a uterine size of 25 weeks, which is an uncommon occurrence in this community. In a review of uterine fibroid from south western Nigeria, out of the one thousand two hundred and fifty nine cases, only 4% presented with a uterine size of more than 20 weeks[7]. The delay in presentation is probably due to strong desire of our female folk for a pregnancy and aversion for surgery[8]. Mymectomy has been the traditional surgery for the tumor though unsuccessful mymoectomy may result in hysterectomy[9]. The size of the fibroid in our patient made us counsel her primarily for hysterectomy despite her strong desire for pregnancy as mymectomy in her could be threatened her severe intraoperative complications. For smaller tumors laparoscopic myomectomy is done in centers with necessary equipment and expertise. Laparoscopic bipolar coagulation of uterine vessels has been reported[7]. Interventional radiology have place in management of large fibroids. This case highlights the problem of dealing with difficult cases in under-resourced environment. We are aware other treatment options are available in many well resources centers.

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