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Yaba : an social alarm

Yaba addiction is now the number one addiction related problem Bangladesh is facing. Yaba in Bangladesh has reached epidemic proportions in the past decade. Many factors influences such high insurgence; first and foremost is easy availability of this drug, second being cheap (70-500 Tk a piece)¹. There are so many debatable reasons why this drug or any drug is polluting society, but more and more families are getting victimized every day. A holistic approach involving all sectors of the society is needed to combat such an issue. Because it's social impact will be humongous in coming years. As a physician we also have a vital role in educating the society about its detrimental effect, so that no new user emerges & also deal the already victimized individual very delicately.

Let's just recall some useful facts about yaba, which is a synthetic drug manufactured by combining methamphetamine with caffeine. Most yaba tablets contain 25-35 mg of methamphetamine & 45-65 mg of caffeine². In combination they are a powerful and potent CNS stimulant.

Immediate Effects of Yaba

Yaba is metabolized slowly so the immediate effects will last longer. After taking yaba, initially a sense of euphoria and well-being ensues, followed by increased energy and alertness, which make one feel invincible. One of the major surprise affects that first-time users experience is intense insomnia (keep awake for two days). Due to both the effects

of the drug and lack of sleep, state of confusion arises thereafter followed by irritability, aggressiveness & violence³.

Some other short-term effects of using yaba are: Loss of appetite, increased heart rate & blood pressure, increased body temperature, dilated pupils, nausea².

Long-Term Effects of Yaba

Yaba destroys small blood vessels throughout the body, but especially in the brain and the lining of the heart. This can lead to heart attacks or strokes among frequent yaba users. Chronic abusers may also experience : high blood pressure, weight loss, constant trembling, anxiety, psychotic behavior, delusions and hallucinations, violent behavior, paranoia, symptoms that mimic schizophrenia³.

Scans of methamphetamine addicts' brains indicate that these drugs damage critical centers used for logic and reasoning. Reduced dopamine activity in methamphetamine addicts impairs coordination, fine motor skills and areas of the brain devoted to emotion and memory. It isn't known if these changes in the brain can be reversed once an individual stops abusing yaba or methamphetamine.

Managing yaba addiction

Yaba addiction is difficult to overcome, but getting clean is possible. Early intervention

increases the chances of quitting successfully, and it helps to curtail the serious risks of long term use. Yaba has the property of development of tolerance leading to progressive increase in amount of drug requirement. So earlier brought under medical attention, better is the outcome.

Withdrawal symptoms for yaba are acute and often painful. Depressions, becoming very emotional & suicidal tendency are common. That's why it's better to seek help of a professional drug rehabilitation centre.

Protocols for treating such withdrawal symptoms are straightforward, anti-convulsants & antidepressants. Routine investigations are also done to monitor detox process as well as to screen for liver and kidney damage. Because yaba addicts frequently restrain themselves from taking food, they develop nutritional deficiencies. So healthy food is also part of the treatment plan.

As with all addictions, 3 aspects of the patient has to be dealt with, like physical, mental and spiritual. To achieve these, the medical facilities must have the right approach towards helping the patient as a whole. After returning home, an ex-yaba addict must be treated with utmost respect and compassion. Family can really make a world of difference in such a situation. But as we said before, a holistic measure has to be taken. Social responsibility of the society is no less than the medical and family support. Role of the law enforcement authorities is premium. If the easy availability of the drug can't be prevented, all the hard work of treating a patient will be lost. We also hope that conscience will hunt those who uses the yaba business to ruin the society. If we can use a little bit of wisdom to understand that cutting the branch on which we are standing would

be last thing to do. We are looking forward to live in an addiction-free society.

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Association of Ventricular Extension and Short Term Outcome in Primary Intracerebral Haemorrhage

Wazib A¹, Kamal FN², Rahman S³, Ahmad B⁴, Irteeja S⁵, Hossain MM⁶, Hasan MAS⁷, Saha SK⁸, Islam T⁹, Ghosh SK¹⁰

ABSTRACT

BACKGROUND : Primary intracerebral haemorrhage (ICH) accounts for approximately 10 to 15 percent of all strokes. It kills about half of those affected within one month and leaves most survivors disabled. Despite the high mortality, greater degree of functional restoration is observed among the survivors of spontaneous ICH. So short term mortality and morbidity can be considered as a reliable parameter of the overall outcome in spontaneous ICH. Ventricular extension is a significant predictor of short term outcome in supratentorial ICH.

METHOD : This was a hospital based follow-up study on ninety six supratentorial primary intracerebral haemorrhage (ICH) patients, admitted in the departments of Medicine, Neurology and Neurosurgery of Dhaka Medical College & Hospital.

RESULTS : Mean age of the study subjects was 67.4 ±12.8 years, with male-female ratio of 1.27. Most frequent symptoms were headache and hemiparesis. Hypertension and smoking were the major risk factors found in this study. Putamen was the most favoured site of ICH. Higher short term mortality and morbidity were observed in primary ICH with ventricular extension.

CONCLUSION : Ventricular extension is associated with higher proportions of GCS score < 9 at the end of the first week after onset. So can be considered as an independent predictor of short term morbidity and mortality in patients with spontaneous supratentorial intracerebral haemorrhage.

KEY WORDS : Primary intracerebral haemorrhage, ventricular extension.

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INTRODUCTION :

Stroke, defined as focal or global neurological deficit of non-traumatic vascular origin which lasts 24 hours or more if the patient survives,¹ clearly ranks first among all the neurologic diseases of adult, both in frequency and importance. At least half of the patients with a neurologic disorder attending general hospitals suffer from stroke.² The high number of disability-adjusted life-years lost due to stroke (485 per 10000 people) shows that stroke severely impacts the economy of Bangladesh.³ Primary intracerebral haemorrhage (ICH) accounts for approximately 10 to 15 percent of all strokes.⁴ It kills about half of those affected within one month and leaves most survivors disabled.⁵ Case fatality has not changed in spontaneous ICH over the past few decades.⁶ Hypertension is responsible for 70 to 80 percent of spontaneous ICH.⁷ Supratentorial ICH comprises 65 percent of hypertensive ICH and 80 percent of non-hypertensive ICH.^{8,9}

Overall incidence of spontaneous ICH is approximately 0.25 per 1000 person-years, higher among Asians, 0.5 per 1000 person-year.¹⁰ Prevalence of stroke in Bangladesh is approximately 3 per 1000 person-year overall and 10 per 1000 person-year in people aged 70 years or more.¹¹ No data on incidence of spontaneous ICH have been recorded in Bangladesh. ICH comprised 31 and 28 percent of all stroke patients in studies conducted in Bangladesh and Pakistan respectively.^{12, 13}

Immediate prognosis for spontaneous ICH is grave, 30 to 35 percent die within 30 days, most of them die within the first week.^{2,14} Metabolic disturbances, especially hyperglycaemia and electrolyte imbalance influence the clinical outcome.^{15,16,17} Despite the high mortality, greater degree of functional restoration is observed among the survivors of spontaneous ICH. This is largely

because of the fact that haemorrhages pushes the brain tissue aside, rather destroying it, as happens in infarction. Recovery is usually gradual as the clot takes time to be removed.² So short term mortality and morbidity can be considered as a reliable parameter of the overall outcome in spontaneous ICH.

ICH must be distinguished from ischaemic stroke as managements of these two conditions are dramatically opposite. Anti-platelet drugs, the cornerstone in the treatment of ischaemic stroke are likely to produce deleterious consequences in ICH. No clinical scoring system has been shown to reliably differentiate ICH from ischaemic stroke.⁶ Timely brain imaging is the key to recognize intracerebral haemorrhage.⁵

CT scan occupies the foremost position for rapid diagnosis of ICH. It is more sensitive for acute haemorrhage than routine magnetic resonance imaging (MRI). It can detect acute haemorrhage of 1 cm or more diameter. Small brain stem haemorrhages may be missed because of bony artifact. At the same time, co-existing ventricular extension, hydrocephalus, cerebral swelling and displacement of intracranial contents are readily appreciated. CT scan is widely available, even at district level, in Bangladesh. The cost is far cheaper than that of MRI as well. So CT scan is the preferred neuroimaging method for evaluation of acute stroke and is usually done within the shortest possible time.

A study conducted by the Stroke Project of the Spanish Neurological Society, intraventricular contamination was related to poor outcome.¹⁸ Ventricular extension had statistically significant higher incidence of low GCS score, neurological deterioration and mortality in a study in West Bengal.¹⁹ A study on 129 supratentorial ICH patients admitted

in Mount Sinai School of Medicine, New York revealed that ventricular extension and volume of intraventricular blood were important determinants of short term outcome in supratentorial ICH.²⁰ Another study on 266 patients by the Stroke Project of the Spanish Neurological Society found intraventricular bleeding was associated with poor short term outcome in spontaneous supratentorial ICH.²¹ Ventricular extension was significant independent predictor of early deterioration in a study on 182 black Americans admitted in Emory University School of Medicine, Atlanta, USA.²² Factors independently associated with early mortality in spontaneous ICH were Glasgow Coma Scale score, age ≥ 80 years, infratentorial origin, volume ≥ 30 cc and ventricular extension, found in a study in the University of California, San Francisco.²³ Ventricular extension was identified as significant predictors of early morbidity and mortality in spontaneous ICH in a study on Thai people.²⁴ The majority of mortality in 54 spontaneous ICH patients admitted into BDF Hospital, Bahrain occurred during the first two weeks. Presence of ventricular extension was an important prognostic factor.²⁵ No study was done in Bangladesh before this one, to see the association of ventricular extension in spontaneous ICH and short term outcome.

MATERIALS & METHODS :

This was a hospital based follow-up study conducted on patients with supratentorial primary ICH, admitted in the departments of Medicine, Neurology and Neurosurgery of Dhaka Medical College Hospital between July and December, 2017. Patients with supratentorial primary ICH of age 18 years or more admitted into hospital within 48 hours

of onset of symptoms were included. Patients with head injuries, infratentorial haemorrhages, tumour haemorrhages, haemorrhagic infarcts or haemorrhagic diathesis, serious co-morbidity (e.g. chronic kidney disease, heart failure, metabolic encephalopathy) and those undergoing surgical procedure were excluded.

One hundred patients were initially registered in this study. Four patients were dropped due to inadequate follow-up. Ninety six patients were included for the final analysis.

The basic demographic variables and important vascular risk factors were recorded. A detailed history was taken and a thorough neurological examination was performed in every patient. CT scan of head was done on every patient as early as possible. Acute supratentorial ICH were detected as hyperdense round or oval lesions located above the tentorium cerebelli. Ventricular extension was searched and recorded if present. All the patients received the standard medical management of spontaneous ICH according to the guideline of American Heart Association and American Stroke Association, as far as practicable.²⁶

The patients were followed-up daily during the first week after onset. Glasgow coma scale (GCS) score, and any mortality and neurological deterioration were recorded. Neurological deterioration was defined as deterioration of GCS score by ≥ 2 , development of new focal neurological deficits or deterioration of existing neurological deficits.²⁷

GCS score at the end of first week after onset, and neurological deterioration and mortality within that period were taken as outcomes. GCS score < 9 at the end of first week, and presence of neurological deterioration and

mortality within that period were taken as poor outcomes. GCS score ≥ 9 at the end of first week, absence of neurological deterioration and survival within that period were taken as favourable outcomes. In patients who died before day seven, outcomes were measured on the day of death. Association between ventricular extension and the clinical outcomes were assessed.

The data analysis was done using standard statistical procedures. Statistical significance was measured as 95 percent confidence interval. In addition, qualitative and quantitative data were analyzed with chi-square and unpaired T-tests respectively. Associations were expressed in terms of relative risk.

Prior to the commencement of this study, the research protocol was approved by the local Ethical Committee. The objectives of the study along with its procedure and risks and benefits of this study were explained to the patients/attendants in easily understandable language and then informed written consent was taken from each patient/attendant. It was assured that all information and records would be kept confidential and the study would be helpful for both the researcher and the patients.

RESULTS :

Total ninety six patients of primary ICH were included in the study. Fifty four (56 %) were males and forty two (44 %) were females. The age of the patients ranged from 24 to 89 years. Mean age was 67.4 ± 12.8 years. Majority of the patients aged more than 60 years (75 percent), in both sexes, 70 and 75% among males and females respectively.

Table I : Risk factors of ICH in study subjects (n=96) , (not mutually exclusive)

<i>Risk factor</i>	<i>Male n(%)</i>	<i>Female n(%)</i>	<i>Total n(%)</i>
Hypertension	39 (72)	33 (78)	72 (75)
Smoking	32 (59)	2 (5)	34 (35)
Family History	4 (20)	9 (21)	6 (6)
Previous stroke	3 (6)	0 (0.0)	3 (3)

Hypertension was found in 75 %of patients. Smoking was a major risk factor in males (59 %). Family history of stroke and previous stroke were other risk factors found in both sexes (Table I).

Table II : Presenting symptoms in study subjects (n=96), (not mutually exclusive)

<i>Symptoms</i>	<i>Frequency(%)</i>
Headache	77 (80.2)
Hemiplegia/paresis	70 (72.9)
Vomiting	56 (58.3)
Unconsciousness	25 (26.0)
Dysphasia/ aphasia	15 (15.6)
Dysarthria	10 (10.4)
Abnormal behaviour	10 (10.4)
Convulsion	7 (7.3)
Mono-paresis	2 (2.1)
Hemi-sensory loss	2 (2.1)

Headache is the most frequent complaint (80 %). Hemiparesis/plegia was the next common presenting feature and most frequent focal neurological deficit (73%). Vomiting was common also present in 58 %. (Table II).

ICH were found in putamen (55%), cerebral lobes (43%) and thalamus (2%) (Fig.1). Putamen is the favoured site for hypertensive ICH (Figure 2). On the other hand, lobar ICH was found mainly in non-hypertensive ICH (Fig. 3).

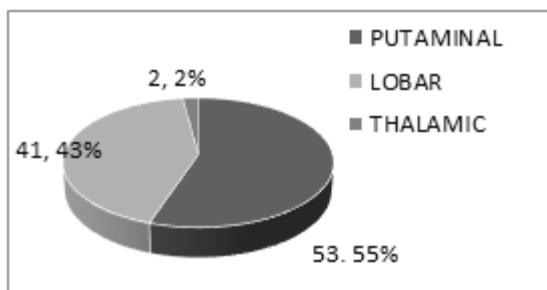


Fig.1: Location of ICH in study subjects (n=96)

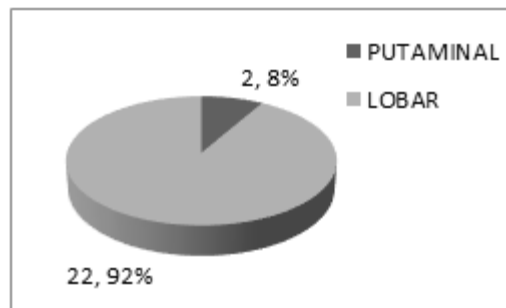


Fig. 3 : Location of non-hypertensive ICH (n=24)

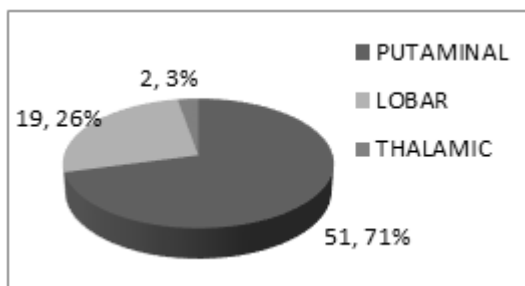


Fig. 2 : location of hypertensive ICH (n=72)

Thirty one study subjects had ventricular extension. Ventricular extension was associated with higher proportion of GCS score < 9 at day 7 with relative risk 2.20 which was statistically significant (95 % CI 1.21 – 4.02, p-value 0.01) (Table III).

Neurological deterioration was also found more in these patients (relative risk 1.93, 95 % CI 1.08 – 3.41, p-value 0.03) (Table III) A higher mortality was observed too in these patients (relative risk 2.02, 95 % CI 1.01 – 4.04, p-value 0.05). (Table III)

Table III: Association of short term outcome and ventricular extension in primary ICH (n=96)

Outcome		Ventricular extension		Relative risk	95 percent CI	p-value
		Present (n ₁ =31)	Absent (n ₂ =65)			
GCS score at the end of first week	< 9	14(47)	14(21)	2.20	1.21 – 4.02	0.01*
	≥ 9	16(53)	52(79)			
Neurological deterioration during first week	Yes	14(47)	16(24)	1.93	1.08 – 3.41	0.03*
	No	16(53)	50(76)			
Mortality within first week	Dead	11(37)	12(18)	2.02	1.01 – 4.04	0.05*
	Alive	19(63)	54(82)			

DISCUSSION :

Ninety six patients of supratentorial primary ICH were included in this study. Most (75 %) of the patients were of 60 years or more age. Mean age was 67.4 ± 12.8 years. The age distribution was similar to that of most of the previous studies conducted in Bangladesh and India.^{19,28,29} Number of males (56 %) was more than that of females (44%). Similar sex distribution was found in Netherlands.¹⁴

The cause could not be revealed in the rest of the patients as the study was done within the first week of stroke and the more extensive investigations were deferred during that period. However, exclusion of tumour haemorrhages, haemorrhages in bleeding disorders and anticoagulant and fibrinolytic therapy, and haemorrhagic infarcts, was rationally suggestive of amyloid angiopathy and vascular malformations as the cause in non-hypertensive patients.

Headache was the most frequent presenting feature followed by hemiparesis/plegia, vomiting and deteriorated consciousness. Convulsion was not a common presenting feature, found in 7 %patients. Al-Dahhan and Siddique found similar results in spontaneous ICH, though proportion of patients presenting with deteriorated consciousness was lower in this study.^{9,29} Exclusion of infratentorial haemorrhages might explain this discrepancy.

Putamen was the most favoured site for hypertensive ICH (71%), like described by Ropper and Lindsay.^{2,31} But it was higher than that found in a study in Pakistan.³² On the other hand, most of the non-hypertensive ICH (92%) were found to be lobar. This distribution was higher than found in studies in India and United States.^{30,33} Most of the patients in this study were of ≥ 70 years age. So amyloid angiopathy could be responsible

for majority of the non-hypertensive ICH in this study. This explains the very high incidence of lobar haemorrhages in non-hypertensive cases. Only two patients, both were hypertensive, had thalamic haemorrhage. No case of caudate haemorrhage was found. Spontaneous ICH in these locations is infrequent.⁷A relatively small sample size (96) might be the reason behind their low frequency in this study.

Ventricular extension was found in 31 percent patients, which is consistent with most other studies.^{20,22}

GCS score < 9 at the end of the first week was found in twenty eight (29 percent) patients. Thirty (30%) patients deteriorated neurologically over the first week. Overall mortality was twenty three (24%). Similar outcome regarding morbidity was observed in studies on spontaneous intracerebral haemorrhage patients conducted by Mayo Clinic³⁴, but mortality was lower in this study. Exclusion of infratentorial haemorrhages might be the reason behind lower mortality in our series.

Ventricular extension was associated with higher proportion of GCS score < 9 at the end of first week as well as neurological deterioration and mortality during this period. This finding was consistent with numbers of previous studies.^{18,25,34}

LIMITATIONS :

Relatively small sample size and sample collection by convenience sampling were the main weak points of this study. Besides confounders like metabolic disturbances, especially hyperglycaemia and electrolyte imbalance that had the potential to influence

the clinical outcome, were neither matched nor excluded.

CONCLUSION :

Ventricular extension is associated with higher proportions of GCS score < 9 at the end of the first week after onset, and neurological deterioration and mortality within this period in the patients with spontaneous supratentorial intracerebral haemorrhages. Ventricular extension can be considered as an independent predictor of short term morbidity and mortality in patients with spontaneous supratentorial intracerebral haemorrhage.

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Heart rate study of male football athletes of a sports academy of Bangladesh by interpretation of ECG

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ABSTRACT

BACKGROUND : Athletes require regular intensive exercise and training, which may cause structural and functional changes in the heart. These changes are reflected on ECG, which varies according to the status of the athlete and their training module.

OBJECTIVE : Football is a very popular game in Bangladesh and objective is to study the changes in cardiac function of Bangladeshi football players.

METHOD : It's a case control study, where 50 athletic students of 20-30 years old was enrolled from a renowned sport academy of Bangladesh named Bangladesh Krira Shikkha Protisthan (BKSP). 50 age-matched healthy non-athlete men were selected as controls. ECG and other data were collected during the colder part of the year.

RESULTS : In this study, heart rate was significantly ($p < 0.001$) decreased in study group than that of control group, which is statistically significant.

CONCLUSION : Routine screening of athlete's will provide more information regarding their physiologic adaptation to exercise, which will improve morbidity of athletes in long run.

KEY WORDS : Electrocardiograph , Football , Athletes , Bangladesh

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INTRODUCTION :

Athletes require regular intensive exercise and training, responsible for structural and functional changes in their hearts, which are reflected on electrocardiogram (ECG) findings¹. The most common finding in athlete's ECG is sinus bradycardia with resting

heart rate as low as 40 beats per minute. The normal heartbeat is initiated by the sinus node which is located high in the right atrium near the junction of the superior vena cava and right atrial appendage. A sinus rhythm consists of following ECG criteria: (1) a P wave before every QRS complex (2) a QRS complex after every P wave, and (3) a P wave with

normal axis. In healthy adults, sinus rhythm <60 beats / min is considered as sinus bradycardia².

There are some postulated mechanisms suggested by various researchers which imply the possible mechanism regarding these changes. Regular physical training and exercise cause physiological adaptation of the cardiac autonomic nervous system such as increased vagal tone and/or withdrawal of sympathetic activity. Increased vagal tone and decreased sympathetic activity result into bradycardia. In athletes the SA node and AV node are suppressed by an increase in vagal tone, which causes their heart rate to decrease and give rise to bradycardia³.

Furthermore the athlete's heart is considerably stronger than that of a normal person, which allows the athlete's heart to pump a larger stroke volume even during periods of rest. Excessive quantities of blood pumped into their arterial tree with each beat and initiate feedback circulatory reflexes or other effects to cause bradycardia⁵. Prolonged workout results into an increase in stroke volume both at rest and during exercise. Stroke volume raises as a result of increased end diastolic volume (EDV) and sympathetic reduction of end systolic volume (ESV). Increased stroke volume causes the heart rate to decrease even at rest⁶.

However ECG changes in trained athletes can be divided into two groups, common and training-related; uncommon and training unrelated. Common and training related ECG changes are sinus bradycardia, atrioventricular block and early repolarization. Uncommon and training unrelated changes includes ST-T repolarization changes, pathological Q waves, intraventricular conduction defects, ventricular pre-excitation, long and short QT interval⁷.

The prevalence of ECG changes among young Southeast Asian population was 7.0%. Most sports related ECG researches were done on endurance athletes such as long distance runners, basketball players, skiers etc. A few studies were conducted on football athletes measuring their heart rate by ECG changes. Therefore heart rate study by changes in ECG of football athletes is mostly unknown⁸. Football is a team sports and football players undergo similar kind of exercise during their training session and match play. Hence individual screening is necessary to determine heart rate accurately^{9,10}. Due to unavailability of sufficient published data the change among this parameter in Bangladeshi athletes is not precisely known. Furthermore, we need our standard baseline from which we can compare this parameter in our population. Therefore the present study was designed to observe the heart rate by analyzing ECG of male football athletes of Bangladesh.

MATERIALS & METHODS :

The research used cross-sectional study design, conducted by Department of Physiology, Dhaka Medical College on November 2013. Ethical permission was obtained from the ethical committee of DMC. Fifty (50) male football athletes (age limit 20 to 30 years) with experience of playing matches for more than 3years were considered as study group, and fifty (50) apparently healthy age matched men were enrolled as control group for comparison. After selection of the subjects, the purpose and procedure of the study were explained to each subject and informed written consent was taken. They were allowed to withdraw their participation in choice. Detailed family and medical history, and physical examinations were done before recruitment.

Data collection

Anthropometric measurements of the subjects were recorded in a pre-designed data collection form.

Height (meter): Standing height was measured using with soft non elastic measuring tape. The subject was positioned fully erect and measurement started from back of the head, thoracic spine along the trunk, buttocks and touched the heels by keeping the heels together. Height was recorded in meter.

Weight (kg): A standard weight measuring device was placed on a hard flat surface and checked for zero balance before measurement. The subjects were in the center of the platform wearing light cloths without shoes. Weight was recorded in kilogram.

Body mass index (BMI) kg/m²: BMI of each subject was calculated from the measured weight and height, using standard formula of BMI. $BMI = \text{Weight (kg)} / \text{Height (m)}^2$

Measurement of blood pressure

Blood pressure was recorded from right upper arm in sitting position, placing the calf at the level of the heart, using the standard sphygmomanometer by auscultator method. After 10 minutes of rest, a second reading was taken. Blood pressure was measured in mm Hg.

Study parameters : in Electrocardiogram : Heart rate , P wave, QRS duration, PR interval.

ECG recording was done by Bionet Cardiocare-2000(EKG-2000), from Seoul, Korea

Statistical analysis

All the parameters were expressed as Mean \pm SD (standard deviation). Comparison between the groups was done by unpaired Student's 't'

test. Pearson's correlation-coefficient (r) test was performed to compare relationship between study parameters. P value of < 0.05 was accepted as level of significance. Statistical analysis was performed by using SPSS Version 12.

RESULTS :

The mean (\pm SD) age of the study and control group were 22.76 ± 1.91 and 21.64 ± 1.29 years respectively. The mean (\pm SD) height of the study and control group was 1.69 ± 0.05 and 1.68 ± 0.06 meter respectively. The mean (\pm SD) resting SBP was 112.5 ± 7.43 mm of Hg in group A and 110.85 ± 9.56 mm of Hg in group B. And the mean (\pm SD) resting DBP was 71.4 ± 6.67 mm of Hg in group A and 71.3 ± 7.61 mm of Hg in group B. In this study, there was no significant difference in the mean SBP and DBP in two groups (Table 1).

The mean (\pm SD) BMI was 23.31 ± 32 kg/m² and 25.76 ± 3.29 kg/m² in group A and B respectively.

The mean heart rate was 75.56 ± 10.43 and 62.38 ± 10.81 in group A and B respectively and it was statistically significant ($P < 0.001$).

Among the total 50 study subjects, BMI ranging between 25-30 kg/m² was found in 44 (88.0%) subjects and BMI > 30 kg/m² was found in 6 (12.0%) subjects, heart rate < 60 beats/min was found in 24 (48.0%) subjects and heart rate > 60 beats/min was found in 26 (52.0%) subjects (Table 2).

Pearson's correlation coefficient (r) test was performed to compare relationship between BMI and different parameters. The test of significance was calculated and p value < 0.05 was accepted as level of significance. Heart rate showed positive correlation ($r = +0.113$) with BMI, which did not show statistically significant association.

Table I : General characteristics and parameters of respondents from both groups

Parameters	Healthy male subjects Group A (n=50)	Male football athletes Group B (n=50)
Age (years)	21.64 ± 1.29 (24.0-24.0)	22.76 ± 1.91 (20.0-27.0)
Height (m)	1.68 ± 0.06 (1.57- 1.87)	1.69 ± 0.05 (1.57-1.82)
Weight (kg)	54.80 ± 7.44 (35.0-72.0)	61.14 ± 8.81 (45.0-85.0)
SBP (mm of Hg)	112.50 ± 7.43 (90-120)	110.85 ± 9.56 (90-130)
DBP (mm of Hg)	71.40 ± 6.67 (60-80)	71.30 ± 7.61(60-90)
BMI (kg/m ²)	23.31 ± 32 (18.0-29.5)	25.76 ± 3.29 (21.22-34.69)
Heart rate (beats/min)	75.56 ± 10.4 (58.0-105.0)	62.38 ± 10.8 (44.0-88.0)

Table II : Distribution of parameters in study groups

Parameters	Group B (n = 50)	
	n	Percentage (%)
BMI	25-30kg/m ²	44 88.0
	>30kg/m ²	6 12.0
Heart rate	< 60 beats/min	24 48.0
	> 60 beats/min	26 52.0

DISCUSSION :

The present study was conducted to observe the heart rate by analyzing ECG, among male football athletes in Bangladesh. In this study, all the parameters of healthy male were within reference value and almost similar to the findings observed by the various investigators from different countries^{1,5,11-24}. The mean BMI was higher among cases than that of controls, and the result was statistically significant ($p < 0.001$). This finding supports other study results from different countries^{5,16}. The mean heart rate was found lower among athletes which was statistically significant ($p < 0.001$). This finding was in

agreement with many researchers of different countries^{1,5,10,17,18}.

This study reveals that, heart rate significantly decreased in male football athletes in comparison to healthy controls. In view of our results, and in agreement with earlier publications, we should consider that routine screening of athlete's will provide information regarding their physiologic adaptation to exercise. Electrocardiographic analysis only enables the detection of other potentially lethal conditions. Since physical exercise is considered as a healthy life style, we should ensure the safety practices by promoting prior screening requirements.

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Surgical Procedures and Post-operative Complications of Sigmoid Volvulus : A Study of 100 Cases in Bangladesh.

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ABSTRACT

BACKGROUND : Volvulus of Sigmoid colon is the most common causes of large gut obstruction in our country.

OBJECTIVE : The purpose of the present study was to evaluate surgical procedure and their post operative complications.

METHOD : This cross sectional study carried out at Dhaka Medical College Hospital and Shahabuddin Medical College Hospital from January 2005 to December 2010. All the patient presented with acute sigmoid volvulus was selected as study population. After admission, all patients were clinically evaluated by history and physical examination. Investigations especially plain X-ray abdomen was done in every case. Diagnoses were confirmed on Laparotomy.

RESULT : A total of 100 patients were included in this study. All were treated surgically, at Laparotomy the gut were found viable in 56% cases, doubtful in 13% cases and frank gangrene 31%. One stage operative procedure i.e. Primary resection and end to end anastomosis were performed in 56% cases. Among them 48 (86%) gut were viable, 4 (7%) were doubtfully viable and rest of 4 (7%) were frank gangrene. Between the two stage procedures, Hartmann's procedures were performed in 28% cases of which 2 (7%) were viable gut, 4(14%) were doubtfully viable and 22(79%) were frank gangrenous. On the other hand, resection and anastomosis with defunctioning loop colostomy procedures were performed in 16 %cases. Among them viable gut were 6(38%), doubtfully viable were 5(31%) and frank gangrene were 5 (31%) cases. The total numbers of patient having complications were 22 (22%). Some patients developed more than one complication. Among them post operative pyrexia developed in 10% cases, wound infection in 12 % cases, wound dehiscence in 7% cases, urinary tract complication in 7% cases. Other important complications were paralytic ileus (8%), electrolytes imbalance (8%), hypostatic pneumonia (6%), faecal fistula (3%), acute renal shout down (3%) and septicemia (3%). Among 100 patients 8 patients died post operatively in this study, of them 5 had gangrenous gut, 3 patients having non gangrenous.

CONCLUSION : It is evident from the study that post operative complications and death rate is more in gangrenous gut than non gangrenous gut.

KEY WORDS : Sigmoid volvulus, Surgical procedure, Post operative complications, Bangladesh.

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INTRODUCTION :

Volvulus is a special form of intestinal obstruction in which the axial rotation of the bowel occurs upon itself with subsequent occlusion of the intestinal lumen and eventual occlusion of the blood supply of the twisted segment, most commonly sigmoid colon. Twisting of the sigmoid colon resulting strangulation as well as luminal obstruction of the colon.¹The clinical picture is influenced by the rapidity of the twisting of the mesentery resulting in gangrene of the bowel.²

Acute sigmoid volvulus is a surgical emergency usually presenting with colicky central abdominal pain, distention, and absolute constipation. Gangrene, perforation and faecal peritonitis may occur if not managed properly in time³.

The treatment for sigmoid volvulus has evolved from attempt to untwist the bowel non-operatively as advocated by Hippocrate⁴ and his success or to primary operative detortion or to a combination of early non operative reduction followed by definitive surgical therapy. Various non-operative reduction of sigmoid volvulus rigid proctoscopy alone, enema alone, sigmoidoscopy and insertion of a flatus tube has been advocated ³, and various operative techniques⁵ are applied depending on local and general condition of the patient are :

- a. One stage operation :
Primary resection and end-to-end anastomosis.
- b. Two stage operation :
 - i. Hartman's procedure, with restoration of gut continuity after 6-8 weeks.
 - ii. Resection and anastomosis with defunctioning loop colostomy, followed by gut restoration after 6-8 weeks.

The main determination of patient's mortality is viability of the sigmoid colon. If the loop is non-viable it must be resected. If the loop is viable, it is still the best to resect, as recurrent Volvulus common and various means of colopexy are relatively unsuccessful.

Post operative complications after surgery are pyrexia, wound infection, wound dehiscence, urinary tract infection, paralytic ileus, electrolytes imbalance, hypostatic pneumonia, faecal fistula, acute renal shut down, and septicemia⁶.

MATERIALS & METHODS :

This was a cross sectional study which was conducted in the deferent surgery unit of Dhaka Medical College Hospital and Shahabuddin Medical College Hospital from January 2005 to December 2010 for a period of 5 years. All the patients presented with acute sigmoid volvulus was selected as study population .A detailed history specially pain, distention, constipation, nausea, vomiting were recorded with duration of each.

On examination special attention was paid to pulse, blood pressure, temperature, dehydration, shape of abdomen, visible peristalsis, abdominal tenderness, bowel sound, per rectal examination was done in all case.

A plain radiograph of abdomen in erect posture including both domes of diaphragm was taken in all case. Due to lack of facilities, special investigations like barium enema, serum electrolytes could not be done in a few numbers of cases.

In all cases the diagnosis was done on history, clinical examination and plain radiograph of abdomen.

Conservative treatment methods for acute sigmoid volvulus were not performed because recurrent Volvulus is common and various means of colopexy are relatively unsuccessful. All these 100 cases, diagnosis were confirmed by laparotomy after initial resuscitation of the patients. Hartmann's procedure, resection and anastomosis with defunctioning loop colostomy were taken into study

RESULTS :

Among the 100 cases, most of the cases were opened through left lower Para-median incision and some through lower midline incision. After Laparotomy, the gut was untwisted and viability of gut was checked. In case of viable intestine (56% cases), peritoneal fluid was minimum and color was straw. But in patients having gangrenous intestine (31% cases), the color of the peritoneal fluid was blood stained and fowls smelling. Other 13% cases were doubtful viable (Table I)

All these 100 cases treated surgically. Resection and anastomosis was mainly on those patients with viable gut 48 out of 56 cases (86%). Frankly gangrenous cases were mainly managed by Hartmann's procedure was done in 22 cases out of 31 cases (71%) (Table II).

The total numbers of patient having complications were 22 out of 100. Some patients developed more than one complication. Among them post operative pyrexia developed in 10% patients, wound infection in 12% patients, wound dehiscence in 7% patients, urinary tract complication in 7% patients. Other important complications were paralytic ileus (8%), electrolytes imbalance (8%), hypostatic pneumonia (6%), faecal fistula (3%), acute renal shut down (3%) and septicemia (3%). In this study 8% of

the total patient died during post operative period , out of them 5(63%) had gangrenous gut. 3(37%) patients had non gangrenous gut.(Table III)

Table I : Condition of gut at Laparotomy (n-100)

Condition of gut	No. of patient	Percentage (%)
Viable gut	56	56%
Doubtful viability	13	13%
Frank gangrene	31	31%

DISCUSSION :

Volvulus of sigmoid colon is the most common causes of large gut obstruction in our country. The incidence of sigmoid volvulus in our country is about 56.6 % of all acute large gut obstruction⁶. Major British Hospitals admit an average of one case in a year². In the USA, it accounts for 3-5 percent of all cases of intestinal obstruction⁷. In India the incidence is between 22.2% to 50% in different parts of the country.

This series comprises 100 patients with sigmoid Volvulus treated by emergency resection of sigmoid colon with primary anastomosis of the gut, Hartmann's procedure, resection and anastomosis with defunctioning loop colostomy. Certain data were collected from those cases and correlated with other studies.

Regarding treatment, since its description by Von Rokitansk, Sigmoid volvulus has been managed by a variety of treatments including spontaneous reduction, blind flatus tube decompression, proctoscopic, sigmoidoscopic and colonoscopic de-compression. After laparotomy, detorsion and fixation of sigmoid colon and resection of colon. Brunsgaard⁴ gave the opinion that all patients with sigmoid volvulus should be treated by resection and primary anastomosis.

Table II : Treatment modalities (n-100)

Treatment modalities	No. of patient (%)	Total %
A. One stage operation : Primary resection and end to end anastomosis		56 (56%)
- Viable gut	48(86%)	
- Doubtful viable	4(7%)	
- Frank gangrenous	4(7%)	
B. Two stage procedure :		
a. Hartmann's procedure		28 (28%)
- Viable gut	2(7%)	
- Doubtful viable	4(14%)	
- Frank gangrenous	22(79%)	
b. Resection and anastomosis with defunctioning loop colostomy.		16 (16%)
- Viable gut	6(38%)	
- Doubtful viable	5(31%)	
- Frank gangrenous	5(31%)	

Table III : Post Operative complication (n-100)

Complications	Gangrenous gut	Non Gangrenous gut	Doubtful viable	Total	Total %
Postoperative pyrexia	7	2	1	10	10%
Wound infection					
Minor	8	1	1	10	12%
Significant	2	0	0	2	
Wound dehiscence :					
Partial	3	1	1	5	7%
Complete	2	0	0	2	
Faecal Fistula	2	1	0	3	3%
Urinary tract infection	3	2	2	7	7%
Acute renal shut down	1	1	1	3	3%
Hypostatic Pneumonia	3	1	1	5	5%
Paralytic ileus	4	1	3	8	8%
Electrolytes imbalance	4	2	2	8	8%
Septicemia	1	1	1	3	3%
Death	5	3	0	8	8%

In our series, Emergency Laparotomy was carried out in all 100 cases. In most of the patients having viable gut resection and primary anastomosis was done. But in case of non viable gut most of them were treated by Hartmann's procedure, some of them by resection and anastomosis with defunctioning loop colostomy and few of them were treated by only resection and primary anastomosis. Though this approach looks not sound, the problem with patients of the "Volvulus belt" of India and Pakistan and also in our country is that they do not want any further operation if their symptoms are relived and they return to hospital only when there is a recurrence of volvulus. It is therefore, justified to have a definitive operation at the first instance. One has to choose between fixation of the colon and resection of the colon. Fixation itself may be associated with high rate of recurrence. To prevent recurrence, one has to carry out fixation of whole colon.

Laparotomy finding were more or less similar to that of others studies, and these correlated well with others studies^{9, 10, 11}, in our country. In our study we found 56% viable gut and 31% gangrenous gut. The viability of the rest 13% gut was doubtful.

On average, if recovered uneventfully after the operation, oral feeding was started on 4th/5th post operative day (POD), and drain was removed on the same day. Full diet started on 6th or 7th POD. Skin stitches were removed on 8th POD and most patients were discharged on the same day with advice of colostomy closure after 8-10 weeks in colostomy patients. This is the usual

postoperative event in uncomplicated patients in all most all others series.

Post operative complication in this study occurred on 1st POD and delayed up to 8th POD. Most complications occurred on 3rd POD to 6th POD. These complicated patients had long hospital stay in comparison to uncomplicated patients.

In the present series the overall complications were 22 cases out of 100. Some patients developed more than one complication. Among them post operative pyrexia developed in 10% patients, wound infection in 12% patients, wound dehiscence in 7% patients, urinary tract complication in 7% patients. Other important complications were paralytic ileus (8%), electrolytes imbalance (8%), hypostatic pneumonia (6%), faecal fistula (3%), acute renal shut down (3%) and septicemia (3%). Post operative complications were more or less similar to that of others studies and these correlated well with others studies^{9, 10, 11}, in our country.

In this Series, there was 8% mortality in post operative period, of them 5(63%) had gangrenous gut. 3(37%) patients having non gangrenous. Rahman⁶ reported 32.2% mortality among gangrenous patients and 13.6% in non gangrenous patient. Z. Haq¹¹ reported 14.3%% mortality among gangrenous and 13.6% in non gangrenous. Further reduction of postoperative complications in this series was not impossible, if the well-experienced surgeon would have done this sort of emergency surgery within desired time. In this study,

most of the surgery had been performed by assistant registrar, medical officer and registrars (trainee surgeon) of the surgical units of Dhaka Medical College Hospital. In a developing country like Bangladesh due to patients ignorance and negligence along with delay in referral from quack mal practicing leads to other grave complications in this case.

CONCLUSION :

Acute Sigmoid volvulus is a surgical emergency. Gangrene, perforation and faecal peritonitis may occur if not managed properly in time and lead to death of the patient. Early diagnosis and prompt laparotomy after initial resuscitation is very important before gut become gangrenous.

In this study, this is evident that, post operative complications and mortality is high in gangrenous gut than non gangrenous gut.

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Correlation between Pre-operative and Histopathological Diagnosis in Cases of Total Abdominal Hysterectomy

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ABSTRACT

BACKGROUND : Hysterectomy is the most commonly performed gynaecological surgery throughout the world as well as in our country. Many a times the clinical diagnosis does not correlate with histopathological findings.

OBJECTIVE : Aim of this study was to correlate the indication of abdominal hysterectomy with histopathological findings.

METHODS : This cross sectional study was conducted in department of obstetrics and gynaecology, Shaheed Suhrawardy Medical College and Hospital, during July 2011 to December 2011. One hundred sixteen patients undergoing total abdominal hysterectomy for gynaecological disease were studied. Surgical specimens were sent for histopathology and reports were analyzed and compared with the indications of surgery.

RESULTS : Commonest indication for hysterectomy was fibroid uterus in 44.08% followed by dysfunctional uterine bleeding (DUB) in 19% cases. Histopathological confirmation of preoperative diagnosis was 88.02% for fibroid , 94.07% for adenomyosis , 66.07%for pelvic inflammatory disease and 54.05%for DUB. An important portion of cases (18.02%) preoperatively diagnosed as DUB was found to have adenomyosis.

CONCLUSION : Histopathological analysis correlates well with the preoperative diagnosis. Histopathology is thus mandatory for ensuring diagnosis and thus management.

KEY WORDS : Clinical diagnosis, total abdominal hysterectomy (TAH), histopathology.

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INTRODUCTION :

Hysterectomy is the surgical removal of uterus with or without cervix, usually performed by a gynaecologist.^{1,2} When this is done through an abdominal incision, it is called abdominal hysterectomy.³ There are two types of hysterectomy performed through abdominal route – total and subtotal. Total hysterectomy involves removal of whole uterus including the cervix. This is the most common type of hysterectomy.³ In subtotal, vaginal part of cervix and a variable amount of supra vaginal cervix is preserved. Often one or both ovaries and fallopian tubes are removed at the same time of hysterectomy is done.³ Now a days, abdominal hysterectomy is one of the most common major surgical procedure in peri and post menopausal women performed after caesarean section.⁴ The rate of hysterectomy varies from 6.1 to 8.6 per 1000 women of all ages⁴. Approximately 75% of all hysterectomies are performed on women between ages 22 to 40yrs.⁴ This study has been performed to find out common indications of abdominal hysterectomy and to correlate the clinical presentation with histopathological findings. The diagnosis has been done mostly based on patients symptoms and clinical findings. In all cases ultrasonographic help has been taken. This study has included some of the common indications of TAH (total abdominal hysterectomy) for example : leiomyoma, DUB (dysfunctional uterine bleeding), PID (pelvic inflammatory disease), chronic cervicitis.⁵

Objectives of the study :

1. To correlate the pre-operative diagnosis with histopathological findings in cases of total abdominal hysterectomy.
2. To evaluate the clinical presentation of patient's schedule for hysterectomy.

MATERIALS & METHODS :

This is cross sectional, observational study performed in obstetrics and gynaecology department of Sheed Suhrawardy Medical College and Hospital, Sheer-e-Bangla Nagar, Dhaka, for a period of six months (July 2011–December 2011) and includes all the patients who were admitted for TAH.

Selection criteria: Inclusion criteria : Patients operated by total abdominal hysterectomy for benign Gynaecological diseases. Exclusion criteria: Patients operated by radical hysterectomy for invasive squamous cell carcinoma of cervix.

Study procedure :

Convenient sampling method was followed in this series.

1. At first permission was taken from director of SSH.
2. 116 cases were consecutively selected inpatient dept of obst and gynaec.
3. The patients, who were decided to undergo TAH for various reasons, were selected for the study.
4. A prescribed questionnaire sheet was used to record the information. The methods were explained to the patients and verbal as well as written consent was taken in a form.
5. Necessary physical examination of the patient was performed and pre-operative diagnosis was made.
6. Per-operative findings were noted and all the hysterectomy specimens were sent for histopathological examination.
7. Finally, a correlation was made between clinical diagnosis and final diagnosis on the basis of histopathological examination.

Variables :

1. Main outcome variable: Benign uterine pathology like fibroid, DUB, adenomyosis

- Confounding variable : Age of the patient, Occupation, Symptom, Menstrual period, Menstrual cycle, Clinical diagnosis, Ultrasonographic findings, Indication of the operation, Per operative findings , Histopathology report.

Data analysis :

After all necessary correction, the data was compiled and analyzed in the computer based software, the statistical package for social science (SPSS).

RESULTS :

In this study Fibroid uterus was found to be the major indication of Total abdominal hysterectomy, followed by Dysfunctional Uterine Bleeding (DUB), Pelvic Inflammatory Disease (PID), Ovarian Tumor, Adenomyosis and Endometriosis. The least common were Chronic cervicitis and Cervical polyp (Table I).

Table I : Indications of Total Abdominal Hysterectomy (N = 116)

<i>Indications</i>	<i>Number</i>	<i>Percentage (%)</i>
Fibroid	52	44.8
DUB	22	19.0
PID	13	11.2
Ovarian Tumor	11	9.5
Adenomyosis	9	7.8
Endometriosis	5	4.3
Chronic Cervicitis	2	1.7
Cervical Polyp	2	1.7

Table II : Common clinical presentation with their incidence in this series (N = 116)

<i>Clinical Presentation</i>	<i>No. of Patients</i>	<i>Percentage (%)</i>
Menorrhagia / Menstrual Disturbance	65	56.0
Dysmenorrhoea	34	29.3
lower Abdominal Pain	47	40.5
Vaginal Discharge	10	8.6
Backache	13	11.2
Irregular Per-vaginal Bleeding	10	8.6
Abdominal Lump	25	21.6
Dyspareunia	12	10.3
Post Coital Bleeding	1	0.9

Table III : Association of indication of Total abdominal hysterectomy with age of patients

<i>Indication of TAH</i>	<i>Number of patients</i>	<i>Age (year)</i>			
		36 – 40	41 – 45	46 – 50	51 – 55
		No (%)	No (%)	No (%)	No (%)
Fibroid	52	12 (23.1%)	28 (53.8%)	10 (19.2%)	2 (03.8%)
DUB	22	4 (18.2%)	11 (50.0%)	4 (18.2%)	3 (13.6%)
PID	13	2 (15.4%)	10 (76.9%)	1 (07.7%)	0 (00.0%)
Ovarian tumor	11	2 (18.2%)	3 (27.3%)	4 (36.4%)	2 (18.2%)
Adenomyosis	9	1 (11.1%)	6 (66.7%)	2 (22.2%)	0 00.0%)
Endometriosis	5	4 (80.0%)	1 (20.0%)	0 (00.0%)	0 00.0%)
Chronic cervicitis	2	1 (50.0%)	1 (50.0%)	0 (00.0%)	0 (00.0%)
Cervical polyp	2	0 (00.0%)	1 (50.0%)	1 (50.0%)	0 (00.0%)
		26	61	22	7

Table IV : Comparison between Pre-operative Diagnosis with Histopathological Report

Pre-operative		Histopathological Report		
Diagnosis	Number	Findings	Number	Percentage
Fibroid	52	Fibroid	45	86.5
		Adenomyosis	2	3.8
		Fibroid +Adenomyosis	1	1.9
		DUB	2	3.8
		Fibroid +Endometriosis	1	1.9
DUB	22	DUB	6	27.3
		Adenomyosis	2	9
		Adenomyosis with Chronic Cervicitis with Squamous Metaplasia	1	4.5
		Fibroid	1	4.5
		Endometriosis with Fibroid	1	4.5
PID	13	PID	8	61.5
		No significant pathology	2	15.4
		Fibroid with PID	1	7.7
		Adenomyosis with Chronic Cervicitis with Endometriosis	1	7.7
Ovarian Tumor	11	Dysgerminoma	1	9.1
		Serous Cyst Adenoma	2	18.2
		Benign Cystic Teratoma	1	9.1
		Mucinous ovarian Cyst	4	36.4
		Malignant ovarian Tumor	2	18.2
Adenomyosis	9	Adenomyosis	9	100
		DUB	1	11.1
Endometriosis	5	Endometriosis	3	60
		Adenomyosis +Endometriosis	2	40.0
		Fibroid +Adenomyosis	1	20.0
		PID	1	20.0
Chronic Cervicitis	2	Chronic Cervicitis	2	100.0
Cervical Polyp	2	Cervical Polyp	1	50.0
Endrometrial Polyp	3	Endrometrial Polyp	3	100.0

Table II shows that among 116 cases, Menorrhagia was main complain of about 65 (56.0%) patient's. Second most common presentation was lower Abdominal Pain of about 47 (29.3%) patients'. This was often but not always associated with Abdominal Lump. Vaginal Discharge, Dyspareunia and Irregular Per-vaginal Bleeding was not uncommon. Post Coital Bleeding was found only in one patient.

Majority of the patient's indications for hysterectomy fell within 41-45 year of age group like, Fibroid (28/52), DUB(22/11), PID(13/10), Adenomyosis (9/6), Ovarian tumour has more or less same age distribution. (Table III)

DISCUSSION :

Hysterectomy is one of the most common operations done in women with an expected life time prevalence of 10%.⁶ This study was performed to find the common indication, to correlate the clinical presentations with histopathological findings. The diagnosis was mostly based on patient's symptoms and clinical findings. In all cases ultrasonographic help was taken but USG findings did not correlate in all cases. Based on clinical diagnosis treatment plan was made , that was TAH with without preservation of ovaries. This study included some of the common indications of TAH for example: Fibroid, DUB, ovarian tumour, Adenomyosis, Endometriosis etc.

Most common symptom of this study population was menstrual disturbance especially Menorrhagia among 56.03%. Second and third common complaints were Lower abdominal pain in 40.52% and Dysmenorrhoea in 29.31%. 21.55% patients came with abdominal lump. Other symptoms

like dyspareunia, backache, and vaginal discharge, irregular per vaginal bleeding had more or less equal percentage distribution. Post coital bleeding was found only in one (0.86%) patient.

Among indications fibroid was the commonest (44.83%) ,some what similar results were reported by Shergill et al (34%)⁷ , Dewen F (34%)⁸ , Nahar L(35%)⁹ , Dicker RC¹⁰ (40.2%), Its incidence is 25.8% in saudia Arabia¹¹, 78% in USA ¹² , 48% in Nigeria¹²and 8% in Sweden¹⁴. Geographical and racial influences are thus apparent on the prevalence of fibroid. Within 52 of fibroid uterus majority (53.85%) were within 41-45yr age group, then second major (23.08) , fell under 36-40 yrs. In 22 DUB patient (50%), was between 41-45yr age and 22.78% found within 46-50 yrs. Dicker RC¹⁰ found 74% to have mean age of 35.8 yrs.

During pre-operative period Fibroid was found in 92.31% patient, adenomyosis 5.77%, DUB 15.08%, adenomyosis 5.77% cases but after histopathology fibroid was diagnosed accurately in 88.24% cases. More or less same result was found in Zeba D ¹⁵ which was 75.7% and 70% was found by Lee et all⁵. OF Remaining 11.76% , 3.92% were diagnosed as Adenomyosis ,3.92% DUB, 1.96% fibroid with Adenomyosis and 1.96% Fibroid with DUB.

50% patients were confirmed as DUB during operation but 54.55% were finally diagnosed in histopathology. Remaining 45.45% patients were diagnosed as different pathology like 2(18.18) had adenomyosis .Fibroid was found in 1 patient and Adenomyosis with fibroid was found in 1 patient. DUB was finally diagnosed about 65.38% in series of Nahar⁹, 66.66% in the series of Zeba D¹⁵, 39.13% in Begum F ¹⁶, 48% in the series of Lee et all⁵. In case of PID 84.62% were found as PID during operation but total predicted PID was confirmed in

66.67% cases. This is almost same as 66.6% by Zeba D.¹⁵

In case of ovarian tumour incidence was 9.48%. Per operative accuracy was 90.91% while remaining was found to be Endometriosis (9.09%). On histopathology, different types of Ovarian tumour were diagnosed. Incidence of Adenomyosis in this series is 7.76%. In this study pre operatively Adenomyosis was found in 88.89% patients. Total final diagnosis of Adenomyosis was 94.74%. The rest was diagnosed as DUB (5.26%).

In this series the incidence of Endometriosis was 4.31% and it was observed more in reproductive age between 36-40yrs. During operation 81% was diagnosed as endometriosis and rest 20% was found to be PID. Histopathological accuracy was only 42.86% due to mixed pathology like Endometriosis with adenomyosis in 28.57%. Fibroid with adenomyosis in 14.29% and PID was found in 14.29%. Hysterectomy for chronic cervicitis shows a wide variation in different studies. Steven C, White et al¹⁷ showed 1% only . While Dewan F⁸ showed 21%, Nahar L⁹ 8% and Ishrat¹⁸ 7%. In this study result is 1.72% which is similar to Begum F¹⁶ 1.33%. Large percentage of chronic cervicitis reveals poor reproductive health care in a country. Now a day in our country, incidence has been declined due to improved maternal care.

Only 2 (1.72%) of total population of our study had cervical polyp . Simple excision would have been adequate for this benign condition, but one of our patient was perimenopausal and another patient had persistent abnormal uterine bleeding after excision, so that treatment of choice was total abdominal hysterectomy.

CONCLUSION :

With advancement in medical and conservative surgical therapy of gynaecological condition the need for hysterectomy has declined. In spite of that, TAH still remains the widely used treatment modality in our country and even in developed countries. Study proved that pre operative clinical findings as important as histopathological findings. The ultimate diagnosis is based on histology, so every hysterectomy specimen should be subjected to histopathological examination.

Limitations of the study : small sample size, short study period, single centre study.

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Clinical Profile of Children Presented With Seizure in a Tertiary Care Hospital

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ABSTRACT :

BACKGROUND : Epilepsy is one of the most common chronic neurological disorder in children. Incidence is highest in children less than 3 years of age. Identification of the underlying seizure aetiology helps to identify appropriate treatment option and the prognosis for the children

OBJECTIVE : The study aims to evaluate the commonest types of and clinical characteristics of epilepsy, and pharmacological management in these patients.

METHOD : This retrospective study was conducted at shisu bikash kendro, shaheed suhrawardy medical college and hospital, Dhaka from January 2011 to December 2011 to explore clinical profile of early childhood epilepsy. Total 62 Children with two or more unprovoked seizure from 4 month to 12 years and 6 month of age were included in this study.

RESULT : Majority cases were in the age group of less than 5years (66%) with male predominance (63%). First issue was more affected (55%). Generalized tonic clonic seizures (52%) were the most common type of initial seizures. Majority cases were unprovoked seizure (37%) seizure with comorbidities were (76%) common clinical presentation. EEG was done in all patients. Among them were abnormal. (72%). In this study majority of cases in 28(45%) were treated with Phenobarbitone (PHB) as a first line drug followed by Valproate (VPA) in 19(31%).

CONCLUSION : Limited study has been conducted on early childhood epilepsy in Bangladesh. The result of this study might be helpful for further large scale study in the field of early childhood epilepsy.

KEY WORDS : Epilepsy, Seizure, Children

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INTRODUCTION :

Seizures are the most common paediatric neurological disorder. Four to ten percent of children suffer at least one episode of seizure in the first 16 years of life. The incidence is

highest in children less than 3 years of age, with a decreasing frequency in older children.¹ Seizures account for about 1% of all emergency department visits, and about 2% of visits of children's hospital emergency department visits.² The incidence of epilepsy

(recurrent unprovoked seizures) in children and adolescents seems relatively consistent across all populations studied, ranging from 50 to 100/100,000 person-years.³ In most of the studies, febrile seizures were reported to be the most common type seen in the paediatric population and account for the majority of seizures seen in children younger than 5 years of age.²⁻⁴

Central nervous system (CNS) infections are the main cause of seizures and acquired epilepsy in the developing world.^{4,5} Geographical variations determine the common causes in a particular region. Acute seizures are common in meningitis, viral encephalitis and neurocysticercosis and in most cases are associated with increased mortality and morbidity, including subsequent epilepsy.⁶⁻⁹ The standardized mortality rate (SMR) in patients with a newly diagnosed unprovoked seizure ranges from 2.5 to 4.1 according to the study population and design. The SMR is highest in the youngest patients and in those with symptomatic seizure.¹⁰ In most children with newly diagnosed epilepsy, the long-term prognosis of epilepsy is favorable, and in particular, patients with idiopathic etiology will eventually reach remission.¹¹

However, there is very little information on the types of epilepsy or on their clinical presentations and clinical outcomes. These are important for planning management and for developing wider services within the country.

Objective

This retrospective descriptive study was planned to address the commonest types of seizures, EEG and neuro-imaging studies results, and frequently used Antiepileptic drugs in patients presented to a tertiary care hospital.

MATERIALS & METHODS :

The study protocol was submitted to the Institutional Ethics Committee (I.E.C.) for approval and the study was conducted in shisu bikash kendro, shaheed suhrawardy medical college and hospital for a period of one year (January to December 2011).

The operational definition of epilepsy was used to select the patients.¹² Patients of both gender and age of less than 12 years were included in the study.

Patients excluded from the study were :

1. patient not willing to participate
2. patient with provoked seizures due to hypoglycemia, hyperglycemia & hypernatremia
3. patient presenting with provoked seizures and those with 1st seizure whose follow up did not show any subsequent seizures.

A detailed history regarding the epileptic attack was noted. Significant and relevant past history, personal history, and family history was asked.

The relevant investigations like, MRI, electroencephalogram (EEG) and computed automated tomography (CAT) scan was also included, if available. Seizures are classified according to ILAE, 1981 classification.

All the information collected was recorded in a pre-validated and pre-tested case record form. Data was analyzed for age, sex, socio-economic status, type of seizures, aetiology, co morbidity, findings of imaging modalities, and use of antiepileptic drugs.

Data was analyzed with SPSS. Simple descriptive statistical tests (Mean and Standard deviation) were used to describe the numerical values of the sample while qualitative data were presented by frequency distribution.

RESULTS :

Results of the 662 patients seen during this study period, 62 had epilepsy. Their ages ranged between 04 month to 12 years and 6 month. 41 (66%) of the study population were males and 21 (34%) were females. (Table I).

Table I : Socio-demographic profile of the study patients

		Number (%)
Age	≤ 5 years	41 (66 %)
	≥ 5 years	21 (34 %)
Sex	Male	39 (63 %)
	Female	23 (37 %)
Residence	Dhaka	33 (53 %)
	Other districts	29 (47 %)
Income (Taka/month)	≤ 5000	20 (32 %)
	5001 – 10000	28 (45 %)
	≥ 10001	14 (23 %)

The majority of patients had generalised tonic-clonic seizure (52%), followed by myoclonic 34% (Fig. 1).

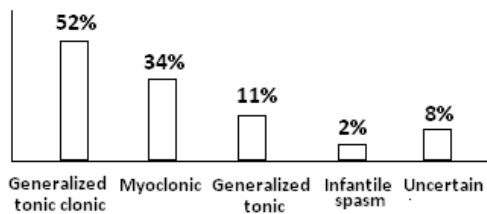


Fig. 1 : Types of Epilepsy

A total 76% of our patients had co-morbid medical or neurological disorders and 18% had speech, cognition and behavioral disorder (Figure 2).

provocating factors were fever 16%, sleep 11%, noise 11%.

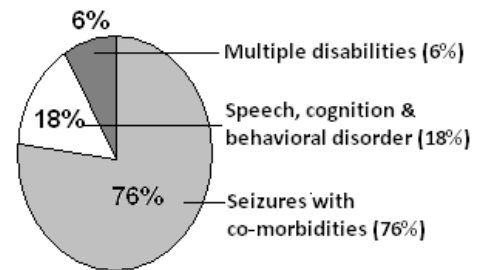


Fig. 2 : Clinical presentation

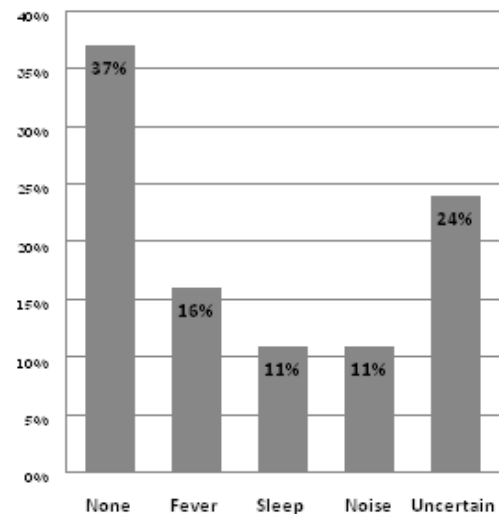


Fig. 3 : Epilepsy provoking factor

Fig. 3 shows that among all patients had true epilepsies, 37% was unprovoked. Seizure

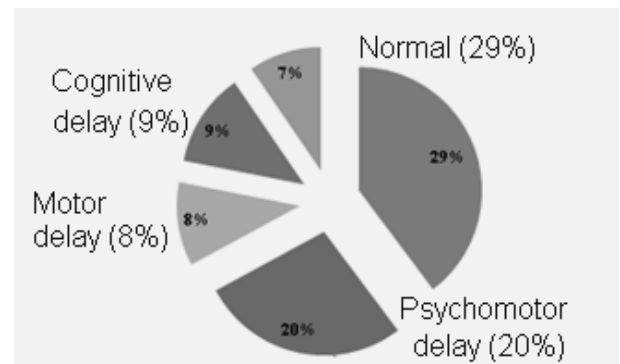


Fig. 4 : Early milestone of development

Table II : Correlation between EEG findings and clinical presentation

<i>EEG findings</i>	<i>Clinical presentation</i>			
	Seizure with comorbidities	Speech, communication, cognition & behavior disorder	Multiple disabilities	Total Number (%)
	Number (%)	Number (%)	Number (%)	
Normal	16 (35%)	0 (0%)	1 (25%)	17 (28%)
Epileptiform discharges with background abnormalities	19 (41%)	8 (73%)	2 (50%)	29 (48%)
Non-specific background abnormalities	12 (24%)	3 (27%)	1 (25%)	16 (26%)
Total	47 (100%)	11 (100%)	4 (100%)	62 (100%)

Early mile stone of development was normal in 29%, developmental motor delay was 8%, psychomotor delay 20% and 9% had cognitive delay. (Figure 4)

EEG data was available in 62 patients; 17 (28%) had normal records while 29 (48%) had epileptiform discharges. 16 (26%) patients had non- specific EEG changes. (Table II)

The most frequently used antiepileptic drug was phenobarbitone 45%, followed by valproic acid in 31%, carbamazepine in 16%, phenytoin 3%, (Table III).

Table III : Drug used in the treatment

<i>Name of the drug</i>	<i>Number</i>	<i>Frequency%</i>
Phenobarbitone	28	45
Carbamazepine	10	16
Valproic acid	19	31
Phenytoin	2	3
Nitrazepam	2	3
	62	100%

DISCUSSION :

Epilepsy is one of the causes for school drop-outs and decreased social development in children. This study was carried to refresh the data presented by other similar studies done in the paediatrics population in the past. Although this study was not carried out to comment upon the gender difference but more male patients had attended the hospital, 39 (63%) were males and 23 (37%) females. Similar studies in industrialized countries indicate that males are more frequently affected than females.¹³

Most of the patients had generalized tonic clonic seizure (52%). This is in agreement with studies from the Bangladesh which had found generalized seizures to be more common than partial seizure; it also matched about twenty other epidemiological studies on epilepsy from different parts of India which included both rural and urban studies.¹³⁻¹⁵ On contrary few studies reported partial seizures to be more common in children.¹⁶⁻¹⁸ 37% of our

patients had idiopathic epilepsy. Hypoxic ischaemic insult, CNS infection, cerebral palsy and space occupying lesions were the commonest causes for symptomatic epilepsy. Other studies also reported the most common aetiology as idiopathic.^{15,19,20}

Early childhood brain damage such as in cerebral palsy was recorded in some studies while others recorded congenital malformation of CNS to be the most common cause for symptomatic epilepsy.^{14,21} Studies in Brazil show perinatal brain damage as the most common cause along with other studies.^{22,23} Studies conducted in Uruguay along with other studies recorded family history to be the leading cause of symptomatic epilepsy.^{15,22} CNS infection was also considered the main cause in many studies.^{19,22,24} Other causes of epilepsy in children are moderate or severe head trauma, metabolic diseases and genetic diseases.^{21,22} Nine (9%) were diagnosed with mental retardation in our study. This is lower than Rantanen's study on children with epilepsy that reported that Cognitive function was mildly retarded in 22%, and moderately to severely retard in 28%.²⁵ Five of the mentally retarded patients were using polytherapy. Studies have indicated that valproate exerts little detrimental impact on cognitive function.²⁶ Studies have shown that carbamazepine has a cognitive profile that is worse than levetiracetam but better than phenytoin.^{27,28} Few studies reported that carbamazepine treated children performed worse than valproate treated children on memory tasks.²⁹ However another study reported that the cognitive profiles of valproate and carbamazepine were similar.³⁰ There is an overall view that antiepileptic drugs can compromise cognitive functioning. The risk of cognitive side effects increases with polytherapy.^{31,32}

Of the 62 EEG records, 17 (28%) had normal records, 16 (26%) had non-specific EEG changes while 29 (48%) had epileptiform discharges. These results are in agreement with other studies.¹⁷ The most frequently used antiepileptic drug was phenobarbitone, followed by valproic acid, carbamazepine, phenytoin and nitrazepam. This is in agreement with other studies.¹⁴ Almost all patients were compliant with medications.

There are a significant number of aetiological factors for epilepsy in developing countries, and many of them are preventable. Intracranial infections are of particular importance in this respect. Also some form of genetic counseling should be made available at least in areas where a specific hereditary predisposition to epilepsy has been established. The treatment and services provided in government funded Indian institutions for epilepsy has been found up to date and match the current standard of practice around the world. Early diagnosis of epilepsy and referral to the higher centers for management can improve the control of seizures and outcome in these patients.

CONCLUSION :

Epilepsy is the commonest neurological morbidity in our environment, limited facilities and resources in our environment still poses a major challenge in identifying the actual aetiology in most children with the disease. Effort should be intensified to reduce or completely eradicate the preventable causes of the disease.

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Perspectives on Peripheral Neuropathy As A Consequence of Metformin-Induced Vitamin B₁₂ Deficiency in T2DM

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ABSTRACT

Metformin mostly prescribed first line therapy in diabetes mellitus type 2 patients because it decreases morbidity and mortality. Vitamin B₁₂ is an essential micronutrient required for optimal hemopoetic, cardiovascular and neuro-cognitive function. Biochemical and clinical vitamin B₁₂ deficiency has been demonstrated to be highly prevalent among diabetes mellitus type 2 patients on metformin. It presents with diverse clinical manifestations ranging from impaired memory, dementia, delirium, and peripheral neuropathy, sub-acute combined degeneration of the spinal cord, megaloblastic anemia and pancytopenia. This review article offers a current perspective on vitamin B₁₂ deficiency due to metformin therapy; with an emphasis on vitamin B₁₂ supplementation in diabetes mellitus type 2 patients

KEY WORDS : Metformin , vitamin B₁₂ deficiency , Diabetes Mellitus Type 2 , Neuro-cognitive function.

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INTRODUCTION :

Metformin, a biguanide, is one of the commonly used oral hypoglycaemic agent¹. Metformin is the preferred drug among type 2 diabetes patients, particularly those with overweight and having normal kidney function². Various guidelines propose that in the absence of contraindications for metformin, it should be preferred drug with concurrent lifestyle modifications while initiating the therapy for type-2 DM²⁻⁴.

One of the risky side effects of biguanides is lactic acidosis which can be overcome with judicious use of metformin. Other side effects like abdominal distress and diarrhoea⁵ appear within first few days' of initiation of metformin but disappear after discontinuation of metformin therapy. However, malabsorption of vitamin B₁₂ may not be easily diagnosed without close attention. Various studies have reported that an average of 10-30 % of patients taking metformin for longer duration and at higher dosage have shown vitamin B₁₂ deficiency⁶.

Vitamin B₁₂ level should be done among patients with type2 diabetes, especially those taking metformin therapy for longer duration⁷. Clinical manifestations of vitamin B₁₂ deficiency include alteration in mental status, megaloblastic anemia and neurological damage^{7,10,11}. However, diabetic neuropathy can also present with symptoms such as paresthesias, numbness and tingling in hands and feet etc¹². These symptoms could give rise to confusion between diagnosis of peripheral neuropathy due to vitamin B₁₂ deficiency and diabetic peripheral neuropathy^{10,11}. The progression of neurological damage could be managed by early detection of vitamin B₁₂ deficiency and with appropriate B₁₂ supplementation¹³. However, this vitamin B₁₂ deficiency may lead to permanent neurological damage if it is misdiagnosed as diabetic neuropathy¹¹.

Long term effects of metformin on vitamin B₁₂ status

Metformin is a first-line medication used in the treatment of type2 diabetes but has also been shown in multiple studies to reduce serum B₁₂ levels in 10–30% of patients¹⁴.

All current evidence on vitamin B₁₂ deficiency in metformin treatment comes from short term studies. No long term, placebo controlled data on the effects of metformin on concentrations of vitamin B₁₂ in patients with type 2 diabetes have been reported. In addition, placebo controlled data on the effects of metformin on homocysteine concentrations in type 2 diabetes are sparse, and again no long term data are available.¹⁵

Vitamin B₁₂ or cobalamin is a water soluble vitamin that plays a very fundamental role in DNA synthesis, optimal haemopoiesis and neurological function. The clinical picture of

vitamin B₁₂ deficiency hence, is predominantly of features of haematological and neurocognitive dysfunction¹⁶.

Decrease in vitamin B₁₂ absorption and levels following metformin use typically starts as early as the 4th month. The proposed mechanisms to explain metformin induced vitamin B₁₂ deficiency among patients with T2DM include: alterations in small bowel motility which stimulates bacterial overgrowth and consequential vitamin B₁₂ deficiency, competitive inhibition or inactivation of vitamin B₁₂ absorption, alterations in intrinsic factor (IF) levels and interaction with the cubilin endocytic receptor. Metformin has also been shown to inhibit the calcium dependent absorption of the vitamin B₁₂-IF complex at the terminal ileum.¹⁶ The hydrophobic tail of biguanides such as metformin extends into the hydrocarbon core of membranes. The protonated biguanide group gives a positive charge to the surface of the membrane, which displaces divalent cations. Thus, the biguanides alter membrane potentials and affect their calcium-dependent functions. Metformin also has an effect on the cubilin, which may affect B₁₂-intrinsic factor complex absorption and result in the deficiency¹⁷.

Vitamin B₁₂ deficiency may have serious consequences such as megaloblastic anaemia, myelopathy and neuropathy, and subnormal cobalamin concentrations have been associated with dementia. Megaloblastic anaemia due to metformin associated vitamin B₁₂ deficiency has been reported, but it can be treated successfully with cyanocobalamin. Symptoms of B₁₂-related neuropathy can be misinterpreted as diabetes neuropathy¹⁸.

Metabolically significant vitamin B₁₂ deficiency hence will result in disruption of the methylation process and accumulation of intracellular and serum homocysteine. Hyper homocysteinemia has been shown to have

potentially toxic effects on neurons and the vascular endothelium. This reaction is also essential in the conversion of dietary folate (methyl tetrahydrofolate) to its active metabolic form, tetrahydrofolate. In another essential enzymatic pathway, vitamin B₁₂ act as a cofactor for the conversion of methylmalonyl coenzyme A (CoA) to succinyl-CoA. In the presence of vitamin B₁₂ deficiency, this conversion pathway is diminished and an increase in the serum methylmalonic acid (MMA) ensues. This is followed by defective fatty acid synthesis of the neuronal membranes¹⁹. Vitamin B₁₂ is also essential in the synthesis of monoamines or neurotransmitters like serotonin and dopamine.²⁰ Vitamin B₁₂ deficiency impairs this synthesis.

Vitamin B₁₂ deficiency may co-occur with diabetes. Although it is most classically associated with sub-acute combined degeneration, an exclusive peripheral neuropathy presentation can occur.²¹ Increased risk of vitamin B₁₂ deficiency associated with current dose and duration of metformin use, despite adjustment for many potential confounders. The risk factors identified have implications for planning screening or prevention strategies in metformin-treated patients²²

When to suspect vitamin B₁₂ deficiency

Vitamin B₁₂ deficiency should be suspected in all patients with unexplained anemia, unexplained neuropsychiatric symptoms, and/or gastrointestinal manifestations, including sore tongue, anorexia, and diarrhea. Special attention should be paid to patients at risk of developing vitamin B₁₂ deficiency. This includes mainly elderly people because of their high prevalence of atrophic gastritis, vegetarians and vegans, and patients with intestinal diseases. Other groups may be

considered at risk, including patients with autoimmune disorders such as Graves' disease, thyroiditis, and vitiligo as well as patients receiving proton pump inhibitors, histamine receptor antagonists, or biguanides for prolonged periods²³

Screening for Metformin Induced Vitamin B₁₂ Deficiency

Till date no published guidelines are there which recommends routine screening of vitamin B₁₂ deficiency in DM patients. However type 2 diabetic patients should be screened for vitamin B₁₂ deficiency prior to initiation of metformin and later annually among elderly patients especially those taking metformin for more than 4-5 years and at higher doses of more than 2g/day²⁴.

Serum vitamin B₁₂ level should be the preliminary screening step for diagnosis of vitamin B₁₂ deficiency among patients with type-2 DM. Concentrations <200 pg/ml are usually indicative of vitamin B₁₂ deficiency while concentrations >400 pg/ml substantiate absence of vitamin B₁₂ deficiency²⁵.

Measurement of serum MMA or homocysteine level should be considered among type-2 diabetic patients having borderline serum vitamin B₁₂ level of 200- 400 pg/ml and subtle haematological manifestations. Serum homocysteine and MMA concentrations of 5-15 µmol/l and <0.28 µmol/l are considered within the normal range respectively^{24, 26}.

Diagnosis of Metformin Induced Vitamin B₁₂ Deficiency

As metformin induced vitamin B₁₂ deficiency produces neuropathy which can be confused with diabetic neuropathy, careful history should be elicited for metformin dose and duration of therapy. Further as suggested in

screening, serum vitamin B₁₂ level or serum MMA/serum homocysteine level should be done to establish proper diagnosis of metformin induced vitamin B₁₂ deficiency.

Treatment of Vitamin B₁₂ Deficiency among Diabetic Patients

Dosing pattern of vitamin B₁₂ depends on cause of the deficiency and the severity of the disease. Vitamin B₁₂ should be given either by oral or parenteral route in case of deficiency²⁷. Both oral and parenteral formulations can produce comparable improvements in symptoms of vitamin B₁₂ deficiency regardless of its aetiology²⁸.

Vitamin B₁₂ can be supplemented in various forms like hydroxyl-cobalamin, methyl-cobalamin and cyano-cobalamin. However studies have shown that methyl-cobalamin is better retained in the body in comparison to its cyanide containing sibling, cyano-cobalamin. Data from available studies recommends doses of >100 µg/day of vitamin B₁₂ in alimentary causes and doses of 500–2000 µg/day in disorders resulting from malabsorption of vitamin B₁₂ for treatment and prophylaxis of vitamin B₁₂ deficiency. According to Cochrane Group review the efficacy of orally administered vitamin B₁₂ to treat deficiency with initial doses of 1-2mg daily, then weekly, is confirmed and is just as effective as parenteral administration. However, in severe neurological disorders parenteral administration of vitamin B₁₂ should be done for immediate effect²⁹.

Coexisting deficiency of folic acid should be treated with oral folic acid supplementation in doses of 5 mg daily for 1–4 months. Folic acid should be administered after vitamin B₁₂ supplementation only; otherwise it may result into progression of the associated neurological manifestations²⁷.

CONCLUSION :

It appears that vitamin B₁₂ deficiency occurs commonly among patients with type 2 diabetes taking metformin therapy for longer duration and at higher dosage. This emphasizes routine screening of vitamin B₁₂ level among type-2 DM, especially those consuming metformin for more than four to five years with average dose of more than 1g/day, even in the absence of hematological and neurological abnormalities.

However, considering increasing prevalence of diabetes and cost of laboratory investigation, it is uncertain that such monitoring will be possible in all diabetic patients. The amount of B₁₂ available in general multivitamins preparations seen in the market may not be enough to correct metformin induced vitamin B₁₂ deficiency among those with diabetes. Hence vitamin B₁₂ supplementation might be done in doses of >100 µg/ day in alimentary causes and doses of 500–2000 µg/day in disorders resulting from malabsorption for the treatment and prophylaxis of vitamin B₁₂ deficiency. Thus routine supplementation of vitamin B₁₂ given to patients on long-term high dose metformin therapy seems to be clinically more prudent and a cost-effective approach.

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Acute Appendicitis In A Patient With Dengue Fever: A Rare Case Report

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ABSTRACT

Abdominal pain with dengue fever (DF) can be a diagnostic challenge. Patients can also present with acute abdomen. We report a case of a young male patient presented with right iliac fossa pain and fever. The diagnosis of acute appendicitis (AA) was made on basis of clinical profile and raised inflammatory markers. Diagnosis of dengue fever was confirmed in post operative period by biochemical markers during evaluation of persistent fever. Unfortunately, this patient developed severe thrombocytopenia to a critical level that ultimately leads to wound site haematoma. We successfully manage this case by transfusion of several units of platelet concentrate, exploration & evacuation of haematoma with regular dressing. This is the case of simultaneous AA and DHF, which created a diagnostic and management dilemma.

KEY WORDS : Dengue Haemorrhagic Fever (DHF), Acute Appendicitis (AA), Thrombocytopenia

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INTRODUCTION :

Dengue Fever (DF) is caused by a mosquito born single stranded RNA flavivirus and is transmitted by the bite of infected female *Aedes aegypti* mosquito,¹ which may be asymptomatic or may lead to undifferentiated fever, dengue fever (DF) or dengue hemorrhagic fever (DHF) and dengue shock syndrome². The estimated annual occurrence

of dengue fever worldwide is 100 million cases of dengue fever with 250,000 cases of dengue hemorrhagic fever (DHF), and a mortality rate of 25,000 per year.^{3,4}

Dengue fever is a dynamic disease which usually progresses through 3 clinical phases. It begins with a febrile phase which lasts between 2-7 days. This is followed by the critical phase which occurs towards the end of the febrile phase or around defervescence

and is associated with an increase in capillary leakage and complications like shock, bleeding or organ dysfunction. After 24-48 hours of defervescence, the patient will enter into the recovery phase with reabsorption of extravascular fluid and recovery of leukopenia and thrombocytopenia. Abdominal pain in dengue fever can present as a diagnostic challenge. It has been reported that up to 77% of dengue fever patients have non-specific abdominal pain⁵.

DF may rarely present as apparent acute abdominal surgical emergency such as acute cholecystitis, acute pancreatitis, and acute appendicitis (AA). Published literature provides limited number of reports of acute abdominal problems mimicking DF.^{6,7,8} Acute appendicitis is a common condition which can get complicated with perforation, peri-appendicular abscess formation, peritonitis and rarely death⁹. We report the experience with a young male patient presented as having AA which was confirmed peri-operatively as well as histologically, who also had evidence of dengue hemorrhagic fever (DHF) during post-operative period. This is the case of simultaneous AA and DHF, which created a diagnostic and management dilemma.

CASE PRESENTATION :

A 19 years old male patient was admitted in surgery ward of Shahabuddin Medical College Hospital with pain in right lower abdomen for 3 days, fever for 2 days & vomiting for once but no urinary symptoms. He was febrile (102°F), had a regular pulse rate of 92 beats per min and was haemo-dynamically stable. There was no flushing of his body. There was evidence of localized peritonism of right iliac fossa with guarding and rebound tenderness. His Hb level was 12 gm/dl, white cell count was 7×10^6 /L with 85% neutrophil and 12 %

lymphocytes, platelet count was 160×10^9 /L. His urine analysis, X-Ray KUB region, CXR & S. Creatinine were normal. But USG of abdomen suggested appendicular abscess.

With clinical evidence of AA supported by Alvarado score of 7/10. Patient underwent open appendectomy. Surgical procedure was uncomplicated and the appendix was found inflamed. But there was no localized collection of pus. Post-operatively, He was given injectable ceftriaxone, metronidazole and pathedine for pain control. But patient developed fever 6 hours after surgery & the next morning. For evaluation of the causes of fever CBC and blood culture were sent. Report showed neutropenia with total WBC count was 2.4×10^6 /L with neutrophil 80% and lymphocyte 15% and thrombocytopenia with platelet count of 104×10^9 /L. Then advised for dengue NS1 antigen (ICT), which was positive. Blood culture (FAN method) showed no growth.

The patient was managed then by a combination of surgical and medical team. Intravenous antibiotic was continued with sips of water followed by liquid diet & IV infusion maintained. On 2nd POD his platelet count reduced to 95×10^9 /L. and patient was febrile. Patient became afebrile on 3rd POD with evidential rashes and reduced platelet count was 90×10^9 /L. On 4th POD oral antibiotic started with normal diet and the platelet count continued to reduce and it was 72×10^9 /L. The patient's platelet count dropped to 14×10^9 /L on 5th POD but no bleeding manifestation noted. Then 1 unit of platelet concentrate was transfused. Wound site haematoma developed on 6th POD but patient was haemodynamically stable and there was no sign of peritonism. Hb % was 10 gm/L & USG of abdomen suggested no intra abdominal collection. Another unit of platelet concentrate was transfused. Then platelet

count was raised to $25 \times 10^9/L$. Haematoma was explored and blood clot was evacuated. On 7th POD there was again collection of blood in wound site then one unit of platelet was transfused again. At that time platelet count was $50 \times 10^9/L$. Wound dressing was performed. On 8th and 9th POD his platelet count continued to raise $64 \times 10^9/L$ and $120 \times 10^9/L$ respectively. There was no new collection at operative site. Patient was discharged from the hospital with advice for regular dressing on 10th POD. The wound was healed by 2ndary intension. Histological evaluation confirmed AA with trans-mural neutrophilic infiltration of appendix.

DISCUSSION :

Although self limiting abdominal pain and manifestations like nausea and/or vomiting, diarrhea are seen in dengue infection, DF presenting as acute abdomen is rare. Published literature cumulatively reported 21 cases of DF presenting as AA, and six patients have undergone appendicectomy.^{6, 7,8} Microscopic evaluations of these specimens showed lymphocytic infiltration, lymphoid hyperplasia or normal microscopy. None of these patients had histological evidence of acute appendicitis and this patient have microscopic evidence of inflamed Appendix. Exact mechanism of acute abdomen in DF is not known. Diagnosis of AA and management decision making is mainly on clinical judgment. Clinical diagnosis of appendicitis is also supported by raised inflammatory markers. Alvarado provided a scoring system which counted elevated WCC and left shift in addition to clinical parameters, and most surgeons adapt this system.¹⁰ Despite the general expectation of elevated serum markers like raised WCC and CRP, there are reports of gangrenous appendicitis with normal serum markers.¹¹ In this case, we

performed open appendicectomy as USG report suggested appendicular abscess and this was a diagnostic dilemma.

This patient highlights the dilemma created by AA with DF on patient management for both surgical and medical teams. Suspicion of DF was delayed until persistence of fever after operation as patient had classical features of appendicitis and absent of localized collection of pus at surgery.

Unfortunately, this patient developed severe thrombocytopenia to a critical level that led to wound site haematoma. Management of this patient was very challenging to us. I have never experienced such clinical problem in my 18 years surgical practicing life and any report of such case in Bangladesh. We successfully manage this case by transfusion of several unit of platelet concentrate along with exploration & evacuation of haematoma with regular dressing. Previous cases of AA with DF which were surgically intervened, required substantial amount of blood/ blood product transfusion^{6,8}. It was unclear whether this patient had simultaneous appendicitis and dengue fever as two different presentations of dengue virus, or as a dual pathology. Previous authors, who have managed the cases of DF mimicking AA, have commented on the need to differentiate the disease early to avoid unnecessary surgical interventions.

CONCLUSION :

Dengue fever can present with non-specific abdominal pain as well as acute abdomen. As illustrated in our case above, dengue fever can occur concurrently with acute appendicitis. But DF mimicking AA, should be differentiated as early as possible to avoid unnecessary surgical interventions to prevent severe dengue hemorrhagic complication & even death.

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