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Editorial

- 02 Role of elevated heart rate in Ischemic heart disease
Ghose TC

Special Article

- 05 Intravenous iron sucrose complex therapy is an alternative to blood transfusion in iron deficiency anaemia in the pregnant women
Begum A

Original Articles

- 08 Echocardiographic evaluation of left ventricular function after receiving carvedilol for heart failure on rural human subjects
Alam N, Haque KMA, Khan MS
- 13 Screening of Cervical Cancer by VIA among women in Rajshahi Medical College Hospital
Yusuf N, Ali A, Nahar N, Chowdhury S
- 17 Paediatric neurology: A timely needed sub-speciality in Bangladesh
Wahed MA
- 18 Reproductive tract infections in a village area of Bangladesh
Khanam T

- 20 Patterns of Radiological Features of Sputum Smear Positive Pulmonary Tuberculosis
Islam M

Review Articles

- 22 A clinical study of premature rupture of membrane of gravid woman and its outcome
Akther S, Moosa AS, Khanam M

Case Report

- 28 Mesial Temporal Lobe Epilepsy (MTLE) Refractory Epilepsy in a 11 yrs old boy
Akter N

Launching of new products

Medi News

MSD News

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Editor's Choice

"The ORION" is dedicated to CME since 1998, conserving its quality, accuracy and adequacy in every way it goes. With Volume:14, Issue:1, No.37, The Orion accomplishes the choice of thousands readers nationally and in the international arena. In this issue we published one Special Article, five Original Articles, one Review Article and a Case Report through peer review. Adequate references, latest and breakthrough news of the Medical Science are also incorporated.

Editorial (p-02) of this issue "Role of elevated heart rate in Ischemic heart disease" establishes heart rate as an important prognostic factor in cardiovascular disease.

The special article (p-05) "Intravenous iron sucrose complex therapy is an alternative to blood transfusion in iron deficiency anemia in the pregnant women" - a study which was conducted among 100 Bangladeshi pregnant women proves that iron sucrose complex may be the ultimate alternative to blood transfusion in pregnancy with IDA. The article also confirms iron sucrose complex can be used for correction of deficit hemoglobin and restitution of iron stores with minimal side effects.

The first original article (p-08) "Echocardiographic evaluation of left ventricular function after receiving Carvedilol therapy for heart failure on rural human subjects" concludes that Carvedilol, a third generation, non-selective beta-blocker with vasodilatory effect improves left ventricular function in heart failure patients. Despite the common concept of beta blockers being contra-indicated in heart failure this article analyzes growing evidence that beta-blockers are of benefit in mild to moderate heart failure. This article also validates beta-blockers for combating arrhythmias due to adrenergic over drive in mild to moderate heart failure.

"Screening of Cervical Cancer by VIA among women in Rajshahi Medical College Hospital" - an original article (p-13) describes the sensitivity & specificity of VIA as a screening tool to consider whether the aided visual inspection could be used as an alternative modality to detect cervical cancerous & precancerous lesions. It suggests VIA can differentiate a normal cervix from a precancerous cervix with reasonable accuracy & can demarcate the site to be biopsied precisely than a blind biopsy of ectocervix.

Next original article of this issue (p-17) "Pediatric Neurology: A timely needed sub-speciality in Bangladesh" evaluates pediatric neurological diseases including acute bacterial meningitis, encephalitis, epilepsy, cerebral palsy are the major causes of childhood morbidity and mortality.

"Reproductive tract infections in a village area of Bangladesh", is the fourth original article of this issue (p-18), which is designed to assess the incidence of reproductive tract infection among the married women in the reproductive age group living in the rural area of Bangladesh. Prevalence of the symptoms of RTI among the village women in the reproductive age group was compared according to symptoms, age of the patients, literacy status, working status, socio-economic status, contraceptives user & non user.

"Pattern of radiological features of sputum smear positive pulmonary tuberculosis" - the last original article of this issue (p-20), is based on a retrospective study designed to analyze chest X-rays of 163 patients for evaluation of different combinations of shadow pattern of sputum smear positive cases of pulmonary tuberculosis.

The review article of this issue (p-22) "A clinical study of Premature rupture of membrane of gravid woman and its outcome" evaluates clinical profile and outcome of pregnancy with premature rupture membranes and to correlate with current thoughts and ideas. This review analyzes the magnitude of problems caused by PROM.

An eleven years old boy with Mesial Temporal Lobe Epilepsy (MTLE), has been presented in this issue as a case report (p-28). Histories, features, diagnosis with MRI findings were also discussed briefly in this part of the issue.

Every effort has been made to make this issue interesting and helpful to you. At the same time, we thank all our readers, contributors and reviewers for their continued supports.

Cheers to a new year and another chance for us to get it right.

DR. MD. SHAFIUR RAHMAN

Chief Editor

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Role of elevated heart rate in Ischemic Heart Disease

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Summary

Heart rate is a major determinant of myocardial oxygen consumption and myocardial perfusion in patients with ischemic heart disease. Large epidemiological studies have demonstrated that high resting heart rate is a strong predictor of total and cardiovascular mortality in the healthy population and in patients with hypertension, in patients with metabolic syndromes, in the elderly, and in patients with coronary artery disease. Resting heart rate is a strong predictor of cardiovascular morbidity and mortality, particularly in patients with unstable angina or acute myocardial infarction. So, heart rate is increasingly being considered as a prognostic factor in cardiovascular disease, and need to measure and control heart rate in all coronary patients is clear.

Introduction

Ischemic heart disease remains the leading cause of mortality and morbidity and continues to be a major burden on public health. Myocardial ischemia results from an excess of myocardial oxygen demand in comparison with available supply. Heart rate is a primary determinant of oxygen demand. Population studies have shown that accelerated resting heart rate is associated with increased all-cause and cardiovascular mortalities.¹⁻⁴ Moreover, there is increasing body of evidence that tachycardia is not merely an indicator of an increased mortality, but actually contributes to a worse prognosis. Several potential mechanisms may be involved in this process. It appears that all living creatures have a limited number of heartbeats in their lifetime.⁵ Interestingly it was noted that heart rate is inversely proportional to life expectancy and that a rapid heart rate is a risk factor for future hypertension, atherosclerosis, and cardiovascular morbidity and mortality.⁶⁻⁷

In patients with coronary artery disease, the relationship between heart rate and mortality is even more established. In a large published study⁸ conducted in patients with established or suspected coronary atherosclerosis, heart rate at rest was an independent factor predicting survival. In this group, increased heart rate not only induces ischemia but also predisposes to plaque rupture, and therefore, triggers acute coronary events, which are mostly responsible for mortality in patients with ischemic heart disease.

Background

The first study reporting an association between elevated heart rate values and cardiovascular disease dates back to more than 60 years, with the evidence that subjects with a resting tachycardia state were more prone to developing hypertension.⁹

Since, more than 40 epidemiological studies, including the Framingham study, have provided evidence that heart rate is independently associated with cardiovascular and all-cause mortality.^{1-3,10}

The association between heart rate and cardiovascular events is present at all ages and even in subjects older than 70 years,³ it takes place in patients with and without cardiovascular complications.^{3,8,10-12} It appears to be independent of other risk factors for the atherosclerotic disease and is consistent as the association between other "classic" risk factors and cardiovascular disease.

Elevated heart rate and ischemic heart disease

Heart rate together with the contractility and left ventricular loading conditions is a key determinant of myocardial oxygen consumption. Acceleration of heart rate by exercise or pacing is frequently used in clinical practice to induce myocardial ischemia, also in everyday life, it triggers most ischemic events.¹³⁻¹⁵ However, the association between heart rate and ischemia goes far beyond this simple mechanism.

The influence of accelerated heart rate on the development of atherosclerosis is known from animal experiments. Beere et al.¹⁶ Examined lesion size and maximum coronary stenosis in two groups of monkeys: one group with a sham procedure, the other group with sinus node ablation, both group received atherogenic diet, but severity of coronary lesions was much smaller in animals with low heart rate due to ablation. In man, a positive association between heart rate and development of atherosclerosis was found. In a group of young myocardial infarction survivors, coronary lesions were significantly more extensive in those with high heart rates.¹⁷ In addition, in the SHEP program (Systolic Hypertension in the Elderly Program)¹⁸ there was an apparent association between heart rate and atherosclerotic lesions in the carotid arteries. Accelerated atherogenesis resulting from increased heart rate may be due to mechanical and metabolic factors. Increased vascular wall stress may result in endothelial injury, with greater permeability of the endothelium and easier penetration of lipids into the vessel wall. High heart rate can also reflect the presence of increased sympathetic tone, which may additionally cause elevated blood pressure and metabolic abnormalities.

More interestingly- and also more convincingly - an increase in cardiovascular mortality associated with high resting heart rate was found in patients with known coronary artery disease. This was shown among patients having stable coronary artery disease, e.g. in the majority of the 24913 patients included in the CASS study⁸ and among patients having an ST-segment elevation myocardial infarction (STEMI).¹⁹ As shown in small angiographic studies, it is possible that an increase in shear stress due to high resting heart rate will increase plaque vulnerability and can cause plaque rupture.²⁰ Recently and more compellingly, a

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decrease in high resting heart rate in patients suffering from coronary heart disease has been found to lower cardiovascular mortality rates.²¹ Consequently, a high resting heart rate is a cardiovascular risk factor.

Tachycardia as an Independent Cardiovascular Risk Factor

The relationship between resting heart rate and cardiovascular risk has been demonstrated in a number of large-scale epidemiological studies,¹ the National Health and Nutrition Examination Survey (NHANES) I Follow-up Study,² and the Framingham Heart Study.³

Epidemiological studies suggest a linear relationship between HR and long-term cardiovascular events such that the risk increases with HR.^{3,8} In the Framingham heart study³ in patients free of cardiovascular disease, cardiovascular and coronary mortality increased progressively with resting HR. Similar results have been reported for patients with hypertension⁹ and those with known CAD. In an analysis of 579 patients surviving an acute MI, mean 24 h HR was a stronger predictor of all-cause mortality, cardiovascular mortality, and sudden death than left ventricular ejection fraction after a follow-up of 2 years.¹

These studies all reported a correlation between elevated resting heart rate and both cardiovascular and all-cause mortality. A recently published long-term follow-up study has provided us with strong confirmation that heart rate is an independent risk factor for all-cause and cardiovascular mortalities, using data from nearly 25000 patients who underwent coronary angiography for the presence of suspected or proven coronary artery disease (CAD).⁸ Patients with a resting heart rate between 77 and 82 bpm. had a significantly higher risk of all-cause mortality (hazard ratio, HR: 1.16; 95% confidence interval, CI: 1.04-1.28) than patients with heart rate <62 bpm. Moreover, the increased risk was observed independently of other cardiovascular risk factors (age, sex, presence of diabetes or hypertension, body mass index, ejection fraction, and treatment with B-blocker).

From the evidence accumulated so far, we know that a high resting heart rate is associated with an increase in cardiovascular and all-cause mortality in the general population, as well as in hypertensive patients, patients with diabetes mellitus, patients with stable coronary heart disease or those with STEMI. The CRUSADE study of Bangalore et al.²² increases our knowledge and extends this concept to patients suffering from a non-ST-segment elevation myocardial infarction (NSTEMI). They point towards 'good clinical sense' showing that heart rates at the extremes (<50 bpm and >100 bpm) are associated with a poor in-hospital outcome and that drug-lowering therapy to attain a resting heart rate of <70 bpm but >50 bpm will reduce patients mortality.

These epidemiological results are also supported by data from clinical trials. It has been reported that heart rate reduction improves survival after myocardial infarction²³ and reduces mortality in patients with congestive heart failure.²⁴

Heart rate acceleration can also increase the risk of an acute coronary syndrome. In a study involving patients with repeat coronary angiography, Heidland and Steauer²⁰ found

an association between plaque disruption and heart rate >80 b.p.m. In another study²⁵ conducted in a large group of patients with stable angina, heart rate, together with increasing age and male gender, was an independent predictor of new coronary events.

The results of several studies indicate that faster heart rates are associated with increased probability of sudden cardiac death.^{26, 27} Patients with tachycardia may be more prone to develop malignant ventricular arrhythmias simply because they have severe ischemia. However, other mechanisms may also play a role. For example, slow conduction observed in the diseased myocardium is more pronounced with shorter cycle length, which can promote re-entry.

Variation in heart rate can also affect the symptoms of CAD. For example, the symptom of chest pain in stable angina is often triggered by elevated heart rate due to physical or emotional stress, which then aggravates myocardial ischemia. An increase in heart rate also precedes episodes of asymptomatic or silent myocardial ischemia. Indeed, the efficacy of some ant-anginal drugs has been related to their efficacy in reducing heart rate.²⁸

Prognostic value of heart rate in patients with coronary artery disease

In the presence of an acute coronary syndrome, heart rate also proves useful as a prognostic factor. Heart rate on admission for acute myocardial infarction is predictive of both short- and long-term mortalities.^{19,29} This is true even after correction for the infarct size. In addition heart rate elevation may increase the extent of myocardial injury.

Resting heart rate has been shown to be associated with mortality in patients with hypertension as well as those with the metabolic syndrome.⁸ A high resting heart rate (> 83 bpm) was indeed a strong predictor of total and cardiovascular mortality (hazard ratios of 1.32 and 1.31, respectively). In addition, resting heart rate was a risk factor for time to cardiovascular re-hospitalizations.

Conclusion

In conclusion, elevation of heart rate can increase the risk of an acute coronary syndrome. In addition it may increase the extent of myocardial injury. Variation in heart rate can also affect the symptoms of CAD. Heart rate is an independent risk factor for all-cause and cardiovascular mortalities and elevated heart rates are associated with increased probability of sudden cardiac death.

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Intravenous iron sucrose complex therapy is an alternative to blood transfusion in iron deficiency anaemia in the pregnant women

Begum A¹

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Abstract

Objective

The aim of this study is to correct anaemia in pregnancy and avoid its complications and also avoid the blood transfusion reactions and transfusion transmissible infectious (TTIs) as per example HIV, HCB, HBV, Syphilis and Malaria.¹¹

As sufficient voluntary donors are not available still now and as anaemia in pregnancy occurs in middle and low socioeconomic group, relative people are not fit physically to donate blood randomly. A pregnant woman will loss blood during- delivery and puerperium and as a result anaemic woman will be facing jeopardy of blood transfusion and its related complications.³ So they must be in adequate Hb% in pregnancy to combat this situations.

Iron deficiency anaemia in pregnancy is prevalent world-wide. On an average 51% of pregnant women is anaemic.¹

Methods

A prospective study was conducted to see the effectiveness and side effect of I/V iron sucrose in pregnant anaemic mother attending the Private Chamber from February 2009 to the end of February 2010. I/V iron sucrose reduces the blood transfusion rates in pregnant women and improve the maternal and fetal outcome.²

Result

100 pregnant women treated with I/V iron sucrose. Women having pre-treatment Hb% ≤ 8 gm/dl were selected for I/V iron sucrose and treatment completed, when the Hb% was 11 g/dl. Metallic taste are the common transient side effects. Few number of patients did complain headache and joint pain.

Conclusion

I/V iron sucrose is an alternative to blood transfusion regarding effectiveness, side effect and consequent health hazards and also superior to oral iron and iron dextran. Most of the pregnant women can not tolerate oral iron due to gastric irritation, inflammatory bowl disease and pregnancy induced Nausia, vomiting and motility disorder with reflux esophagitis. This therapy is FDA approved pregnancy category B. Most of the women become pregnant with negative iron balance as well as come to Antenatal check-up too late or infrequently.⁴

Keywords

Pregnancy, Iron deficiency anaemia, Iron sucrose complex, alternative to blood transfusion.

Introduction

Anaemia is the commonest haematological disorder that may

occur in pregnancy and anaemia is responsible for 20% of maternal death in the third Wold countries.^{4,12} It is also associated with high perinatal mortality rate.¹⁵

The CDC (Centers for Disease Control & prevention) defines anaemia as a haemoglobin concentration of less than 11g/dl in the first or third trimester or haemoglobin concentration of less than 10.5g/dl in the 2nd trimester.^{3,4}

Anaemia is estimated to affect nearly 2/3rds of the pregnant women in developing countries.⁵

During the first half of pregnancy, iron requirements not to be increased significantly and iron absorbed from food approximately 1 g/dl is sufficient to cover the basal loss of 1 g/dl. However, in the 2nd half of pregnancy, iron requirement increases due to expansion of red blood cell mass and the rapid growth of the fetus. Increased numbers of red cells and greater haemoglobin mass require approximately 500g of iron in pregnant women. The iron needs for the fetus is average 300 mg.

Thus the additional amount of iron needed due to the pregnancy is approximately 800 mg. Data published by the food and nutrition board. The National Academy of Science shows that pregnancy increases a woman's iron requirements to approximately 3.5 mg/dl. This need outstrips the 1mg/dl of iron available from the normal diet and must be fulfilled by supplementation of at least 10 mg/dl of elemental iron (10% of which is absorbed).

Due to faulty dietetic habit, malabsorption syndrome, nausea, vomiting in pregnancy associated with helminthic infestation, 10% absorption rate of oral iron & some factor like phosphate, phytate & calcium interfere oral, iron absorption parenteral iron specially iron sucrose is safer alternative to oral iron as well as blood transfusion.

Over the past-years, various oral, intramuscular and intravenous preparations of the iron have been used for correction of IDA in pregnant patients.^{8,9,14} However, they are associated with significant side effects and it is not possible to achieve the target rise in Hb level in a limited time-period when patient is approaching the term. Iron Sucrose Complex (ISC) is a relatively new drug, which is being used intravenously for the correction of IDA.^{8,9} This drug has been able to raise the Hb to satisfactory level when used in severely anaemic iron deficiency pregnant women.¹⁵

The aim of this study was to assess the efficacy and tolerability of ISC in pregnant patients with IDA and avoid blood-transfusion & its hazards.

Materials and Methods

The study was designed as a prospective study. A total 100 pregnant women were selected in from February 2009 January 2010.

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Women with known hypersensitivity to iron preparation and anaemia not caused by iron deficiency and the first trimester of pregnancy are excluded.

Inclusion criteria included pregnant mother of 2nd and 3rd trimester with Hb% $\leq$ 8g/dl.

During the Antenatal check-up, booking investigations are done and women who have Hb% $\leq$ 8g/dl and intolerable/contraindicated of oral iron are treated by intravenous iron as infusion with the aim to correct the iron deficiency as well as to replenish the iron stores and avoid blood transfusion who have severe anaemia near term.²

The aim was to bring Hb level 11 gm/dl.

2amp of iron sucrose (200mg elemental iron) diluted with 200cc of 0.9% NaCl and infusion was given in private chamber, sometimes in clinic also in medical college hospital in following ways:

- First 15 minutes infusion was given 25d/minute
- The rest amount to be given 60d/minute (ldrop/second)

Formulate were used to calculate the iron requirement of the patient to fulfil the deficit as well as to replenish the iron stores and were calculated as follows:

A. Amount of iron deficit (Mg) = Body wt. (kg) $\times$ Hb deficit $\times$ 0.3 [Hb deficit = Hb target - Hb initial]

B. Amount of iron to replenish (Mg) = Body wt. (kg) $\times$ 10

C. Total iron deficit (Mg) = Amount of iron deficit + amount of iron to replenish stores.

200mg I/V iron results in an increase in haemoglobin which is equivalent to 1 unit of blood.

2 amp of iron sucrose was in every alternate day, depending upon the Hb level of the patient and haematological improvement was check-up after one week by estimation of Hb level and ISC should be given till the desire amount Hb%.

Result

A total 100 pregnant patients were selected in this study in their second and third trimester of pregnancy.

Presenting features includes feeling of extrusion, weakness, anorexia, indigestion, palpitation, dyspnoea, giddiness and swelling of the legs, glossitis and stomatitis with lower Hb% [$\leq$ 8gm/dl].

Table-I
Age distribution of patients (n=100)

Age group (years)	No. of Patients	Percentage
13-20	50	50%
21-28	20	20%
29-36	30	30%

Table I shows the age distribution of the patient. Maximum patients were in the age group 13-20 i.e. teenage pregnancy

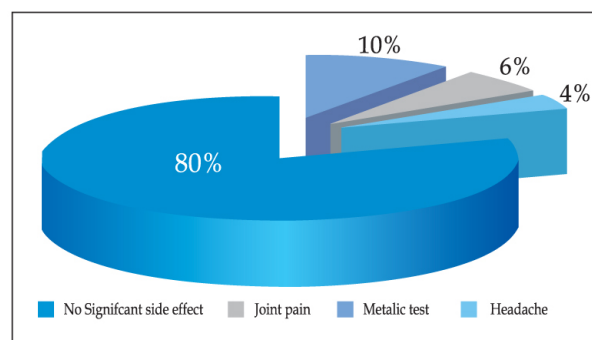
Table-II
Severity of anaemia (n=100)

Severity	No. of Patients	Percentage
Moderate	80	within 2 wks
Severe	20	within 2 wks

Table II shows the effectiveness of IV iron sucrose in anaemic patient

Following IV iron sucrose, symptomatic response occurs within 2 weeks but haematological improvement occurs after 1 week.

Among the 100 patients. 6 patients complained joint pain, 10 patients complained metallic taste, 4 patients complained headache, 80 patients did not complain anything.



Pie chart-I: Side effect (n=100)

Discussion

The fetus and placenta require about 500mg of iron and a similar amount is needed for red cell increment. An average post-partum blood loss and lactation for six months each accounts for about 180mg. From total of 1360mg, 350mg may be subtracted (saved as a result of amenorrhoea) to give an actual extra demand for about 1000 mg. This is unlikely to be provided by dietary iron.

Our study showed that iron sucrose complex can be used in the pregnant patients with iron deficiency anaemia not only for correction of deficit in the haemoglobin but also for restitution of iron stores. Our aim is to maintain the Hb% upto 11 g/dl. Hb% should be estimated 1 wk after treatment in moderate and severe anaemic patient.

The mean duration of the period to achieve the target Hb in the present study was five weeks.

Treatment of IDA has included oral iron, intramuscular iron, iron dextran ISC, recombinant erythropoietin and blood transfusion.⁶ However, most of these have their disadvantages.

Even patients who respond well to oral iron therapy require a long time (months) to reach target Hb compared with weeks required in case of treatment with ISC.

The use of intramuscular iron preparation in IDA is discouraged because of pain, irregular absorption and staining. Blood transfusion also causes life threatening transfusion reaction and more chance of TTIs because of lack of proper screening facilities outside the hospital and most of the blood is purchased indirectly by professional donor, (because professional donors are not allowed to donate blood

as per Bangladesh Gazette on Blood Transfusion produced by the Govt.) who are the carrier of transfusion transmissible diseases with poor Hb%.

Side effects were limited in the present study because the total dose of ISC was administered at intervals and it was given in diluted form and slowly.

In my study, out of 100 patient, 80 percent have vaginal delivery and labour was monitored by partograph and 3rd stage of labour were managed by actively. Bleeding was average. 20 patients needed caesarean section due to malpresentation, prolonged labour and fetal distress.

In our observation- if the Hb% is adequate there is less chance of prolong labor, post partum haemorrhage because anaemic patient develops uterine inertia.

The fetal outcome is also good. All the babies are healthy. Apgar score within 7-10 and weight of the baby were 2.5 - 3.5 Kg.

Anaemic mother develop IUGR, IUD due to anoxaemia, preterm labour. In 2000 paper of UK Midwifery archives showed that optimum Hb level prevents low birth weight and preterm delivery.

If anaemia are not properly treated mild anaemia become moderate one, and if it is untreated it become severe one & presents lots of complication like PPH which increases the maternal mortality and increases the chance of blood transfusion & increases the hazards of blood transfusion.

Conclusion

This study showed significant improvement of Hb and iron stores in pregnant women given calculated dose of ISC infusion. It was safe and well tolerated. In our country with frequent IDA found in pregnancy, this type of treatment may be helpful in management of the patient and decreases the incidence of blood transfusion and its hazards like HIV, HBV, HCV, Syphilis, Malaria transmission.

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Echocardiographic evaluation of left ventricular function after receiving carvedilol for heart failure on rural human subjects

Alam N¹, Haque KMA², Khan MS³

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Abstract

This is a prospective, community based, single blind, monocentric, case control study performed in a community based health care centre, Chatkhil, Noakhali, for the period from July 01, 2006 to December 31, 2008. The prime objective of this study was to evaluate the efficacy of carvedilol on left ventricular function in heart failure patients associated with hypertension or IHD. Total 500 human subjects were included in the study. Age limit was 20-80 years. Both genders were included. Patients were evaluated clinically followed by X-ray, ECG & Echocardiography. Carvedilol therapy (6.25-12.5 mg daily) was given with other medications followed by echocardiography of LV function in every 3 months interval, and finally at the end of 12 months. LV-EF was measured very accurately. Among 500 subjects, male 356 (71.20%), female 144 (28.80%). 50-59 years age group was affected much (141 cases, 28.20%). Second affected group is 60-69 years (106 cases, 21.20%). Service holders & businessmen were affected much. Normal LV-EF was observed in 22 cases (8.80%) in group-A (non-carvedilol group) & 21 cases (8.40%) in group-B (Carvedilol group). After treatment this finding was raised to 57 (22.80%) & 68 (27.20%) among group A & B. The difference in improvement (4.40%) is due to carvedilol therapy. So it is concluded that carvedilol, a third generation, non-selective beta-blocker with vasodilatory effect improves left ventricular function in heart failure patients.

Key words

Carvedilol, LV function, Echocardiography, heart failure.

Introduction

Heart failure (HF) is a clinical syndrome characterized by any structural or functional cardiac disorder that impairs the ability of the ventricle to fill with or eject blood¹. Pathophysiologically HF is characterized by abnormalities in cardiac mechanic and electric function and in neurohormonal regulation of fluid and electrolytes and may be the common result of a variety of causes.^{2,3}

Severe risk factors for development of HF have been well documented, in particular coronary artery disease and hypertension. HF is a significant public health problem in the United States. Currently, 4.9 million people in the United States are affected, 550,000 new cases are diagnosed each year.³ Clinically this syndrome is characterized by dyspnoea,

fatigue and fluid retention, although the spectrum of clinical manifestations varies widely and is influenced by many factors.⁴

Initial laboratory evaluation of the patient with HF includes ECG, blood chemistry, assessment of ventricular function & CXR.⁵ The ECG may reveal myocardial infarction, ventricular hypertrophy, atrial enlargement, conduction disturbances or arrhythmias. Ventricular function can be assessed by Echocardiography by measuring chamber dimension, wall thickness ejection fraction (EF), fractional shortening (FS), cardiac output & LV mass index.⁶

Two categories of drugs are commonly used in the management of patients with heart failure: diuretics and vasodilators. Other drugs that may have a role in particular patients include beta-blockers, digoxin & anti-arrhythmic agents.⁷

Recent meta-analysis have suggested that beta-blocker therapy for HF reduces all cause of mortality-cardiovascular mortality & mortality as a result of pump failure and sudden death by roughly 31% to 39%.⁸

Benefits have been shown with both beta-1 selective agents (metoprolol, bisoprolol) and non-selective beta 1&2 agents (carvedilol); but not agents with sympathomimetic activity (bucindolol, xamoterol). Carvedilol causes vasodilatation through blockade of alpha-adrenergic receptors and it also possess anti oxidant properties.^{9,10}

Aims & Objectives

The objectives were-

1. To study the efficacy of carvedilol on left ventricular function in hypertensive heart failure (HHF).
2. To study the efficacy of carvedilol on left ventricular function in ischaemic heart failure (IHF).
3. Echocardiographic evaluation of LV function before & after carvedilol therapy in HHF & IHF.
4. Finally to observe any side effects of carvedilol therapy used in HHF & IHF.

Materials and Methods

It is a prospective, community based, single blind, monocentric, clinical study performed in a community based health care centre, Chatkhil, Noakhali for the period from July 01, 2006 to December 31, 2008. A big geographical area of Noakhali district i.e. Chatkhil, Sonaimuri, Begumgonj and part of Laxmipur & Comilla districts were fairly covered in this study. Patients of hypertension & ischaemic heart disease associated with failure were selected for the study. Clinically selected patients were evaluated by ECG, X-ray & Echocardiography.

One group of patients (Group-A) were treated with conventional anti-failure therapy i.e., diuretics, ACE

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inhibitors, ARBs, nitrates, low dose digoxin. Then they were evaluated by echocardiography at 2-3 months interval for assessment of LV function.

Another group of patients (Group-B) received carvedilol 6.25 - 12.5 mg daily together with diuretics, ACEI/ ARBs, nitrates, plus low dose digoxin. They were also evaluated for LV function.

Group-A (without Carvedilol)	Group-B (with Carvedilol)
Diuretics	Diuretics
Anti-hypertensives/ Anti-ischaemic agents (ACEI/ ARBs)	Anti-hypertensives/ Anti-ischaemic agents (ACEI/ ARBs)
Low dose digoxin (if indicated)	Low dose digoxin (unless contraindicated)
	Carvedilol (6.25- 12.5mg daily)

ECG was done by FUKUDA DENSHI FX 7102 equipment & echocardiography by ALOKA SSD-1100 model, LV-EF was measured using echo-POMBO formula.

Results

Data were collected through prescribed proforma & presented below in tabulated forms.

Table-1. Gender distribution of patients (n=500)

Gender	Number	Percent
Male	356	71.20
Female	144	28.80

Table-2. Age distribution of patients (n=500)

Age in years	Number	Percent
20-29	09	1.80
30-39	47	9.40
40-49	98	19.60
50-59	141	28.20
60-69	106	21.20
70-79	99	19.80

Table-3. Occupation of patients (n=500)

Occupation	Number	Percent
Farmer	04	0.80
Day Labourers	33	6.60
Service holders	132	26.40
Fishermen	35	7.00
Teachers	98	19.60
Beggars	03	0.60
Businessmen	130	26.00
House wives	61	12.20
Others	04	0.80

Table-4. Causes of left heart failure

Causes	Group-A (n=250)		Group-B (n=250)	
	Number	Percent	Number	Percent
HHF	145	58	140	56
IHF	105	42	110	44
HHF= Hypertensive heart failure				
IHF= Ischaemic heart failure				

Table-5. Clinical features of LHF (n=500)

Clinical Feature	Number	Percent
A. Shortness of breath (SOB)	211	42.20
B. Exertional dyspnoea (ED)	134	26.80
C. Orthopnea (O)	98	19.60
D. PND (Paroxysmal nocturnal dyspnoea)	74	14.80
E. Acute pulmonary oedema (APO)	81	16.20

Table-6. Physical signs of LVF (n=500)

Physical signs	Number	Percent
1. Pulmonary crepitations	435	87.00
2. S ₃ heart sound	101	20.20
3. Pleural effusion	205	41.00
4. Pulsus alternans	177	35.40

Table-7. Types of LV dysfunction

Nature	Group-A (n=250)		Group-B (n=250)	
	Number	Percent	Number	Percent
Systolic	174	69.60	169	67.60
Diastolic	76	30.40	81	32.40

Table-8. Pattern of LV diastolic dysfunction (n=157)

Pattern	Echo findings	Number	Percent
1. Slow relaxation type	E<A	99	63.05
2. Restrictive type	very tall E small A	58	36.94

M-mode echocardiography at MV level, motion of AML during normal diastole has a characteristic M-shape (E-A pattern). Normally E>A, E:A ratio is >1, In LV diastolic dysfunction A>E; E:A ratio is < 1, The deceleration time of E wave is prolonged (>220 msec). When E is very tall & A is very small-that is restrictive type of LV diastolic dysfunction (D.T.is <150 msec)

Some important echo-indices for determining LV systolic dysfunction.

LV Wall thickness

IVST : 7-11 mm

PWT :7-11 mm

Reduced systolic thickening of LV walls indicate presence of LV systolic dysfunction either global (cardiomyopathy) or regional (myocardial infarction).

LV Chamber dimension

LV EDD: 40-55mm

LVESD: 20-40mm

LVEDV: 85±15ml

LVESV: 35±5ml

LV Ejection Fraction (LV-EF)

Normal range: 60-75%

Percent - change in LV volume between systole & diastole

$$EF = \frac{LVEDV - LVESV}{LVEDV} \times 100\%$$

Reduced LV-EF is an indicator of LV Systolic Dysfunction

LV Ejection Fractional Shortening (LV-FS)

Normal range: 30-45%

Percent - change in LV internal dimension between systole & diastole

$$FS = \frac{LVEDD - LVESD}{LVEDD} \times 100\%$$

Reduced FS is an indicator of LV Systolic dysfunction.

CO (Cardiac Output)=SV x HR

SV (stroke volume)= LVEDV-LVESV

Example, SV= 50 ml, HR=70 BPM

$$CO = 50 \times 70 = 3500 \text{ ml/min}$$

$$= 3.5 \text{ L/min/m}^2 \text{ BSA}$$

Normal range- SV=32-48 ml/beat

$$CO = 2.8 - 4.2 \text{ L/min/m}^2 \text{ BSA}$$

Doppler calculation

$$CO = SV \times HR = (CSA \times FVI \times HR)$$

$$= (\pi r^2 \times FVI) \times HR = \left\{ \frac{22}{7} \times \left(\frac{D}{2} \right)^2 \right\} \times FVI \times HR$$

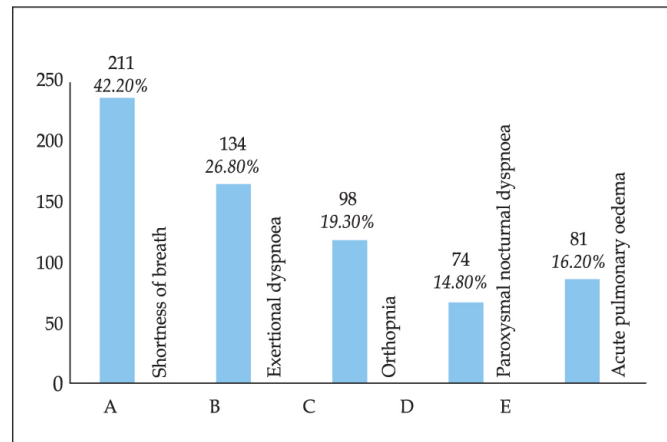
$$= 3.14 \times \frac{D^2}{4} \times FVI \times HR$$

$$= 0.785 D^2 \times FVI \times HR$$

D = Diameter of aortic annulus

FVI = Flow Velocity Integral

Reduced cardiac output indicates LV systolic dysfunction.



Graph-1. Clinical features of left heart failure

Table-9

Echo evaluation of LV-EF before treatment

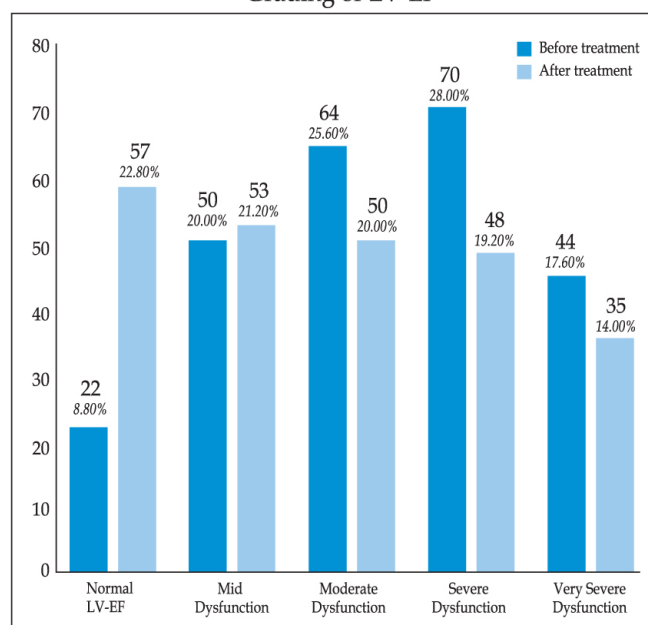
LV-EF	Group-A (n=250)		Group-B (n=250)	
Gradings	Number	Percent	Number	Percent
Normal (60-75%)	22	8.80	21	8.40
Mild dysfunction (50-59%)	50	20.00	51	20.40
Moderate dysfunction (50-59%)	64	25.60	63	25.20
Severe dysfunction (30-39%)	70	28.00	72	28.80
Very Severe dysfunction (<30%)	44	17.60	43	17.20
Drop out	00		00	

Table-10

Echo evaluation of LV-EF after treatment

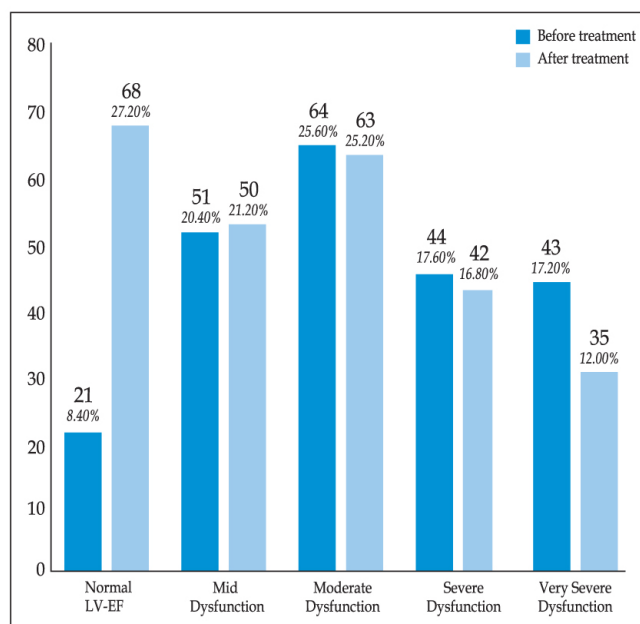
LV-EF	Group A (n=250)		Group B (n=250)	
	Number	Percent	Number	Percent
Normal (60-75%)	57	22.88	68	27.20
Mild dysfunction (50-59%)	53	21.20	64	25.60
Moderate dysfunction (50-59%)	50	20.00	44	17.60
Severe dysfunction (30-39%)	48	19.20	42	16.80
Very Severe dysfunction (<30%)	35	14.00	30	12.00
Drop out	7	2.80	2	0.80

Group-A
Grading of LV-EF



Graph-2: LV-EF in Group-A, before & after treatment

Group-B
Grading of LV-EF



Graph-3: LV-EF in Group-B, before & after treatment

Table-11

Comparative study between Group-A & B

Group-A(Non-Carvedilol Group): Improved patients
=35+3+14+22+9=83

Group-B (Carvedilol Group): Improved cases=47+13+19+30+13=122

Treatment group	Improved	Not Improved
Group-A	83	167
Group-B	122*	128
Using chi-square test, $\chi^2=12.54$; $p<0.001$, highly significant		

Discussion

Earlier trials with smaller study populations yielded mixed results, generally indicating improved functional status or improved LV dimensions, but no significant mortality benefit.¹¹ Several larger trials have subsequently demonstrated a significant mortality benefit with beta blocker therapy.¹²

Table-1 showed gender distribution of patients where male 356 (71.20%) & female 144 (28.80%) cases.

Table-2 Showed maximum affected age group is 50-59 years 141 (28.20%) cases. Second affected group is 60-69 years; 106 (21.20%) cases. Their findings are consistent with those of Zinangu and Kunars in Scandanavia population in 2006, where male 72.11%, female 27.89% with maximum affected age group in 50-59 years; 29.77%.¹³

Occupation of patients was illustrated in Table-3. Maximum incidence was observed in service holders 132 (26.40%) cases & businessmen 130 (26.00%) cases. Other researchers also

observed the same phenomena in white as well as black races.¹⁴

Table-4. illustrated the common cases of heart failure in Bangladeshi perspective where systemic hypertension had headed the list 285 (57%) cases. Second important killer is myocardial infarction 215 (43%) cases. Clinical features of left heart failure were tabulated in Table-5 & 6. Our research subjects were of variable clinical features. Hypertension & Coronary heart disease - two major cardiovascular events leading to heart failure were observed in various European study group.¹⁵

Table-7 narrated the types of LV-dysfunction was observed in 343 (68.50%) cases & diastolic dysfunction in 157 (31.40%) cases. Among diastolic dysfunction slow relaxation pattern 99 (63.05%) cases & restrictive pattern 58 (36.94 %) cases.

Echocardiography was performed very carefully on Group-A & Group-B patients before and after treatment. Left ventricular ejection fraction in two study groups was shown in Table-9 & 10. Findings were also shown using bar diagrams in graph 2 & 3. Before treatment no significant change was observed in two study groups. Normal LV-EF was found in 22 (8.80%) cases & 21 (8.40%) cases among group A & B respectively. After treatment this finding was raised to 57 (22.80%) & 68 (27.20%) among group-A & B. The difference (4.40%) between 22.80% and 27.20% is due to Carvedilol therapy.

Considering the whole study population (Table-10), overall improvement was seen in 122 cases in Carvedilol group, in 83 cases in non-carvedilol group, for which $p < 0.001$, which is highly significant. Among 1094 patients with chronic mild, moderate or severe HF, those randomized to the nonselective betablocker Carvedilol had a marked decrease in mortality over 6 to 12 months of follow up 3.2% vs 7.8%, $P < 0.001$, and a reduced risk of hospitalization for cardiovascular causes (19.6 vs 14.1%, $P = 0.036$).¹⁶

Other studies have demonstrated that among patients with HF who could tolerate initiation of the medication, Carvedilol produced a dose-dependant improvement in LV ejection fraction, mortality and hospitalization rate.¹⁷

Beta-blockade with Carvedilol has even been shown to reduce HF mortality to euvolemic patients with severe, NYHA class IV HF, & to reduce mortality for patients with LV dysfunction after myocardial infarction.¹⁸

Conclusion

Superficially one might anticipate that betablockers would be contra-indicated in heart failure. But there is growing evidence that beta-blockers are of benefit in mild to moderate heart failure, not in severe state, reason for using beta-blockers is to combat arrhythmias due to adrenergic over drive.

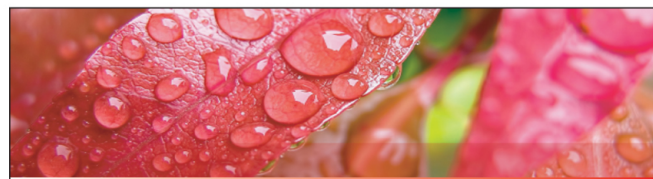
Reverse phenomena occurs in severe heart failure where adrenergic over-drive is essential to maintain reasonable cardiac output, hence beta-blockers are contra-indicated. So great care is necessary in determining which patients with heart failure should receive beta-blockers.

Carvedilol, a third generation, non-selective beta blocker. Beta I & 2, Alpha receptor blocking agent with vasodilatory

effect 6.25 mg daily in mild to moderate heart failure associated with HTN or IHD improves LV function which can be evaluated by 2D & M-mode echocardiography.

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Screening of Cervical Cancer by VIA among women in Rajshahi Medical College Hospital

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The ORION Medical Journal 2011 Nov;14-1(37): p13-16

Abstract

Objectives: To estimate the sensitivity & specificity of visual inspection of cervix using acetic acid (VIA) as a screening tool for detection of precancerous & early cancerous lesions of the cervix.

Methods

This study was done as a part of an ongoing screening program in Rajshahi Medical College Hospital from July'08 to Dec' 09. VIA was carried out in 540 eligible women attending Gynae OPD for gynecological problems. The women underwent a complete clinical evaluation. Detection of well-defined, opaque, acetowhite lesion close to squamocolumnar junction (SCJ) or in transitional zone (TZ), well-defined circumferential, acetowhite lesions or dense acetowhitening of ulceroproliferative growth on the cervix constituted a positive VIA. All screened women (540) evaluated by colposcopy and biopsies were taken from different quadrants of the cervix. The final diagnosis was based on histology, which allowed direct estimation of sensitivity, specificity, and predictive values of VIA and colposcopy. Those with CIN I or worse lesions diagnosed by histology were considered as true positive.

Results

Out of 540 patients screened, 328 (60.7%) were VIA negative, 199(36.9%) were VIA positive & 13(2.4%) had unsatisfactory VIA. Finding of VIA were evaluated against colposcopic findings and histological reports. Colposcopy yielded normal results in 353 (65.37%) women, low grade CIN in 130(24.07%) cases, high grade CIN in 39(7.22%) cases and cancer in 18(3.33%) cases. There were biopsy proven chronic cervicitis in 447(82.78%) cases, CIN I in 43(8.0%) cases, CIN II & CIN III in 26(4.8%) cases and carcinoma in 24(4.5%) cases. The sensitivity of VIA for biopsy proven CIN I or worse lesion was 68.08%, specificity 69.73%, positive predictive value 32.16%, & negative predictive value 91.20%.

Conclusions

VIA can differentiate a normal cervix from a precancerous cervix with reasonable accuracy. As it is low cost & simple method, it can be set in any hospital or any health care centre of rural or urban areas of poor resource country.

Key words

Cervical cancer, cervical cancer screening, visual inspection

of cervix with acetic acid, colposcopy, cervical intraepithelial neoplasia.

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Introduction

Cervical cancer is the second most prevalent cancer among women world wide, accounting for nearly 452000 new cases per year¹ & responsible for over 250,000 deaths in 2005, approximately 80% of which occurred in developing countries². Though no reliable statistical data about cancer is available, it is proved that cervical cancer is the most common cancer among women in Bangladesh³ & has annual incidence nearly 11956⁴. All the tertiary level hospitals & institutes of this country are carrying a large load of cervical cancer patients.

Cervical cancer is usually preceded by a long phase of cytological changes, known as Cervical Intraepithelial Neoplasia (CIN) & takes a long period of 10-15 years before the invasive cancer develops⁵. Thus cervical cancer can be prevented if cellular changes are detected & treated in early stage. In the developed countries cervical cancer incidence & deaths have been brought under control using organized cytology based screening programs⁶⁻⁷. Cytology based screening (Pap's) is effective but costly, needs technical supports to achieve optimal results, health units to collect cervical materials, laboratories to prepare slides & good number of cytopathologists apt to render a diagnosis⁸. So by no means it could be screening method in low resource settings. Hence, in search of easy, low cost & effective method for early detection of cervical cancer, investigators have developed a novel affordable diagnostic tool- VIA, which means 'visual inspection of cervix with acetic acid'.

Acetic acid is thought to cause swelling of epithelial tissue and reversible coagulation or precipitation of nuclear proteins & cytokeratins. Thus the effect of acetic acid depends upon the amount of nuclear proteins & cytokeratins present in the epithelium. In normal squamous epithelium, little coagulation occurs in superficial cell layer, as this is sparsely nucleated. Areas of CIN undergo maximal coagulation due to their higher content of nuclear protein prevent light from passing through the epithelium. As a result, the sub epithelial vessels pattern is obliterated and the epithelium appears white. This reaction is termed acetowhitening.¹

With low grade CIN, the acetic acid penetrates into the lower one-third of the epithelium (where most of the abnormal cells with high nuclear density are located).

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Hence, the appearance of the whiteness is delayed and less intense due to smaller amount of nuclear protein. Areas of high-grade CIN and invasive cancer turn densely white and opaque immediately after application of acetic acid, due to higher concentration of abnormal nuclear protein and presence of large numbers of dysplastic cells in the superficial layers of the epithelium¹.



Acetowhitening associated with CIN and invasive cancer quickly appears and persists for more than one minute. The acetic acid effect reverses much more slowly in high grade CIN lesions and in early pre-clinical invasive cancer than in low-grade lesions, immature metaplasia and sub-clinical HPV changes.

The acetowhite appearance is not unique to CIN and early cancer. It is also seen in others situations like immature squamous metaplasia, in healing and regenerating epithelium, leukoplakia, condyloma and congenital transformation zone. Acetowhitening due to inflammation and healing is usually distributed widely in the cervix, not restricted to the transformation zone and changes quickly disappear, usually within 30-60 seconds¹. The colposcopic diagnosis of cervical neoplasia requires an understanding & recognition of four main features: colour & tone intensity of acetowhitening, margins & surface contour of acetowhite areas, vascular pattern & colour changes after application of iodine.

In CIN I, the acetowhite epithelium is usually shiny or semitransparent. The borders are not sharp. On colposcopy, fine punctuation and/ or fine mosaic pattern of blood vessel may or may not present. There is absence of atypical blood vessel.

In CIN II & III, dense acetowhite or grey opaque epithelium is sharply bordered. On colposcopy, there are coarse punctuation and/ or mosaicism of blood vessel within the acetowhite lesion.

In invasive carcinoma, appearance of atypical blood vessels (irregular & bizarre pattern) within the acetowhite lesion which is strikingly thick, chalky white with raised & rolled out margin and bleeds on touch usually indicate the first sign of early preclinical invasive carcinoma.

Several recent studies suggest that VIA closely matches the pap smear⁹. VIA is chosen as screening procedure because- it is safe, non invasive, easy procedure & can be done in simple set up. It is painless, cheap & can get instant result & the patient can be treated in the same set up during the same visit making the screening with acetic acid application is a suitable alternative in resource poor settings.

In Bangladesh, the Dept. of Obstetrics & Gynaecology,

BSMMU, Dhaka with the support of UNFPA has started cervical cancer screening training program based on VIA since 2004. This training program is aimed at developing skills of health service providers so that they can screen cervical cancer & assist in managing all these cases in different Medical College Hospitals.

As a part of this pilot program, cervical cancer screening program has started in Rajshahi Medical College Hospital since September '05. The main objective of this work is to assess whether the aided visual inspection using acetic acid could be used as an alternative modality to detect early cervical cancerous and precancerous lesions.

Materials & Methods

This prospective study was done in Gynae out patient department (OPD) of Rajshahi Medical College Hospital from July '08 to December '09. Married women above 30 years of age or women having marital life more than 10 years attending Gynae out patient department (OPD) for any Gynecological problems were referred to VIA Centre. Unmarried women, women who were currently pregnant or who had a history of abnormal cytology, previous treatment for CIN or cancer, were excluded from the study.

Study patients had a detailed history & after proper counselling, the patients were placed in lithotomy position. Cervices were exposed by Cusco's vaginal speculum. Any evidence of infection, ectopy, any visible tumor, ulcer etc were checked. Then 5% acetic acid was applied to the cervix for 1 minute & inspection was done to see any acetowhite area around squamocolumnar junction (SCJ) or in transitional zone (TZ). A normal cervix had no white lesions. A low- grade CIN showed pale white lesions that might or might not about the SCJ. Well defined, dense, acetowhite areas with regular or irregular margins close to SCJ or in TZ were regarded as high grade CIN.

The criterion standard for our study was cervical biopsy. Colposcopic evaluation and biopsy were done on all subjects. Standard colposcopic criteria were used with the exception that when there was a question of metaplasia versus low grade CIN lesions were classified as low grade^{10,11}. If colposcopy showed no abnormality, biopsy were taken from different quadrants of the cervix. If there were abnormalities, biopsies were taken from those suspected areas.

The results of the test were discussed with the women & appropriate treatment after proper counseling.

Results

Patients' characteristics

During the study period from July '08 to Dec'09, we evaluated 540 women who fulfilled the legibility criteria & provided informed consent. Mean age of VIA positive cases were 36.17 years. In terms of parity, 339 (62.8%) had one or two live birth, 155 (28.7%) had three or four, 27(5.0%) had five or more and 19(3.5%) had no children. The mean onset of sexual life had been 18.38 years. Regarding first delivery 373 (69.1%) delivered between 15 to 20 years, 130 (24.0%) above 21 years and 37 (6.9%) below the age of 15 years. Only 34 (2.0%) had history of extramarital exposure and 59(9.0%) had family history of cancer in different parts of the body.

Among the screening groups, 102 (17%) had history suggestive of sexually transmitted infection. Regarding contraception 292 (54%) used oral contraceptive pills, Injectable 81(15%), barrier method 26 (5.0%), Cu-T & others 38(7.0%) and 103(19%) did not use any contraceptive. Regarding socioeconomic status, most of the patients 340 (63.0%) belonged to lower middle group (monthly income 5000-10000/), poor (monthly income <5000/) 154(28.5%), upper middle group (monthly income >10000-15000/) 27(5.0%) and upper group (monthly income >15000/) were 15(3.5%).

VIA, Colposcopy & Biopsy Findings

Out of 540 patients screened, 328(60.7%) were VIA negative, 199(36.9%) were VIA positive & 13(2.4%) had unsatisfactory VIA. Finding of VIA were evaluated against colposcopic findings and histological reports. Colposcopy yielded normal results in 353 (65.37%) women, low grade CIN in 130(24.07%) cases, high grade CIN in 39(7.2245%) cases and cancer in 18(3.33%) cases. There were biopsy proven chronic cervicitis in 447(82.77%) cases, CIN I in 43(7.96%) cases, CIN II & CIN III in 26 (4.8%) cases and carcinoma in 24(4.5%) cases.

Table 1: Percentage detection of different lesions by VIA, Colposcopy & Histopathology.

	VIA (n=540)	Colposcopy (n=540)	Histopathology (n=540)
Negative/ Normal	328 (60.74%)	340 (62.96%)	
Positive	199 (36.86%)	187 (34.63%)	
Unsatisfactory	13 (2.41%)	13(2.41%)	
CIN-I	139(25.74%)	130 (24.07%)	43 (7.96%)
CIN-II	34 (6.31%)	36 (6.67%)	25 (4.62%)
CIN-III	08 (1.48%)	03 (0.56%)	01 (0.20%)
Carcinoma cervix	18 (3.33%)	18 (3.33%)	
Carcinoma-in-situ			01 (0.20%)
Invasive carcinoma			23 (4.25%)
Chronic cervicitis			447 (82.77%)

Table 2: Screening results of VIA & Colposcopy

	VIA	Colposcopy
Sensitivity ¹	68.08%	87.09%
Specificity ²	69.73%	76.29%
Positive predictive value (PPV) ³	32.16%	43.32.08%
Negative predictive value (NPV) ⁴	91.20%	96.60%

1. Sensitivity: is the tests ability to correctly identify those individuals who truly have the disease among the screened population. The closure the sensitivity is to 100%, the more likely that the patient has a disease.
2. Specificity: is the tests ability to correctly identify those individuals who do not have the disease. The closure the specificity is to 100%, the more likely that the patient is truely disease free.
3. PPV: is the tests ability to correctly identify those individuals who truly have the disease among all those individuals whose tests are positive.
4. NPV: is the probability that the person with a negative test does not have the disease.

Predictive values are related to sensitivity & specificity of the results.

Discussion

The study was initiated with the main objective to assess the sensitivity & specificity of VIA as a screening tool to consider whether the aided visual inspection could be used as an alternative modality to detect cervical cancerous & precancerous lesions.

In our study, we evaluated 540 patients. The peak age was found within 30-39 years 287(53.1%) which matches with the studies of Yisrat J (2004)¹³ and Syeeda S (2003)¹⁴. Previous studies correspond well with this study that CIN is more prone to sexually active women. Hence, WHO recommends that if a woman can be screened only once in her life time, the best age is between 35 and 45 years.²

Earlier, several studies showed, unaided visual inspection could detect about 60% of women with early cancers. The cancer indicators were cervical ectopy that bleeds on touch, small growths & suspicious unhealthy cervix. The major drawback was that it missed most of the precancerous conditions. The use of acetic acid remarkably increased the sensitivity of detecting not only invasive cancer but also the precancerous conditions¹². In our study, the main complaints were intermenstrual bleeding, post coital bleeding, irregular vaginal bleeding, excessive dirty brown or whitish discharge & lower abdominal pain.

Among 540 patients, 199(36.9%) were found to have positive findings on VIA & 187 (34.63%) had abnormal findings on colposcopic evaluation, 43(7.96%) found to have CIN-1, 25(4.62%) CIN-II and 1(0.20%) CIN-III on histology. One case (0.20%) of carcinoma in situ & twenty three cases (4.25%) of preclinical invasive carcinoma were correctly picked up by histopathology.

The sensitivity & specificity of VIA were 68.08% & 69.73% respectively. Positive predictive value was 32.16% & negative predictive value was 91.20%. Our results are comparable to those of The University of Zimbabwe and Johns Hopkins study (76.7% and 64.1% respectively)¹⁶. Using similar criteria reported a sensitivity of 64% Le et al. 17 found 15% more abnormal cases detected by visual inspection compared to conventional cytology. Shankaranarayanan & Mahe (2004)¹⁸ have published results from a randomized intervention trial in India comparing VIA to cytology & to HPV DNA testing & found that all three had similar detection rates of CIN-2 & CIN-3 lesions & the range of sensitivity for VIA was 67-79% & specificity 49-86%.

Several variables affect the performance of visual inspection.¹⁹ Most importantly, visual inspection, is more difficult with small lesions that are limited to one quadrant. Fortunately, small lesions tend to be less severe^{20,21}. Second, the thoroughness of training affects the performance directly. Third, performance is influenced by the epidemiology of the population. Fourth, the presence of inflammation, infection and metaplasia affect the results²². In our study, both VIA & colposcopy was done by trained personals. Acetowhite areas due to immature squamous metaplasia and inflammatory lesions seem to be responsible for a large number of false positive results.²³

The findings of our study and results from previous investigations indicate that a major limitation of VIA is its

low specificity (less than 80% in most of reported studies)^{9,16,23,24}. This, inevitably, leads to high rates of referral and treatment. Acetowhite areas due to immature squamous metaplasia and inflammatory lesions seem to be responsible for a large number of false positive findings. It seems for our study that magnification added marginally to the detection of cases without gains in specificity (69% VS 36%). It is likely that standardized training, development of quality control procedures, and uniform definitions of VIA test outcomes may contribute to some improvement of the specificity of visual inspection based screening approaches without substantially lowering sensitivity. Long term efficacy of VIA based screening in reducing the cervical cancer burden remains to be demonstrated. Results from ongoing studies will further clarify the role of VIA and related strategies.

Conclusion

The human & financial resources available in a country determine what screening tests are to be performed & who will perform them. Visual inspection is likely to assume a central role in prevention of cervical cancer in many parts of the world because it does not require technical supplies and it allows diagnosis and treatment at a single visit. VIA can differentiate a normal cervix from a precancerous cervix with reasonable accuracy & can demarcate the site to be biopsied precisely than a blind biopsy of ectocervix. If practiced routinely, it would help to avoid many panic hysterectomies. Colposcopic magnification is a complementary method to VIA & not essential to identify a cervix with high grade lesions. Several studies showed that VIA & colposcopy had similar specificity profiles for CIN-II or greater. We believe that the benefits of low costs, ease of implementation & a point of care diagnosis and treatment algorithm, VIA can be used as a screening tool in poor countries not only in rural areas but also in hospitals, cancer institutes & health centers with better facilities.

In conclusion, we hope, our gynecologists, pathologists, administrators, supporting agencies & concerned peoples should take the challenge to cut down the sufferings of our females & families from cervical cancer & to have a steady step towards millennium of good health.

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Paediatric neurology: A timely needed sub- speciality in Bangladesh

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Abstract

Pediatric Neurology is a sub-specialty of Pediatrics which deals with diseases or effects of diseases or insults in the nervous system. Like Pediatrics the extent of this sub-specialty also extends from prenatal life to the late adolescent period. With the control of common infectious diseases, the relative incidence as well as prevalence of neurological problems is increasing day by day and occupying a large area among Pediatric diseases. The learning and caring procedure in neurology is different from other subjects. Because the mode of presentation, clinical features and treatment modalities are different. The mortality rate is also high and neurological sequel occur in as many as one third of survivors.¹

Acute bacterial meningitis takes a large share in neurological disease profile and a major cause of childhood morbidity and mortality. In an Indian study, among all the Pediatric admissions 1.5-5% were due to bacterial meningitis with a mean case fatality rate of 16%.^{2,3} In 2005, in a tertiary care hospital, almost 47.0% children were admitted with meningitis among neurological diseases in Pediatric ward with a case fatality rate of 7.0%.⁴ Many of these children were admitted very late and full recovery was impossible and ultimately became victims of various types of disability. Primary immunization against bacterial meningitis is yet not included in EPI programme. As a result, vaccination coverage is also very low. Outbreak of encephalitis occur a few years interval in our country. Epidemiological and laboratory studies have been conducted in these epidemics with the collaboration of some international organizations and these studies have shown evidence of infection by Nipah virus.⁵ Moreover it occurs endemically throughout the year with a high case fatality (57.4%).⁶ Endemicity of this has also been documented by Acute Meningo-Encephalitis Surveillance (AMES) programme conducted in three Medical College Hospitals and laboratory evidence of Japanese Encephalitis (JE) has been shown in 6% cases with Nipah in 1% and Dengue in 8% cases. Epilepsy is the third common neurological disease in children. About 50 million people in the world suffer from epilepsy and one-third of them are children. The life-time prevalence rate varies from 2-5%.⁸ Though around 70% of epilepsies are now curable, there is a belief in the general population that modern medicine are not suitable for epilepsy and the parents usually take treatment from indigenous or faith healers and ultimately many of the cases are died of various complications. Moreover, many of the drugs have become resistant and treating of these cases need special judgment by Pediatric neurologists.⁹

Treatment of cerebral palsy is a growing concern to Pediatricians. About 85% deliveries occur outside the hospitals and most of the cases are conducted by untrained

birth attendants. The rate of antenatal care is also very low and risk factors are not always diagnosed or conveyed to the families. There is usually delay in decision making by the family members or delay in reaching the hospital.^{10,11} All these contribute to perinatal asphyxia. About 50% of the neonatal admissions in tertiary care hospitals suffer from perinatal asphyxia.^{12,13} Many of the children suffering from perinatal asphyxia develop cerebral palsy. It has been contributing about 7.2% causes of disability with another 20.5% from birth related complications.¹⁴

The above mentioned facts are only the tip of an ice-berg. There are many other neurological conditions in children remaining uncared in the community. Approximately 10% (13.9 million) of the total population in our country are disabled and among them 50% are children and 58% cases of disability have neurological origin.¹⁵ Realizing the situation, Pediatricians have come forward to combat this situation. They have realized that Pediatric neurology is very essential component of learning as well as patient management. Child Neurology and Development Centers have been established in few number of large hospitals in limited scale. This is indeed a timely step in our country. Now it is necessary to expand the activities of the centers to all stake-holders and to develop public awareness. At the same time curriculum should be developed to incorporate it as a separate sub-specialty in medical education.

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Reproductive tract infections in a village area of Bangladesh

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Abstract

Objectives

To assess the incidence of reproductive tract infection among the married women in the reproductive age group living in the rural area of Bangladesh.

Study design

Retrospective study.

Method

Hospital based study done for a period of six months from January 2006 to June 2006. Only married women suffering from reproductive tract infection were included.

Result

Out of 1288 female patient attended for treatment in out patient department, 582(46.47%) were found affected by RTI. Women of age between 15 -35 years were mostly affected (85%). Abnormal vaginal discharge (100%) & itching were the most common symptoms. The disease was more common among the illiterate women (72%) & in the low socio-economic group (58%).

Introduction

Reproductive tract infections (RTI) are a group of diseases that cause genital tract infection, including both sexually & non-sexually transmitted diseases¹. RTI among married women in the reproductive age group is a very common problem. Although majority of the cases do not create serious health hazard but create problem in their sexual & social life. A few cases may progress to serious complications & cause morbidity.

Globally, three different types of RTI cause significant amounts of morbidity and mortality among women -sexually transmitted infections (STIs) (including gonorrhea, chlamydia, syphilis, trichomonas, and HIV infection); endogenous infections resulting from the overgrowth of organisms normally present in the reproductive tract (such as candidiasis and bacterial vaginosis); and iatrogenic infections related to medical procedures (such as menstrual regulation, abortion or IUD insertion)². The presence of STI increases the risk of acquiring and transmitting HIV infection by three to five times³.

I have tried to find out the prevalence of RTI in the rural area of Bangladesh.

Materials & methods

The study was carried out among the patients attended in the out-patient department of Satoria Upazilla health complex hospital of Manikgonj district from January 2006 to June 2006. A total 1288 married women reported to the hospital for treatment. Out of this, 582 patients, who came

with the symptoms RTI (abnormal vaginal discharge, pruritus, urinary symptoms, dyspareunia, lower abdominal pain etc) were included. Only reproductive age group (between 15 to 45 years) patients were included. Patients having symptoms similar to RTI but suffering from disease like ca- cervix, endometriosis, chronic cervicitis, cervical erosion were not included in this study. All the patients were examined thoroughly & in most of cases, detailed laboratory investigations were not possible because of lack of facilities, poverty & patient unwillingness. Necessary investigations were done only in suspected cases of syphilis, gonorrhea & AIDS. Treatment was given on the basis of clinical diagnosis. All the patients were followed up for clinical improvement and the outcome was recorded one month after the date of starting treatment. It was found that almost all of them were relieved of their symptoms.

Result

Table 1. Distribution of patients according to symptoms (n=1288)

Symptoms	No of patients	Percentage
Symptoms of other disease	706	54.53
Symptoms of RTI	582	45.47
Abnormal vaginal discharge	582	100
Yellow green discharge	39	6.70
Thick or frothy discharge	386	66.32
Foul smelling discharge	76	13
Discharge with itching	168	28.86
Lower abdominal pain	46	7.9
Urinary symptoms	52	8.9
Dyspareunia	09	1.55

Table 2. Age distribution among the patients of RTI.

Age group	Total no (%)
15-24	282(48.45%)
25-34	210(36.09%)
35-45	90(15.46%)

Table 3. Showing literacy status

Literacy status	Number	Percentage
Illiterate	420	72.16
Literate	162	27.84

Table 4. Showing working status

Working status	Number	Percentage
House wives	514	88.31
Working women	68	11.69

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Table 5. Showing Socio - economic status

Socio-economic status	Number	Percentage
Very poor	340	58.41
Poor	210	36.08
Middle class	32	5.49
Upper middle class	Nil	0
Upper class	Nil	0

Table 6. Showing symptoms of RTI among the contraceptives user & non user.

Contraceptive user (condom)	Contraceptive non user
134(23.04)	448(76.97)

Discussion

The present study reveals very high prevalence of the symptoms of RTI among the village women in the reproductive age group (45.47%). Several studies have been conducted in India about the same. They also showed the similar result (43.3%).⁴ The most common symptom was abnormal vaginal discharge (100%). Thick frothy discharge were the highest (66.37%), lack of proper hygiene in village women may be the cause.

Among the reproductive age group, maximum number of cases were observed in the age group of 15 to 35 years (84%). The high incidence in this group is probably because these people are most active in sexual activities. This result vary greatly with another study of Dasgupta et al, their percentage was 48.74. This great difference may be due to the fact that this study was done totally among the village women, who are less health conscious than the urban people. Married women in the age group between 15 to 35 years of age are also high in the village area.

The percentage of RTI was high among the illiterate women (72.16). Similar result were observed in a study at Rajasthan, India (62.5%)⁵, & study at Kolkata (66.6%). Illiterate women

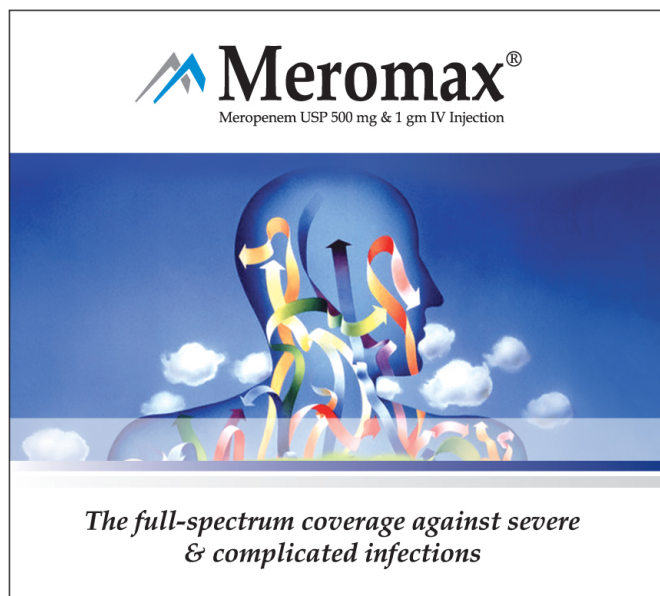
are less attentive about personal hygiene. The rate is also high among housewife (88.31%) than the working women group (11.69%). The working women are more literate & maintain hygiene than most of the housewife. Dasgupta in her study presented the rate (72.53%), a little less than this study.

Finally symptoms of RTI are less common among the women whose partner use condom (23.04%). The observation are nearly similar to the study of Bansal KM et al (16.6%).⁵

Symptoms of RTI are present among almost all the married women in low socio-economic group. The symptoms of RTI are so common among them that they ignore these and usually do not seek treatment for them, as they believe that these discomforts are an inevitable part of their life and they must endure them along with other health problems such as menstrual abnormalities, contraceptive side effects, miscarriages etc. This is mainly because of lack of knowledge among these women that these symptoms have morbidity.⁴ They also feel shy to disclose their problem. RTIs have an additional element of shame and humiliation for many women because they are considered unclean and so the fears of social consequences often take priority over fears of health consequences, making the infected women reluctant to inform their partners of their symptoms.

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Patterns of radiological features of sputum smear positive Pulmonary Tuberculosis

Islam M¹

The ORION Medical Journal 2011 Dec;14-1(37): p20-21

Abstract

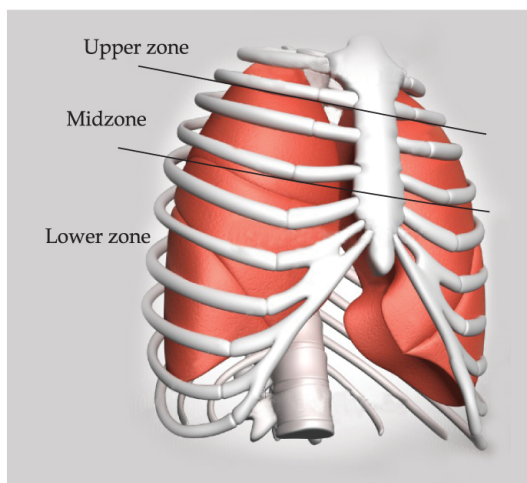
This is a retrospective study to see the pattern of radiological features of sputum smear positive cases of pulmonary tuberculosis. A total of 163 patients X-ray were evaluated. Different combinations of shadows were seen. Bilateral involvements were 86 and right lung involvements were 50 and left lung 26. One sputum +ve case shows normal CXR. Patchy opacities shown 73% and cavitory lesion was 27.60%. Right lung involvement is 31% and left lung involvement is 16%.

Key words

TB, Pulmonary Tuberculosis, Patterns of Radiological Features.

Introduction

The value of chest X-ray in the investigation of a patient with respiratory disease needs no emphasis.¹ The postero anterior (PA) is the standard view taken with the X-ray tube between 5 and 6 ft (1.5 -2m) from the subject and with the film against the front of the chest.



For radiographic description, the lung fields are subdivided into zones, eg, upper zone, midzone and lower zone. The portion of lung above the horizontal line through the lower border of the 2nd ribs at their junction with the costal cartilages is called upper zone. The portion of lung between the lower border of the upper zone and a horizontal line through the lower border of the 4th ribs at their junction with costal cartilages is called midzone. The portion of lung below midzone is called lower zone.

TB can cause many abnormalities

The common appearances² are :

- 1) Patchy or nodular shadowing in the upper zones (often bilateral)

- 2) Cavitation

- 3) Calcification

Some other possibilities:

- 1) 1-filar or mediastinal lymphadenopathy
- 2) Segmental or lobar collapse
- 3) Dense round or oval shadows.
- 4) Diffuse line nodular shadows.
- 5) Plural effusion.

Materials and methods

This retrospective study was carried in the chest disease clinic, Kurigram. X-rays of the sputum+ve cases were evaluated. Total no of X-rays evaluated were 163. Only new and fresh cases were evaluated in the study. Three consecutive sputum sample should have to be positive. Relapse, defaulter, failure and retreatment cases were excluded from the study. TB with concomittent other illness eg, Ca of lung, ILD, Asthma, COPD, etc. were excluded from the study. Sputum negative cases were excluded from our study as per our protocol.

Results

Results of our study were shown in the following tables:

Table 1: Sex Distribution

Male	Female	Total
124	39	163

Table 2: Age Distribution

Ages	Nos
0-14	2
15-24	32
25-34	29
35-44	34
45-54	33
55-64	23
65 and above	10
Total:	163

Table 3: Unilateral or bilateral involvement

Unilateral	76	46.63%
Bilateral	86	52.76%
CXR - Normal	01	

Table 4: Cavitory lesion

1	CXR with cavity	45	27.60%
2	CXR without cavity -	117	71.78%
3	CXR normal	01	
	Total	163	

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Table 5: Distribution of cavities

1	Right lung	32
2	left lung	12
3	Bilateral	01
	Total :	45

Table 6: No. of cavities in each CXR

Single	36
Two or more	09
Total	45

Table 7: Pattern of radiological changes

Sl.	Radiological Changes	Nos
1	Patchy opacities only	63
2	Patchy opacities with cavities	35
3	Nodular opacities	12
4	Nodular opacities with cavities	03
5	Patchy opacities with dense homogenous opacities	05
6	Patchy opacities with nodular opacities	06
7	Collapse consolidation	03
8	Calcified opacities	02
9	Simple cavity	04
10	Patchy opacities with consolidation with cavities	02
11	Patchy opacities with fibrosis	05
12	Fibrosis with collapse	06
13	Collapse with cavity	01
14	Non-homogenous opacities	07
15	Patchy opacities with fibrous band	01
16	Patchy opacities with plural effusion	02
17	Miliary shadows on both lungs	01
18	Hydropneumothorax	01
19	Egg shell opacities	01
20	Ground glass appearance	01
21	Normal CXR	01
	Total	163

Table 8: Distribution of radiological features according to involvement of zones

	Right lung	left lung involvement	Bilateral	Total
1. All zones	10	06	52	68
2. Upper and mid-zones	21	11	23	55
3. Mid and lower zones.	06	02	03	11
4. Upper and lower zones.	01	00	00	01
5. Only upper zone	05	03	02	10
6. Only mid zone	03	04	06	13
7. Only lower zone	04	00	00	04
Total	50	26	86	162

NB: One CXR is normal

Discussion

No chest X-ray pattern is absolutely typical of pulmonary tuberculosis. The chest X-ray findings associated with pulmonary tuberculosis are non specific. The vast majority of patients (over 90%) with cavitory pulmonary tuberculosis are sputum +ve.³ A normal chest X-ray for practical purposes excludes tuberculosis. Though very rarely tuberculosis causes tuberculous bronchitis which can not be seen on an X-ray.⁴ In our study we have one such case which is sputum +ve with normal CXR.

There is a virtually endless spectrum of possible combinations of shadows. For instance, it is common for chronic fibrotic tuberculosis to be complicated by acute spread of the disease. We have in our study, different type of combinations of shadows shown in table 7.

Male are predominant and majority of patients are within 15 to 55, as shown in table 1 & 2 in age and sex distribution. This is same as in other studies in Bangladesh.

Regarding distribution in different zones, unilateral involvement is 46.63% and bilateral involvement is 52.76%. Patchy opacities alone is seen in 39% but patchy opacities along with other pattern of radiological shadows is seen in 73% cases. Cavitory lesion 27.60% nodular opacities 12.88%. Right lung involvement is 31% and Left lung involvement is 16% All zones of both lungs involvement is 32%.

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Information for Authors

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A clinical study of premature rupture of membrane of gravid woman and its out come

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Abstract

Premature rupture of membranes (PROM) is one of the common complications of pregnancy that has a major impact on fetal and maternal outcome. It is one of the commonest clinical events where a uncomplicated pregnancy can turn into a high risk situation for the mother as well as the fetus. The main objective of this study is to evaluate clinical profile and out come of pregnancy with premature rupture membranes and to correlate with current thought and ideas. This study was confined to a limited number of patients (one hundred) over a short period of time July 2006 to December 2006. The aim of the study was to identify the maternal and fetal outcome of PROM and to compare it with that of control. In the current study, incidence of PROM was more in multigravida about 52%, about 44% of PROM patient had maternal morbidity compare to 16% in control group which is statistically significant ($p < 0.001$). The common morbidity found was chorioamnionitis (10%) and puerperal sepsis (12%). The incidence of neonatal morbidity of PROM patients was 42% compare to only 26% had morbidity patients with intact membrane. Cause of perinatal death in PROM was neonatal sepsis, severe asphyxia and RDS mainly. However, in-patients with intact membrane, main cause of death were prolonged obstructed labour and fetal distress.

When patients present with prolonged rupture of membrane, chance of infections morbidity is higher. Earlier the patient reach to the hospital with least intervention outside, better is the outcome and lower the gestational age at which membrane rupture, higher the fetal morbidity and mortality. Appropriate antibiotic coverage in appropriate time will reduce both maternal and fetal infectious morbidity.

Despite progress in obstetric and neonatal care over the past 20 years, perinatal outcome in pregnancies with PROM before 37 weeks of gestation remains dismal. Thus, if expectant management is desired, physicians should counsel their patients thoroughly and well in advance with regard to

the poor out comes for neonates anticipated after this type of delivery. However, the results of this study should be interpreted with caution because it is a small-scale tertiary level hospital study. Long-term maternal and neonatal morbidity will be the focus of future longitudinal studies.

Key words

PROM, Maternal out come, Fetal out come.

Introduction

Premature rupture of membranes is one of the common complications of pregnancy that has a major impact on fetal and maternal outcome. It is one of the commonest clinical events where a uncomplicated pregnancy can turn into a high risk situation for the mother as well as the fetus. PROM is associated with risk of perinatal as well as maternal morbidity and mortality and increased financial costs at any gestational age and birth weight.¹

Under normal circumstance the fetal membranes rupture during the active phase of labour. Spontaneous rupture of the membranes any time beyond 28th weeks of pregnancy but before the onset of labour is called premature or pre-labour rupture of membranes (PROM). PROM at term is common and occurs approximately 10.07% of all pregnancy.²

Infection in the female reproductive tract is associated with PROM and preterm labour. This process is in turn responsible for many preventable infant death. Antimicrobial therapy when used in the expectant management of preterm PROM is associated with prolongation of pregnancy and reduction of maternal and fetal morbidity.³

The management of patient with PROM has changed markedly in the past several years. Combination of better understanding of newborn physiology, improved neonatal care, refinement in antibiotic therapy and wide spread use of maternal and fetal monitoring improved the out-come of mother and infant. An important recent advance is the recognition that an active observation in management program is associated with less morbidity and mortality than the classic management course of delivery within 12 hours of membrane rupture.⁴

Proper diagnosis, proper monitoring of the patient, avoidance of vaginal examination, antimicrobial therapy can improve the maternal and fetal out come. The aim of the study was to identify the maternal and fetal outcome of PROM in RMCH. The main objective of this study is to evaluate clinical profile and out come of pregnancy with premature rupture membranes in RMCH and to correlate with current thought and ideas.

Aetiology of PROM

The cause of premature rupture of the fetal membranes is almost certainly multifactorial. At the molecular level, premature rupture of the membranes appears to result from

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diminished collagen synthesis, altered collagen structure, and accelerated collagen degradation, possibly in association with concurrent cellular changes with fetal membranes. A deficiency of vitamin C has long been postulated to play a role in preterm PROM because ascorbic acid functions at many level in the biosynthesis of collagen and in the immunologic response to infection.⁵

Recent studies revealed association between PROM and a number of clinical variables including cervical operation, laceration, incompetence, multiple gestation and polyhydraminions. Nutritional deficit, maternal infection (e.g. Urinary tract infection, STD), Naeye in 1982 found histological evidence of chorioamnionitis and PROM were increased when coitus occurred within previous 7 days.⁶

Pathogenesis of PROM

The enzymatic response of cells to bacterial infection enhances the destructive process acting on the amnion. Bacterial endotoxin may activate decidua to produce interleukin-1 (IL-1), Tumor necrosis factor (TNF) and interleukin-6 (IL-6). These inflammatory cytokines in turn may then stimulate prostaglandin synthesis. Elastase, a proteolytic enzyme found in azurophilic granules of neutrophil is involved in some cases of PROM. This enzyme causes hydrolysis of elastin and proteoglycan thereby degrading the inter chain cross-links and interrupts the integrity of membrane collagen.⁷

Many bacteria are shown to cause weakening of the amnion by induction of proteases, collagenases, elastase that degrade collagen and also activate the PG cascade. The membrane interaction with these bacterial enzymes is destructive by several pathways.

When the bacteria invade the amnion, it activate the peroxidase hydrogen peroxide halide system. Amnion, chorion, deciduas and placental macrophages all contain peroxidase activity, as do cervical mucous and endometrial cells.⁸ Some bacteria produce hydrogen peroxide thus providing the substrate for the formation of free radicals leading to local tissue destruction, necrosis, and cleavage peptide bonds in collagen. Free radical production and hydrogen ion release decrease the pH. Lowered pH destabilize lysosomal membrane, resulting in release proteolytic enzymes.

Diagnosis of PROM

Patients with PROM usually present with a typical history. In most of the cases that she had experienced a sudden passage of fluid from the vagina and has continued to leak fluid. Occasionally a single bolus of fluid has been passed without further leakage. Sometimes only intermittent leakage of fluid is noted.

Additional symptoms that may be useful include

- Colour and consistency of fluid with characteristic smell.
- Presence of flecks of vernix.
- Reduced size of uterus.
- Increased prominence of fetus on palpation.

In diagnosing PROM, the history and physical examination

alone are often inadequate to confirm the status of membranes. Fluid may not be present in the vagina for evaluation. Fluid at times may be contaminated with urine, Cervical mucus, bath water, vaginal discharge, blood or meconium. Despite significant advance in technology, no single test has been found to be completely accurate. Diagnosis requires an integration of history, physical examination and laboratory tests.

Each standard test for diagnosis PROM has well known false positive and false negative result. The diagnosis of PROM is close to 100% reliable if the vaginal fluid gives both positive Nitrazine and positive Fern test.⁹

Nitrazine test:- Nitrazine paper quickly turn into deep blue if the vaginal fluid contain alkaline amniotic (pH of amniotic fluid is 7-7.5).

Fern test:- Ferning results from the drying out of salts contained in the amniotic fluid.

Complications of PROM

The most common complications after premature rupture of membranes is amnionitis. The incidence of amnionitis after PROM for > 24 hours is 23.8% and within 48 to 72 hours is 57%.¹⁰ Women with intraamniotic infection have an increased incidence of abnormal labour compared with uninfected patients. Friedman showed 70.5% of woman with amnionitis had labour dysfunction. More recent reports have confirmed this association and have also identified an increased frequency of cesarean delivery among these woman. Koh et al. (1979) reported 43% cesarean section rate: two-third of these cesarean section were performed because of poor progress in labour despite use of oxytocin.¹¹

Materials and Method

Total 956 pregnant patients were admitted for delivery in RMCH, Rajshahi during the period of January 2006 to June 2006. Among them 96 patients were admitted with history of PROM. Out of 96 cases of PROM first 50 cases were included in this study, depending on inclusion and exclusion criteria.

Sample size

50 case of PROM patients and 50 cases of intact membrane (control) patients.

Place of study

Department of obstetrics and gynaecology of Rajshahi Medical College Hospital.

Period of study

January 2006 to June 2006.

Type of study

Perspective case control study.

Inclusion criteria of patients with PROM

- Both primi and multi-gravida were included.
- Gestational age more than 28 weeks duration.
- Spontaneous rupture of membrane before the initiation of labour.
- Patients not in active labour.

Exclusion criteria of patients with PROM

- Women who were admitted with established labour.

- High risk patients like anti-partum hemorrhage, severe pre-eclampsia, eclampsia.

Selection criteria of control group

- Spontaneous establishment of labour pain with intact membrane.
- More than 28 weeks of gestation.
- Primi and multi gravida both were included.

Exclusion criteria of control group

Patients admitted for elective caesarean section operation and admitted for elective induction of labour were excluded from control group. Because control group was selected to find out the outcome of spontaneous labour with intact membrane.

Patients and Methods

After admission full history including duration of pregnancy, time and onset of membrane rupture, past history of rupture membranes, past obstetric history was taken. Gestational age was determined by menstrual history (LMP), previous antenatal records, early USG and clinical examination. Pregnancy of more than 28 wks. duration were included in this study. Examination included recording of Pulse, Blood pressure, Temperature, anemia, oedema, Fundal height and Fetal conditions. Social class, personal history including coital habits all were recorded.

Total 956 pregnant patients were admitted for delivery in RMCH, Rajshahi during the period of January 2006 to June 2006. Among them 96 patients were admitted with history of PROM. Out of 96 cases of PROM first 50 cases were included in this study, depending on inclusion and exclusion criteria. Another 50 patients of intact membrane randomly selected as control for the study.

Membrane rupture demonstrated by

- History of gush of fluid from the vagina.
- Continued leakage of fluid from the vagina.
- Demonstration of amniotic fluid leakage from the cervix by a sterile speculum examination or pool of amniotic fluid in posterior vaginal fornix following fundal pressure.
- Demonstration of pH of the vaginal fluid by Litmus paper.
- Demonstration of oligohydroamnious by Ultrasonography (USG) used as supporting the diagnostic method.

During speculum examination High vaginal swab was taken from all patients for bacteriological study and sent for culture and sensitivity. On admission a blood sample was sent for leukocyte count (Total count & Differential count) for every patients.

A single sterile pervaginal examination was done to assess cervical condition. Plan of management was decided on cervical condition, duration of membrane rupture, intervention already made and signs symptoms of chorioamnionitis.

Diagnosis of chorioamnionitis was based on the presence of

maternal fever (100.4°F or 38°C) and one or more of the following findings :- fetal tachycardia (>160 beats /minute), maternal tachycardia (>100 beats/minute), uterine tenderness, malodorous amniotic fluid or maternal leucocytosis (12000-15000/mm³).

Plan of management of patient of PROM was decided on the condition of the patient, duration of pregnancy, duration of membrane and intervention already made. Patient admitted with the feature of chorioamnionitis was given combination of antibiotics by parenteral route and delivery was augmented either by induction or by cesarean section.

Uninfected patients with PROM > 37 weeks gestation with ripe cervix were induced by oxytocin for delivery. Patients with PROM < 34 weeks were managed by conservative approach with prophylactic administration of antibiotics. Patients were advised to take bed rest and use sterile valv pad. Patients were monitored 4 hourly to look for signs and symptoms of chorioamnionitis and fetal distress. White blood cell counts were performed daily. If any sign of infection or fetal distress developed conservative approach was abandoned and labour was induced or augmented.

In selected cases of preterm premature rupture of the membrane (< 34 weeks gestation). When no evidence of infection found, steroid (Betamethason) was used for fetal lung maturation. In some selected case (where no fetal distress, infection or bleeding was evident) tocolytic agent was used for prolongation of pregnancy in which spontaneous labour occurred.

After initial evaluation, per-vaginal examination was avoided. It was indicated in patients where immediate delivery needed, which included chorioamnionitis, advanced labour, failed tocolysis, fetal distress, fetal death and vaginal bleeding.

After delivery all neonates were examined by Pediatrician. Neonates with complications were admitted in the neonatology department and neonatal disease were diagnosed, investigated and treated by the Pediatrician.

Diagnosis of the maternal puerperal sepsis was based on the presence of pyrexia, offensive lochial discharge, lower abdominal tenderness and high vaginal swab culture. Maternal and fetal complications were identified by follow-up of the mother and infant until their discharge from hospital. Z-test was done for statistical analysis to determine the significance of difference between two proportions of study group and control group. The 'p' values of 0.05 or less were regarded as significant.¹²

Results

Incidence of PROM was 10.04% in Rajshahi Medical College Hospital during the period of January to June 2006 shown in figure No.1. Incidence of PROM with duration of pregnancy shows that most of the PROM patients were >37 weeks of pregnancy (Figure no. 2). Distribution of gestational age of patients in this study shows 56% of PROM cases and 94% of patient with intact membrane were gestational age > 37 weeks which is statistically significant (P < 0.001). At the same time 44% of PROM cases were preterm premature

rupture of membrane (PROM) and 6% patient with intact membrane were premature, which is also statistically significant ($P < 0.001$).

Among the patients with PROM 34% had associated disease during present pregnancy and among patients with intact membrane 24% had associated disease. Most common disease was UTI in both groups, 47.05% in PROM patients and 33.33% in intact membrane patients respectively. Lower Genital Tract Infection was next common in PROM and Hypertension and Anaemia was next in intact membrane group.

Incidence of PROM in Rajshahi Medical College Hospital

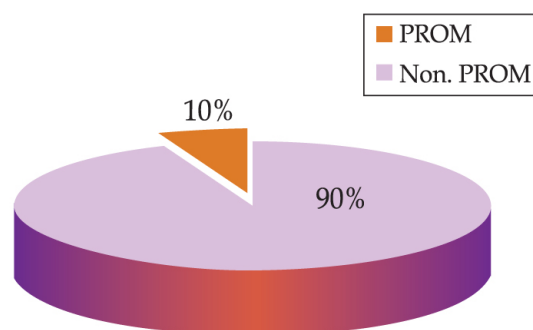


Figure No. 1: Incidence of PROM in RMCH during the period of January to June 2006

Above Pie chart shows that out of 956 pregnant patients admitted in RMCH, 96 (10.04%) patients were admitted with history of PROM.

Incidence of PROM with duration of Pregnancy

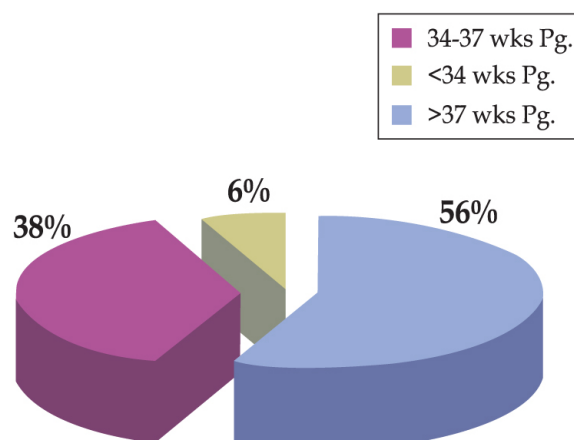


Figure No. 2: Incidence of PROM with duration of Pregnancy

Above Pie chart shows that most of the PROM patients were more than 37 weeks (56%) of pregnancy.

Table No. 1 : Distribution of Associated Disease

Name of Disease	Patients with PROM (n=50)		Patients with intact membrane (n=50)	
	Number	Percentage	Number	Percentage
Diabetes Mellitus	1	5.88%	1	8.33%
Hypertension	1	5.88%	3	25.00%
Anaemia	3	17.64%	3	25.00%
Urinary Tract Infection	8	47.05%	4	33.33%
Lower Genital Tract Infection	4	23.52%	1	8.33%
Total patients	17	34%	12	24%

Table No. 1 shows that among 50 cases of patients with PROM 34% had associated disease during present pregnancy and among the patients with intact membrane 24% had

associated disease. Most common disease was UTI in both groups, 47.05% in PROM patients and 33.33% in intact membrane patients respectively. Lower Genital Tract Infection was next common in PROM and Hypertension and Anaemia was next in intact membrane group.

Table No. 2 : Distribution of Maternal Morbidity

Maternal Morbidity	No. of patient with PROM (n - 50)		No. of patient with intact membrane (n - 50)	
	No.	Percentage	No.	Percentage
No Complication	28	56%	42	84%
Chorioamnionitis	5	10%	1	2%
Puerperal Sepsis	6	12%	1	2%
Abruptio Placenta	1	2%	0	0%
Wound dehiscence	1	2%	1	2%
Wound infection	4	8%	1	2%
PPH	1	2%	1	2%
UTI	4	8%	3	6%

Table No. 2 shows that 44% patients with PROM had morbidity and only 16% patients with intact membrane had morbidity which is statistically significant ($p < 0.001$). In PROM patient major morbidity was infection.

Table No. 3 : Maternal and Fetal Outcome of PROM Patients

OUTCOME		PROM patient with Early treatment (n - 31)	PROM patient with Late treatment (n - 19)
MATERNAL OUTCOME	No maternal complication	25	8
	Chorioamnionitis	2	3
	Puerperal Sepsis	2	4
	Abruptio Placenta	0	0
	Wound Infection	2	2
	Wound Dehiscence	0	1
	Post Partum Hemorrhage	0	1
	No Fetal Complication	22	7
FETAL OUTCOME	Neonatal Bronchopneumonia	2	2
	Neonatal Sepsis	1	2
	Asphyxia	1	2
	Neonatal Jaundice	3	3
	R.D.S	2	2
	Congenital Malformation	0	0
	Still Birth	0	1

Table No. 3 shows that all fetal and maternal complications were significantly higher in PROM patients who received treatment after Prolonged rupture of membrane. Chorioamnionitis and Puerperal Sepsis were higher in this group of PROM patients.

Table No. 4 : Fetal Outcome: Maturity of Baby

Mature	No. of Babies of PROM Patient (n - 50)	No. of Babies of intact membrane Patient (n - 50)
Mature baby	28 (56%)	47 (94%)
Premature baby	22 (44%) *	3 (6%) *

Table No. 4 Shows that in PROM patients, 44% premature but among intact membrane premature baby only (6%) which is statistically significant ($p < 0.001$).

Table No. 5 : Fetal Outcome: APGAR Score

APGAR Score	No. of Babies of PROM patient (n=50)	No. of Babies of intact membrane Patient (n=50)
> 7	42	45
5 - 7	5	3
3	2	1
0	1	1

Table No. 5 shows 4% babies of PROM mother were APGAR Score below 3 and in case of Intact membrane 2%.

Table No. 6 : Fetal Outcome: Weight of baby at Birth

Weight (kg)	No. of Babies of PROM patient (n=50)	No. of Babies of intact membrane Patient(n=50)
< 1.5	2 (4%)	0 (0%)
1.5 - 2.0	6 (12%)	2 (4%)
2.0 - 2.5	14 (28%)	10 (20%)
2.5 - 3.0	17 (34%)	20 (40%)
3.0 -3.5	8 (16%)	15 (30%)
> 3.5	3 (6%)	3 (6%)

Table No. 6 Shows 16% of babies of PROM mothers were below 2kg in comparison with 4% of babies in intact membrane patients babies.

Table No. 7 : Perinatal Outcome of baby

Outcome	No. of Babies of PROM patient (n= 50)	No. of Babies of intact membrane Patient (n=50)
No complication	29	37
Bronchopneumonia	3	2
Neonatal sepsis	3	1
Neonatal jaundice	5	3
RDS	3	2
Asphyxia	2	1
Congenital malformation	1	1
Still Birth	1	1
Prenatal death	3	2

Table no. 7 Shows 29 (58%) babies of PROM patients had no abnormality. Significant ($p < 0.001$) number of babies 21 (42%) of PROM patients had various type of morbidity compare to 13 (26%) babies of patients with intact membrane.

Discussion

In this study there was no maternal death. There is reduction in incidence of puerperal sepsis than two studies.^{13,14} This may be due to use of combination antibiotic therapy (Penicillin, Erythromycin, Cephalosporin) for some PROM patients. Brian, Kristopher, Arheart (1995) in their study showed antimicrobial therapy reduces both chorioamnionitis and puerperal sepsis.¹⁵

Regarding perinatal out come, among 50 PROM cases 56% babies were mature and significant number of babies ($p < 0.001$) i.e. 44% babies were premature, whereas only 6% babies were premature in intact membrane group (Table No. 4). Among PROM group 16% of babies had weight below 2 kg, 62% of babies had weight between 2-3 kg and 22% of babies had weight above 3 kg.

In control group 94% babies were mature, 6% babies were premature, 4% babies had birth weight below 2 kg, 60% babies had birth weight between 2-3 kg and 36% babies had birth weight above 3 kg.

In this study 58% babies of PROM patient had no abnormality and Significant ($p < 0.001$) number of babies 42% of PROM patients had various type of morbidity compare to only 26% babies of patients with intact membrane (Table No. 7).

In PROM patients, perinatal mortality was 8% in this study compare to 6% with intact membrane. Cause of perinatal death in PROM was neonatal sepsis, severe asphyxia and RDS mainly. However, in-patients with intact membrane, main cause of death were prolonged obstructed labour and fetal distress. In the present study both perinatal mortality and morbidity were lower than the previous three studies.^{13,14,16} This may due to improved neonatal care in RMCH, Rajshahi.

This study will not help us to estimate the incidence of PROM in our country because the study was done in tertiary level hospital i.e. Rajshahi Medical College Hospital (90% of delivery in Bangladesh occur at home) and being of short period. It is very difficult to precise the incidence of PROM. Because it is variable from country to country due to differences in accuracy of diagnosis of rupture of membranes, antenatal care, epidemiological factors and health service delivery. The incidence is estimated to be 2.7% to 17%.¹⁷ Incidence of preterm PROM is approximately 5%.²

The aim of the study was to identify the maternal and fetal outcome of PROM and to compare it with that of control. It will give an opportunity to analyze the magnitude of problems caused by PROM. This study was conducted in RMCH, Rajshahi shows the hospital incidence of PROM is 10.04% (Figure no.1). Tasnim in her study showed hospital incidence of PROM as 8.12% at DMCH in 1995 and Samar Kumar Ghosh in his study showed hospital incidence of PROM is 12.25% at BSMMU, in 2003.^{14,18}

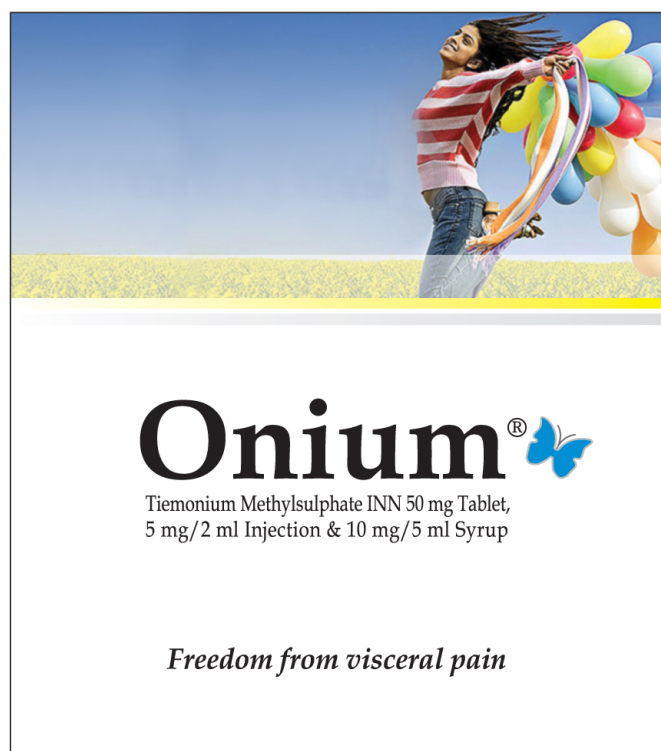
Conclusion

PROM is quite frequently seen in our hospital practices, it creates great hazard both for the fetus and mother. The clinical course of PROM is usually characterized by increased maternal and fetal morbidity. The ultimate goal of management must be towards the safety of mother and optimum perinatal outcome. The principal cause of PROM is till obscure. Relations of PROM with some risk factors were found in this study e.g. Coitus, recent history of abortion, M.R, D&C. past history of PROM and maternal diseases like UTI, lower genital tract infection, STD, malnutrition. This study was done with small population but it allows letting us to know certain risk factors, which can be preventable.

When patients present with prolonged rupture of membrane, chance of infections morbidity is higher. Earlier the patient reach to the hospital with least intervention outside, better is the outcome and lower the gestational age at which membrane rupture, higher the fetal morbidity and mortality. Appropriate antibiotic coverage in appropriate time will reduce both maternal and fetal infectious morbidity. Proper health education, motivation of patient, improved health hygiene, adequate maternity and childcare services, improved transport system are needed for reduction of morbidity and mortality. Further study on PROM to know exact incidence of PROM and effect of PROM on maternal and neonatal health in large scale, both hospital and community level is suggested.

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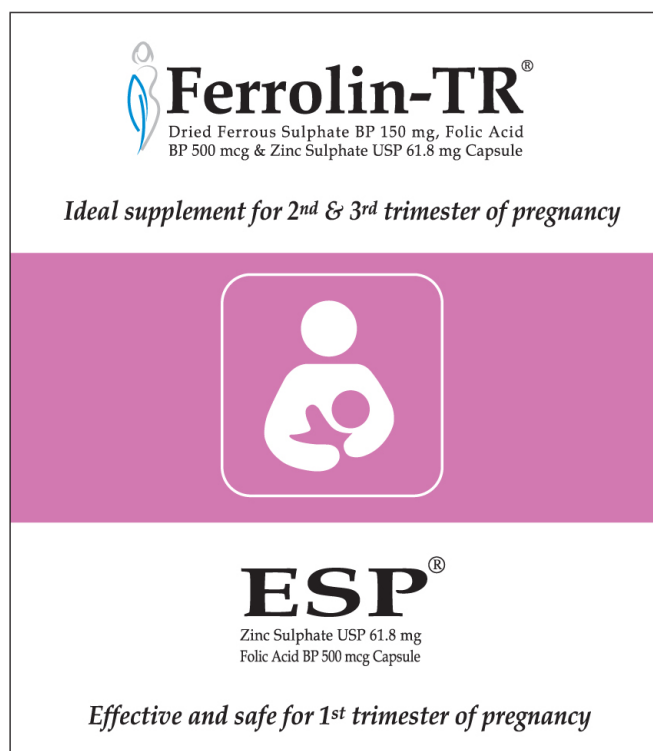
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Mesial Temporal Lobe Epilepsy (MTLE) Refractory Epilepsy in a 11 yrs old boy Akter N¹

The ORION Medical Journal 2011 Dec;14-1(37): p28-29

Summary

An 11 years old boy presented with Recurrent Seizure for last 5 years & progressive deterioration of school performance for 3 years. Mesial temporal lobe epilepsy (MTLE) was diagnosed on the basis of history & MRI finding which shows atrophy of brain & marked atrophy of left hippocampus & temporal lobe.

Introduction

Epilepsy is a neurological condition that makes people susceptible to seizure. A seizure is a change in sensation awareness of behavior brought about by a brief electrical disturbance in the brain.

Mesial temporal lobe epilepsy (MTLE) is one of common refractory epilepsy syndrome in the older child / teenager. It is often caused by hippocampal sclerosis, though other etiologies like cortical dysplasia, tumors and vascular malformation may also underlie it.^{3,4} It Presents as complex partial seizures with an aura of fear or epigastric sensation followed by unresponsiveness, automatism and later secondary generalization. The patients have often have febrile seizures in the past. The complex partial seizures present several years later and over time become refractory. If the epilepsy remains uncontrolled & resistant to AEDs it may cause progressive cognitive, behavioral & memory impairment.

Case report

Master Ferdous an 11 years old boy of non consanguineous parents hailing from Barisal, presented with recurrent seizure for 4 times during last 5 years. 1st attack if convulsion was occurred 5 years back which was generalized tonic-clonic in nature and was precipitated by fever. Each episode of convulsion last for 15-20 minuets and was associated with tongue biting and sphincteric incontinence. Convulsion was followed by unconsciousness to 50 to 60 minutes. Informant father also noticed that his child progressively deteriorating his school performance for last 3 years. Patient was no history of similar type of illness in his family. His birth history was uneventful & milestone of development is age appropriate. For this illness he was treated by a pediatrician with sodium valproate tablet at a dose of 15mg/kg/day for last 6 months, but he developed last episode of seizure 2 days before his visit on physical examination present is conscious co-operative oriented, afebrile, B.C.G scar mark present. Skin survey shows no evidence of neurocutaneous lesion. All vital signs are stable. HPF normal, all cranial nerves are intact sensory and motor function normal. DTR normal. Fundoscopy normal. All other system exam reveals no abnormalities.

Investigation shows normal blood picture & normal blood sugar & electrolytes level. EEG report shows no epileptiform discharge during any time of the recording CT scan of brain shows normal finding except prominence of right temporal horn. MRI of brain gives the impression of atrophy of brain with marked atrophy of left hippocampus & temporal lobe possibly Mesial Temporal Sclerosis (MTS). Patient was advised to continue sodium valproate at higher dose (25mg/kg/day). Informant father was counseled about the nature and prognosis of the disease and advised to remain on regular follow-up.

Discussion

Temporal lobe epilepsies are a group of medical disorders in which humans and animals experience recurrent epileptic seizures arising from one or both temporal lobes of the brain. Two main types are internationally recognized according to the International league against Epilepsy.¹³

Mesial temporal lobe epilepsy (MTLE) arises in the hippocampus, Parahippocampal gyrus and amygdala which are located in the inner aspect of the temporal lobe.

Lateral temporal lobe epilepsy (LTLE) arises in the neocortex on the outer surface of the temporal lobe of the brain.

The classical syndrome of LTLE begins when there is a very early insult to the left of right hippocampus. A link between complex febrile seizures and subsequent temporal lobe epilepsy has been suggested. But the exact role remain unclear.^{4,5,6} Some studies have pointed to human herpes virus-6 (HHV-6) as a possible link between febrile convulsions and later MTLE.^{6,7} Rarely MTLE can be hereditary or related to brain tumors, spinal meningitis, encephalitis, head injury of blood vessel malformation. LTLE less commonly can be hereditary as an autosomal Dominant Lateral temporal Lobe Epilepsy (ADLTLE) with auditory of visual features.

In TLE, the most commonly used older Anti Epileptic Drug (AEDs) are phenytoin, carbamazepine, valproate and phenobarbital. Newer drug such as gabapentin, Topiramate, levetiracetam, lamotrigine, Pregabalin, tiagabine, Lacosamide and zonisamide promise similar effectiveness. Unfortunately many patients with mesial temporal lobe epilepsy (up to one third) will not experience adequate seizure control with medication.⁸ For patients with mesial TLE whose seizure remain uncontrolled after trials of several AEDs, respective surgery should be considered.^{9,10} In preparation for these surgeries, Patients are monitored by various methods to determine the focus of their seizures, this can be done with video-EEG monitoring, intracranial EEG of spect imaging, MRT studies used to seek evidence of hippocampal sclerosis. Once the epileptic focus has been 'determined, it can be excised, which usually involves removing part of the hippocampus and often the amygdala.

If a person is not an optimal candidate for epilepsy surgery,

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then the vagus nerve stimulator or AEDs in clinical -research trials might be alternative treatment. Other possible future therapies such as brain cortex responsive neural stimulators and stereotactic radio surgery are under going research studies for treatment of TLE and other forms of refractory epilepsy.

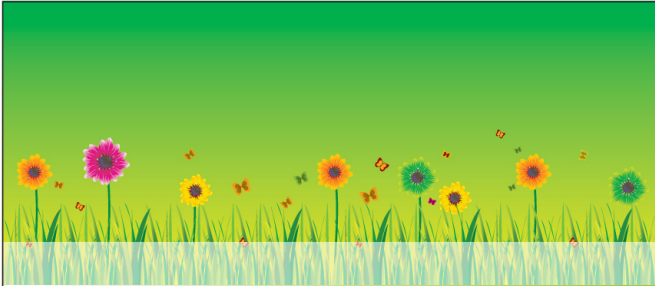
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Launching of New Products

Opagrel

The 3P antiplatelet

To ensure Potent, Prompt and Predicable response in PCI, Orion Pharma Ltd. has launched an antiplatelet agent Prasugrel tablet under the brand name Opagrel in two strengths- Opagrel-5 (Prasugrel HCl INN 5 mg) and Opagrel-10 (Prasugrel HCl INN 10 mg). Prasugrel HCl is a third generation oral thienopyridine approved by the USFDA and European Medicines Agency. Opagrel shows powerful evidence to overcome the drawbacks associated with Clopidogrel therapy in PCI. Moreover, in various updated guidelines such as 2011 ACCF/AHA Focused Update of The Guidelines for the Management of Patients with UA/NSTEMI and Guidelines on Myocardial Revascularization by ESC-2011, use of Opagrel has been highlighted.

Opagrel is indicated to reduce the rate of thrombotic cardiovascular (CV) events (including stent thrombosis) in patients with acute coronary syndrome (ACS) who are to be managed with PCI. Treatment should be initiated with a single 60 mg oral loading dose. Then 10 mg once should be continued daily with or without food. For patients < 60 kg, 5 mg once daily is considered. Opagrel-5 is available in 3x10's tablets in ALU-ALU blister pack at Tk. 240 per box and Opagrel-10 is available in 3x10's tablets in ALU-ALU blister pack at Tk. 450 per box.



Xindal

Mighty action against mixed infections

To treat mixed infections effectively Orion Pharma Ltd. has launched Clindamycin Capsule under the brand name Xindal in two strengths- Xindal-300 (Clindamycin HCl USP 300 mg) and Xindal-150 (Clindamycin HCl USP 150 mg). Clindamycin is a lincosamide antibiotic effective against both gram-positive and anaerobes to treat various mixed infections such as bone and joint infections, dental infections, skin and soft tissue infections etc. Xindal has excellent penetration into bone and synovial fluid which makes it clinically superior. Moreover, according to USFDA, Xindal falls in Pregnancy Category B.

Xindal is indicated in bone and joint infections, dental infections, skin & soft tissue infections, intra-abdominal infections, septicemia & endocarditis etc. The dosage and administration of Xindal in serious infections is 150-300 mg every 6 hours, in more severe infection is 300-450 mg every 6 hours. Xindal-150 is available in 3X10' capsules in Alu-PVC Blister Pack at MRP Tk.240/Box. Xindal-300 is available in 3X10' capsules in Alu-PVC Blister Pack at MRP Tk.450/Box.



Fostat-40

More effective and wider option in gout

As a more effective and wider option in gout Orion Pharma Ltd. has launched Fostat-40 Tablet, a brand of Febuxostat INN 40 mg.

Febuxostat is the first non-purine urate lowering therapy approved by the USFDA in 2009 has the documented superiority over conventional treatment options in gout.

Fostat-40 is indicated for the chronic management of hyperuricemia in patients with gout. The recommended starting dose of Fostat-40 is 40 mg once daily. For patients who do not achieve a serum uric acid less than 6 mg/dL after 2 weeks, 80 mg is recommended. Maximum recommended dose is 120 mg. No dose adjustment is necessary when it is prescribed for geriatric patients. Fostat-40 is available in Alu-PVC blister pack in 3x10's film-coated tablets at MRP Tk 300 per box.



Timex

Symbol of Satisfaction

To increase the ejaculatory latency time in men with Premature Ejaculation, Orion Pharma Ltd. has introduced Clomipramine HCl USP 25 mg tablet under brand name Timex. Clomipramine is a tricyclic antidepressant which shows excellent superiority over commonly used drugs for Premature Ejaculation (PE).

Research shows that once daily medication of Timex can increase the Intravaginal Ejaculatory Latency Time (IELT) nearly about 6 fold. In addition to Premature Ejaculation, Timex is also indicated in obsessive-compulsive syndrome, phobia and nocturnal enuresis. Treatment with Timex should be initiated with a small dose of 25 mg given at bedtime for about a week followed by a gradual increments to a maximum of 150 mg per day in adults and 75 mg per day in the elderly. Timex is available as 3x10's tablet in Alu-PVC blister pack at MRP Tk.150 per box.



Rivo

Revive Freshness

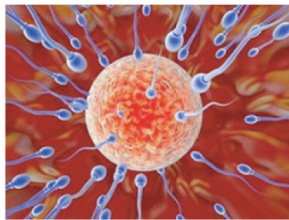
To revive freshness from Anxiety, Panic disorder, Sleep related disorder and Epilepsy, Orion Pharma Ltd. has introduced an anxiolytic, Clonazepam under the brand name Rivo Tablet in two strengths Rivo 0.5 (Clonazepam USP 0.5 mg) and Rivo 2 (Clonazepam USP 2 mg). Clonazepam belongs to the class of benzodiazepine and has been found to effectively reduce Social Anxiety Disorder, improve Sleep related disorders and Panic disorder in numerous studies. Rivo is indicated in panic attack, epilepsy, bipolar affective disorder, drug-induced dyskinesia, choreiform movement, fulgurant pain, tourette's syndrome, resistant depression, nocturnal myoclonus, trigeminal neuralgia. For adult and elderly the usual maintenance dose is 4-8 mg/day. Rivo 0.5 Tablet is available in 5x10's Alu-PVC blister pack at MRP Tk.100 per box. Rivo 2 is available in 3x10's Alu-PVC blister pack MRP Tk. 120 per box.



Sperm Grown in Lab

Japanese researchers have grown sperm in the laboratory for the first time, reports Nature. If the breakthrough with mice transfers to humans, it could open up IVF treatments for infertile men, notes the Guardian. Scientists created the sperm from the testicular tissue of mice and successfully produced a dozen baby mice with it.

The tissue worked even after being frozen, suggesting that men-or even boys too young to produce sperm-could freeze tissue for later use if they were undergoing chemotherapy or other treatments that can cause infertility. "The report is quite exciting because it represents the fulfillment of a goal held by many reproductive biologists over many years," says an expert in the field at the Jackson Laboratory in Bar Harbor, Maine.



Artificial sperm

Ref: www.newser.com

Scientists Find Potential Cure for Diabetes in men



Blood glucose monitoring

Scientists have made a breakthrough that they think could lead to a cure for diabetes in men. In recent experiments on diabetic mice, researchers were able to use tiny slivers of human testicular tissue to make

replacements for the faulty cells that cause the condition, allowing the mice to produce their own insulin, the Daily Mail explains. The researchers predict they could be able to fully cure type 1 diabetes in men and boys in as little as five years.

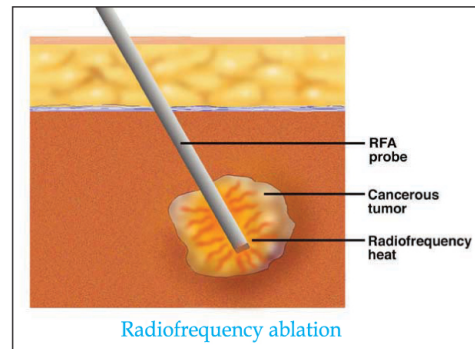
In the tests, the mice were only able to produce enough insulin to last them for about a week, but researchers think they can extend that duration. "We know that spermatogonial stem cells have the potential to do what we want them to do," one said, "and we know how to improve their yield." Within months, they hope to test the technique on humans. For now they're focusing on men, but they suspect the technique could be adapted to use eggs instead of sperm.

Ref : www.newser.com

Liver cancer and radiofrequency ablation

Recent studies involving the use of radiofrequency ablation in treating liver cancer have yielded positive results. Radiofrequency ablation is the removal of unwanted tissue from the body using radio-frequency energy. This method is also used in treating coronary diseases, varicose veins and in somnoplasty.

Although the study was limited to tumors less than four centimeters, the application of radiofrequency ablation was effective on patients with liver cancer where surgery was not possible. In the said study conducted in Charité, Campus Benjamin Franklin, Berlin, Germany complete destruction of



tumors occurred in 66 out of 67 cases where multipolar radiofrequency ablation was used to treat liver cancer. Fifty-two percent of the patients are tumor free, while seventy-eight percent are still living after four years. Only in eight cases that re-ablation was needed from the 67 cases.

Ref : www.cancercenter.com

High Chocolate Consumption Linked To Lower Stroke Risk In Females

Study Says women who eat at least two chocolate bars each week appear to have a 20% lower risk of stroke, compared to females of the same age and weight who rarely or never eat chocolate, researchers from the Karolinska Institute, Sweden, reported in the Journal of the American College of Cardiology. The researchers explained that cocoa has flavonoids-powerful antioxidants that can suppress oxidation of bad cholesterol (LDL, low-density lipoprotein). LDL can cause stroke and other cardiovascular diseases. The consumption of chocolate has been demonstrated to reduce diastolic and systolic blood pressure in randomized, short-term trials. Chocolate has also been shown to improve endothelial and platelet function, and to improve insulin resistance. Susanna Larsson Ph.D. and team used the population-based Swedish Mammography Cohort. 33,372 adult females aged from 49 to 83 years had completed a questionnaire that asked 350 questions regarding lifestyle and diet factors. It showed that The women who ate the most chocolate (average 2.3 ounces per week) had the lowest risk of stroke, about 20% lower compared to those who rarely or never ate chocolate.



Chocolate consumption lowers stroke risk

Ref : Christian Nordqvist

Medical Services Department (MSD) of ORION Pharma Ltd. successfully arranged significant number of Round Table Meetings, Scientific Seminars all over Bangladesh during August 2011 to October 2011.

Scientific Seminar (SS)

Dhaka

Lab Aid Specialized Hospital

On 22nd October 2011 a Scientific Seminar was arranged by the Lab Aid Specialized Hospital at the Auditorium of the complex. A renowned General Surgeon Dr. Jane Tan Jye Yng



of Mount Elizabeth Hospital of Singapore spoke on "Advances in Minimally Invasive Surgery for Colorectal Disease" and one of the prominent personnel of Cardiology field Dr. Chuan Hsuan-Hung of Gleneagles Hospital & Parkway East Hospital of Singapore spoke on "Update in Management of Heart Failure: from Medicine to Device Therapy."

The seminar was presided over by the famous Cardiologist Prof. (Dr.) Abdus Zaher. A panel of experts including Prof. (Dr.) M. Khademul Islam, Prof. (Dr.) A.K. Miah and Dr. A.P.M. Sohrabuzzaman made the discussion remarkable.

The program was concluded with a product discussion on Opagrel (Prasugrel) by the sponsoring company Orion Pharma Ltd.

National Medical College Hospital

On 13th October 2011 a Scientific Seminar was arranged by the National Medical College Hospital on "Record Breaking Disease". Dengue fever was designated as record breaking



in the seminar where Assistant Registrar Dr. Nazmul Islam Ronty and Medical Officer Dr. Kalimullah appeared as the speakers. Professor (Dr.) Aminul Haque & Assoc. Professor (Dr.) AKM Morshed were present as the chairperson & co-chairperson respectively.

Round Table Meeting (RTM)

Dhaka

Sir Salimullah Medical College Hospital

A Round Table Meeting was arranged on 16th October 2011 by the Department of Gynecology of Sir Salimullah Medical College Hospital. "Iron Deficiency anemia in pregnancy" was the key topic of the meeting on which Assistant Registrar Dr. Zakia discussed ins and out of the topic to all



the members of the department. Later Dr. Sumaiya Bente Jalil, Medical Associate of Orion Pharma Ltd. had the opportunity to talk about the management of IDA in pregnancy with Ferovent, a unique formulation of iron sucrose of Orion Pharma Ltd. Professor Dr. Shamsunnahar Begum, Head of the Department of Gynecology & Obstetrics enlighten the chair of the president.

Khulna

Khulna Medical College & Hospital

On 15th September 2011 a Round Table Meeting was arranged by the Khulna Medical College & Hospital at the Conference room on "Various signs of Liver Cirrhosis & its Management". Assoc. Professor (Dr.) Md. Abdul Ahad spoke about the signs and management. Professor (Dr.) Md. Abu Bakar was adorned the seat of chairperson.

The program was concluded with a product discussion on Novelta (Megaldrate & Simethicone) by the sponsoring company Orion Pharma Ltd.

Brahmanbaria

Christian Memorial Hospital

On 21st August 2011 a Round Table Meeting was arranged by the Christian Memorial Hospital on "Iron Deficiency anemia in pregnancy & its management". Dr. Shafiqur Rahman spoke on the key topic on behalf of Orion Pharma Ltd. The meeting was conducted by Residential Surgeon Dr. Duke Chowdhury.



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