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JALALABAD MEDICAL JOURNAL

Editorial

Early and Exclusive Breastfeeding for Improving Child Survival

Undernutrition, particularly in children is a vice locked around humanity, preventing individuals and even whole societies from achieving their full potential. Children who are undernourished have lower resistance to infection and are more likely to die from such common childhood ailments as diarrheal diseases and respiratory infections. Those who survive may be locked into a vicious cycle of recurring sickness and faltering growth, often with irreversible damage to their cognitive and social development. Good nutrition is the cornerstone for survival, health and development. Adequate nutrition is a basic right and essential for attaining and maintaining proper health and development of infants and children. Good nutrition has strong economic implications. When population is well nourished, higher individual productivity, lower health care costs and greater economic output will ensue.

In the developing world, about one out of every four children under five years (27%) is underweight, which accounts totally for about 140 million. Of these huge unfortunate children, 106 million (73%) live in just 10 countries of the world and 8 million in Bangladesh[1]. Undernutrition accounts for 45% of all deaths of children under five and an increase in breastfeeding rates can prevent 80000 of those deaths annually[2]. Improving nutrition has a huge impact on child survival helping to prevent deaths from diarrhea, pneumonia, malaria and measles as well as deaths in the neonatal period. It more over makes a vital contribution to the achievement of all the Millennium Developmental Goals (MDGs). Good nutrition not only helps children to grow properly but it saves millions of lives and thus advances human development, economic growth and poverty reduction. A global ecological risk assessment concluded that globally as many as 1.45 million lives are lost due to suboptimal breastfeeding in the developing countries[3]. Among the food and nutrient interventions that have been proved to work, very important and cost effective one is exclusive breastfeeding in the first six months of life, breastfeeding and complementary feeding after six months. Estimates indicate that infant mortality can be reduced by almost one third, if only prevalence of exclusive breastfeeding in the first six months can be raised nearly 80%[4]. Despite significant improvement in child survival in Bangladesh, more than 9 newborn die every hour within their first 28 days of life, 60% of all deaths of children under five are during the first month of life[5]. Simple cost effective solutions have proven to be effective in improving newborn survival, one of which is early initiation and exclusive breastfeeding. Resource poor country like Bangladesh can prevent 13-15% of under five deaths through achieving 90% coverage with exclusive breastfeeding[6]. Early breastfeeding within one hour and exclusive breastfeeding for the first six months are the key interventions to achieve MDG 1 and MDG 4, which deal with reduction in child malnutrition and mortality respectively[2,7]. In Bangladesh, effective implementation of these interventions is yet to be achieved. A BDHS data shows that exclusive breastfeeding among children under six months is 64% in our country[5]. The global community is now committed towards accelerating the achievement of Millennium Developmental Goals. There is growing understanding worldwide to invest in direct interventions for exclusive breastfeeding rates to go up. The 'Campaign to Reduce Maternal and Child Death' stressed on two interventions to reduce neonatal death: (i) breastfeeding and (ii) treatment of sick neonates using antibiotics by trained medical workers[8]. The World Bank also advocates shifting emphasis of nutrition programs from directly providing food to changing the behaviors of mothers to early initiation and exclusive breastfeeding for the first six months of life[9].

Bangladesh has achieved significant success in reducing under five child mortality by almost 75%, but still 60% of these deaths are contributed from neonatal deaths[10]. Bangladesh has stepped up its efforts to bring down neonatal and child mortality to 20 per 1000 live births by 2035. To achieve this target, undernutrition should be addressed seriously as it is one of the challenges along with top three causes of neonatal deaths and thus nation can save millions of unfortunate deaths.

Despite breastfeeding's numerous recognized advantages, early and exclusive breastfeeding rate in Bangladesh is still low. There are many gaps in policy and programs related to infant and young children feeding (IYCF) in Bangladesh. It is a big task to uplift IYCF counseling and support interventions to help mothers to succeed both in early and exclusive breastfeeding. The rationale for supporting a major program to protect, promote and support breastfeeding action, backed by budgetary support is compelling in our country. Child health and development policies should urgently address this major concern. Programmatic thrust should be given to reduce prelacteal feeding, increase exclusive breastfeeding rates and improve complementary feeding status.

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JALALABAD MEDICAL JOURNAL

Original Article

Outcome of External Dacryocystorhinostomy with or without Mitomycin C

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ABSTRACT

Epiphora is the watering of the eye due to defective tear drainage. It is the main presenting symptom of chronic dacryocystitis. Chronic dacryocystitis is a chronic inflammation of the lacrimal sac and nasolacrimal duct leading to permanent closure of the nasolacrimal duct. External dacryocystorhinostomy (DCR) is the definitive treatment of this problem which restores the patency of the lacrimal outflow system. External DCR remains the mainstay of treatment in managing epiphora due to chronic dacryocystitis. A review of literature reveals an average failure rate of external DCR is approximately 7.6%. The main causes of failure of this procedure have been considered as fibrous tissue growth, scarring and granulation tissue formation at the site of osteotomy. Mitomycin C (MMC) is an anticancer agent that has the ability to suppress fibrosis, vascular ingrowth and scar formation. The purpose of the study was to compare the outcome of external DCR with or without MMC in the treatment of chronic dacryocystitis. A total of 60 patients between 15 to 65 years of either sex with chronic dacryocystitis undergoing external DCR, fulfilling the inclusion and exclusion criteria were enrolled in this study. Study sample were divided randomly into group-A and group-B, each consisting 30 patients. Standard surgical technique of single (anterior) flap external DCR was applied to all patients. In group-A, cotton pledged soaked in 0.5mg/ml MMC was applied to the site of osteotomy for 5 minutes and group-B were treated with conventional DCR. Patients were re-assessed at 1 week, 1 month, 3 months and 6 months after surgery. Success was defined objectively by irrigation of nasolacrimal duct without regurgitation and subjectively by the absence of epiphora. There were 3 males and 27 females with mean age of 40.8 (±12.6) years in group-A, five males and 25 females in group-B with mean age of 41.1 (±11.8) years. The mean duration of operative procedure was significantly ($p<0.01$) longer in group-A [56 (±7.1) minutes] than that of group-B [47 (±11.9) minutes]. Postoperative complications were almost equal in both groups in regard to peri-orbital oedema, conjunctival congestion and nasal bleeding. Corneal epithelial defect, corneal perforation, scleral thinning and wound infections were not found in any subject of both groups. The success was little higher in external DCR with MMC [28 (93.3%)] than without MMC [27 (90%)]. There was no statistically significant difference ($p>0.05$) in success rate between external DCR with MMC and external DCR without MMC in the treatment of chronic dacryocystitis.

Key words: *Epiphora, Chronic dacryocystitis, Mitomycin C, External dacryocystorhinostomy.*

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INTRODUCTION

Epiphora is defined as excessive watering of the eye due to defective tear drainage[1]. Epiphora is an annoying symptom, embarrassing the patient both socially and functionally[2]. It is the main presenting symptom of chronic dacryocystitis and is a common ophthalmic problem[3]. Chronic dacryocystitis is an infection of the lacrimal sac and nasolacrimal duct that

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leads to permanent closure of the nasolacrimal duct. Dacryocystorhinostomy (DCR) is the definitive treatment of this problem which restores the patency of the lacrimal outflow system. Dacryocystorhinostomy is done either externally or endoscopically. External dacryocystorhinostomy (DCR) remains the mainstay of treatment in managing epiphora due to nasolacrimal duct obstruction[4,5]. A review of literature reveals an average failure rate of external dacryocystorhinostomy (EXT-DCR) as approximately 7.6%[5]. The main causes of failure of this procedure have been considered as fibrous tissue growth, scarring and granulation tissue formation at the site of osteotomy[6]. Thus if fibrous tissue growth and scarring over the anatomized flaps and osteotomy site could be inhibited, the success rate might be increased in DCR surgery. To enhance the success rate of external DCR, different adjunctive procedures like silicone tube intubations and application of mitomycin C (MMC) at the site of osteotomy have been tried and showed favorable outcome[7,8].

Mitomycin C, isolated from the broth of streptomyces caespitosus, is an alkylating antineoplastic agent that inhibits the synthesis of DNA, cellular RNA and protein by inhibiting the synthesis of collagen by fibroblasts[9]. Mitomycin C is an anticancer agent that has the ability to suppress fibrosis, vascular ingrowths and scar formation. Although mitomycin C was originally used as a systemic chemotherapeutic agent, topical mitomycin C is considered a surgical adjunct that has been widely used intraoperatively in pterygium surgery, restenosis of fistula in glaucoma surgery[10]. Several authors applied mitomycin C during lacrimal surgery and got beneficial effect[7,8] and some authors did not find significant outcome in external dacryocystorhinostomy[4,6,7,11,12]. In all studies, however, mitomycin C had a high safety profile and no serious side-effects were recorded[4,6,7,11,12]. But in our country, most surgeons did not use intraoperative mitomycin C during external dacryocystorhinostomy. So, this study was designed to compare the outcome of external dacryocystorhinostomy with or without mitomycin C.

MATERIALS AND METHODS

This was a cross sectional comparative study, conducted in Department of Ophthalmology, Sylhet MAG Osmani Medical College Hospital, Sylhet, during 1st July 2009 to 30th June 2011. A total of 60 patients with chronic dacryocystitis undergoing external dacryocystorhinostomy and fulfilling the inclusion criteria (Patient with positive regurgitation test, blocked nasolacrimal duct, between 15 to 65 years of age irrespective of sex) and exclusion criteria (Acute dacryocystitis, ectropion, gross deviation of nasal septum, atrophic rhinitis, malignant growth of lacrimal sac, diabetes mellitus) were enrolled in this study. Simple random sampling technique was applied to select sample. Study sample were divided randomly into group-A and group-B each consisting 30 patients. External dacryocystorhinostomy with intraoperative mitomycin C application was done in group-A, and only external dacryocystorhinostomy done in group-B.

Assessment of the Patients:

All the patients were assessed before operation from history, physical examination and necessary investigations. Chronic dacryocystitis were confirmed preoperatively by clinical and paraclinical findings including epiphora, discharge, regurgitation test and sac patency test. Complete ophthalmic examination was performed to see visual acuity; corneal opacities or ulceration and nasal cavities were examined for any intranasal pathology. Random blood sugar (RBS) was done to exclude diabetes mellitus and bleeding time, clotting time were done to exclude bleeding disorder. All the patients were thoroughly examined to exclude any systemic disease.

Intervention:

After a complete pre-operative evaluation, standard surgical technique of external dacryocystorhinostomy (EXT-DCR) was performed in all patients under local (Infiltrating) anaesthesia with 2% lignocaine and 0.5% bupivacaine by same surgeon. Before starting operation, a nasal pack was given with roller gauze, soaked with 2% lignocaine jelly in all the patients. Standard procedure of EXT-DCR was adopted in all cases. An incision approximately 1.5 cm long on the skin 8 mm away from medial canthus was made over anterior lacrimal crest. Separation of the skin and orbicularis oculi was done along the line of incision with lacrimal dissector. Medial palpebral ligament was exposed by rougine, exposing the periostium overlying the anterior lacrimal crest. The periostium was incised and elevated from the lacrimal sac fossa. Osteotomy was created over the fossa with bone punch forceps. The ostium size was approximately 12 mm in diameter. In all the patients the technique of single flap DCR was applied where only single anterior flaps of lacrimal sac and nasal mucosa were created and sutured. In DCR with MMC group (Group-A) after preparing the flaps, a cotton pledged soaked in 0.5mg/ml MMC was applied over the margin of the osteotomy for 5 minutes. Then the cotton pledged was removed through the entry wound and the area of MMC application was

irrigated with normal saline (At least 30 ml) and eye was also washed with normal saline. In patients of DCR without MMC group (Group B) only a single flap dacryocystorhinostomy was done. Flaps of lacrimal sac and nasal mucosa were apposed with 5-0 vicryl and the incision was closed in layers with 5-0 vicryl. Skin was apposed interdermally with 5-0 vicryl.

The follow up schedules were on 1st postoperative day, 8th postoperative day, after 1 month, after 3 months and after 6 months, objectively by irrigation of nasolacrimal duct without regurgitation and subjectively by the presence/absence of epiphora were evaluated in all groups. Data were processed manually and analyzed with the help of SPSS.

RESULTS

The mean age of patients was 40.8 (SD 12.6) years in group-A and 41.1 (SD 11.8) years in group-B. The mean age of the patients in both groups was almost identical ($Z=0.106$; $p>0.05$). There were 3 (10%) male and 27 (90%) female in the group-A; whereas 5 (16.7%) male and 25 (83.3%) female in group-B. Group-A and group-B did not show any statistically significant difference in relation to sex [$\chi^2=0.719$; $p>0.05$]. Left side was affected in 46.7% and right side in 53.3% of patients in group-A; whereas left side was affected in 60% and right side in 40% of patients in group-B. The side involvement of chronic dacryocystitis was almost similar in both groups ($\chi^2=1.071$; df-1; $p>0.05$). The mean duration of operative procedure was significantly more in group-A than group-B [56 (SD±7.1)] minutes vs [47 (SD±11.9)] minutes; [$Z=3.563$; $p<0.01$]. In group-A, operation time was 60 or more minutes in 18 (60%) patients, 50-60 minutes in 7 (23.3%) and 40-50 minutes in 5 (16.7%) patients. In group-B, 40-50 minutes in 13 (43.3%) patients, 60 or more minutes in 9 (30%) patients, 30-40 minutes in 6 (20%) patients and 50-60 minutes in 2 (6.7%) patients. There was significant difference in the duration of operative procedure between the patients of group-A and group-B ($\chi^2=15.703$; $p<0.01$).

Table-I: *Follow up at 1st month (n=60).*

Evaluation	Group-A (n=30) No (%)	Group-B (n=30) No (%)	p value
Watering	2 (6.7)	3 (10)	
Discharge	1 (3.3)	2 (6.7)	
Positive regurgitation test	1 (3.3)	1 (3.3)	p>0.05
Patent nasolacrimal duct	28 (93.3)	28 (93.3)	
Skin scar	3 (10)	4 (13.3)	

Table-I shows that there was no significant difference of studied variables between the groups such as watering at 1st month, [2 (6.7%) vs 3 (10%); $\chi^2=0.436$; $p>0.05$]; discharge [1 (3.3%) vs 2 (6.7%); $\chi^2=0.701$; $p>0.05$]; positive regurgitation test [1 (3.3%) vs 1 (3.3%); $\chi^2=0517$; $p>0.05$]; patent nasolacrimal duct [28 (93.3%) vs 28 (93.3%); $\chi^2=0.133$; $p>0.05$] and skin scar [3 (10%) vs 4 (13.3%); $\chi^2=0.322$; $p>0.05$]. No corneal opacity, scleral thinning or wound infections in any subject of both groups were observed.

Table-II: *Follow up at 3rd month (n=60).*

Evaluation	Group-A (n=30) No (%)	Group-B (n=30) No (%)	p value
Watering	2 (6.7)	3 (10)	
Discharge	2 (6.7)	2 (6.7)	
Positive regurgitation test	1 (3.3)	1 (3.3)	p>0.05
Patent nasolacrimal duct	28 (93.3)	27 (90)	
Skin scar	3 (10)	4 (13.3)	

Table-ll shows that there was no significant difference in studied variables between the groups such as watering at 3rd month [2 (6.7%) vs 3 (10%); $\chi^2=0.436$; $p>0.05$]; discharge [2 (6.7%) vs 2 (6.7%); $\chi^2=0.133$; $p>0.05$]; positive regurgitation test [1 (3.3%) vs 1 (3.3%); $\chi^2=0.517$; $p>0.05$]; patent nasolacrimal duct [28 (93.3%) vs 27 (90%); $\chi^2=0.436$; $p>0.05$] and skin scar [3 (10%) vs 4 (13.3%); $\chi^2=0.322$; $p>0.05$].

Table-III: *Follow up at 6th month (n=60).*

Evaluation	Group-A (n=30) No (%)	Group-B (n=30) No (%)	p value
Watering	2 (6.7)	3 (10)	
Discharge	2 (6.7)	2 (6.7)	
Positive regurgitation test	1 (3.3)	2 (6.7)	p>0.05
Patent nasolacrimal duct	28 (93.3)	27 (90)	
Skin scar	3 (10)	4 (13.3)	

Table-III shows that there was no significant difference of studied variables between the groups such as watering at 6th month [2 (6.7%) vs 3 (10%); χ^2=0.436; p>0.05]; discharge [2 (6.7%) vs 2 (6.7%); χ^2=0.0267; p>0.05]; positive regurgitation test [1 (3.3%) vs 2 (6.7%); χ^2=0.701; p>0.05]; patent nasolacrimal duct [28 (93.3%) vs 27 (90%); χ^2=0.436; p>0.05]; and skin scar [3 (10%) vs 4 (13.3%); χ^2=0.322; p>0.05].

Table-IV: *Distribution of patients by final outcome (n=60).*

Outcome	Group-A (n=30) No (%)	Group-B (n=30) No (%)	p value
Success	28 (93.3)	27 (90)	
Failure	2 (6.7)	3 (10)	p>0.05
Total	30 (100)	30 (100)	

Table-IV shows that success rate was little higher in patients of group-A than that of group-B [28 (93.3%) vs 27 (90%]; but the difference was not statistically significant (χ^2=0.436; df=1; p>0.05).

DISCUSSION

Toti in 1904 described the procedure of external dacryocystorhinostomy, making a direct anastomosis between lacrimal sac and nasal mucosa thus bypassing the site of obstruction in the nasolacrimal duct. External DCR has been accepted as highly successful procedure for chronic dacryocystitis. A review of literature reveals an average failure rate of external dacryocystorhinostomy (EXT-DCR) as approximately 7.6%[5]. Failure is generally defined as having symptoms of excessive watering of eye with negative sac patency test. The main causes of failure of this procedure have been considered as fibrous tissue growth, scarring and granulation tissue formation at the site of osteotomy[6].

To avoid failures of dacryocystorhinostomy, different modifications and newer techniques have been tried including application of intraoperative mitomycin C in different studies[7,8,10,11,13,14].

The optimal dosage and exposure time of MMC are still controversial. Variable concentration of MMC for variable duration has been applied by different surgeons. Liao et al[7] used 0.2 mg/ml for 30 minutes and Deka et al[13] compared 0.05 mg/ml with 0.4 g/ml for 2 minutes and found 0.4 mg/ml concentration of MMC more effective. You and Fang[11] compared 0.2 mg/ml MMC with 0.5 mg/ml MMC for 5 minutes and did not find any significant difference between this two. Considering all these previous studies, we have used 0.5 mg/ml MMC for 5 minutes in our study.

In this study, the age of the patients ranged from 15 to 65 years with the mean age of 41 (SD±12.1) years. The mean age of patients was 40.8 (SD±12.6) years in group-A and 41.1 (SD±11.8) years in group-B. The mean age of the patients in both groups was almost identical (Z=-0.106; p>0.05), suggesting the study was age matched. This result was similar to the study of Kashkouli et al[15] that the mean age of the patients with chronic dacryocystitis was 41.5 years (SD±17.7).

In the current study of 60 patients with chronic dacryocystitis, 8 (13.3%) were male and 52 (86.7%) were female. There were 3 (10%) male and 27 (90%) female in group-A; whereas 5 (16.7%) male and 25 (83.3%) female in group-B. Group-A and group-B did not show any statistically significant difference in relation to sex (p>0.05). So, the study was sex matched. This result was similar to the study of Nawaz et al[2] who found that 15% patients were male and 85% patients were female among their series of patients with chronic dacryocystitis. This female predominance may be due to the fact that dacryocystitis most commonly affects the women of post-menopausal age; and the lumens of bony lacrimal canal and nasolacrimal duct are narrow in females. Osteoporosis, hormonal changes and a heightened immune response

may be the other factors precipitating an already compromised lacrimal drainage system[2].

In our study of 60 patients with chronic dacryocystitis, left side was affected in 46.7% and right side in 53.3% of patients in group-A; whereas left side was affected in 60% and right side in 40% of patients in group-B ($p>0.05$). This result was similar to the study of Hurtikainen et al[16] and Kashkouli et al[15]. Hurtikainen found left side involvement in 56.2% and right side in 43.8% of patients; Kashkouli reported left side involvement in 55.8% and right side in 46.4% of patients.

In the current study the mean duration of operative procedure was 56 (SD±7.1) minutes in patients of group-A; whereas the mean duration of operative procedure was 47 (SD±11.9) minutes in patients of group-B ($p<0.01$). This result was supported by the study of Hofmann et al[17] and Ajalloueyan et al[5]. In their study Hofmann found the mean duration of the operative procedure was 33 (SD±18.2) for external dacryocystorhinostomy but Ajalloueyan found the mean duration of the operative procedure was 61 minutes for external dacryocystorhinostomy.

In this study postoperative complications were almost equal in both groups in regard to peri-orbital oedema, conjunctival congestion, nasal bleeding, poor wound healing, scarring near the medial canthus and rate of failure. Many complications due to mitomycin C application such as corneal epithelial defect, corneal opacity, corneal perforation, scleral thinning, scleral perforation have been reported in both pterygium and glaucoma filtration operations[7]. Fortunately, in our study, there were no complications.

In the present study the success was little higher in patients of group-A than that of group-B [28 (93.3%) vs 27 (90%]; but the difference was not statistically significant ($p>0.05$). This result was consistent with the study of Yildirim et al[18] that the success rate was 95% in external dacryocystorhinostomy with mitomycin C compared with 85% in the control group. There was no significant difference between the two groups ($p=0.605$). Roozitalab et al[12] reported little lower success rate in the MMC group (90.5%) while in the control group (without MMC) the success rate of 92.4% ($p=0.75$). Osmani et al[4] also found no significant difference of success rate in DCR with MMC and DCR without MMC [90.9% vs 95.5%; $p<0.05$). On the other hand Liao et al[7] found the patency rate of the lacrimal drainage system in the external dacryocystorhinostomy with mitomycin C group was 95.5% and that in the conventional external dacryocystorhinostomy group was 88.6%. There was a significant difference between the two groups ($p<0.05$).

In the external dacryocystorhinostomy group without mitomycin C, our results of 90% success rate was similar to the study of Erdol et al[19] that the success rate was 91.5% for external dacryocystorhinostomy.

CONCLUSION

Although adjunctive use of mitomycin C is thought to improve the success rate, we have not found any additional benefit. Further studies on larger volume of patients with longer follow up are required to reach to the final comment. So far in our experience, meticulous single flap DCR surgery without use of mitomycin C is sufficient to alleviate patient's symptom for chronic dacryocystitis.

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JALALABAD MEDICAL JOURNAL

Original Article

Pattern of Violence Against Women (VAW) in One Stop Crisis Centre of Sylhet MAG Osmani Medical College Hospital

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ABSTRACT

A retrospective study was done to document the pattern of "violence against women" that attended at the One Stop Crisis Center (OCC) of Sylhet MAG Osmani Medical College Hospital. A total of 2086 reported "violence against women" cases were examined over a period of 7 years from June 2006 to June 2012. The study revealed that a total of 2086 victims were brought to the centre during that period out of which 1337 (64%) were cases of physical assault, followed by sexual assault 732 (35%) and only less than 1% were burn cases. It also revealed that the trend of physical and sexual assault were increasing while the burn cases were steady. Husbands were most commonly indulging persons of violence against women 899 (66.5%) followed by mother/father in law 342 (25.5%) and relatives 74 (6%). There were 732 cases of rapes during the period and most were committed by relatives 497 (68%) followed by boyfriends 146 (20%). Rapes committed by unknown persons were only 89 (12%).This paper attempts to give a background on violence against women and a review of existing health care strategies with the needs and constraints of the sector. The paper is by no means exhaustive, but there may be a new window that can help to disseminate knowledge on this issue.

Key words: *Violence against women, Physical assault, Sexual assault.*

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INTRODUCTION

Violence encompasses "physical, visual, verbal sexual acts that are experienced by a woman or girl as threat, invasion, or assault and that have the effect of hurting her or degrading her and/or taking away her ability to control contact (intimate and otherwise) with another individual"[1].

The UN declaration on the elimination of violence against women is one of the major references in international literature. According to this declaration, the term "violence against women" (VAW) includes any act of gender-based violence that results in or is likely to result in physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liberty, whether occurring in public or private life[2].

Domestic violence is defined in the law as "certain criminal acts committed between persons of opposite sex who live together in the same household or who have lived together in the past or persons who have a child in common or are expecting a child (regardless of whether they have resided in the same household or not) or persons related to one another in the following ways: spouse, child, grandparent, former spouse, brother, grandchild, parent, sister"[3].

The criminal acts specifically defined in the law are: assault, criminal damage, custodial interference, endangerment, imprisonment, intimidation, kidnapping, trespass, disorderly conduct (by fighting, unreasonable noise, and abuse language) or reckless display or discharge of a deadly weapon or dangerous weapon or dangerous instrument[4].

Several factors play role in perpetuating violence against women. Poverty, patriarchal systems, socio-

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cultural norm, values etc have a major say in discriminating women and thus in violence against women. Heise et al has designed a very comprehensive table and classified these factors into the following categories: cultural, economic, legal and political factors[5]. A small literature review on the context of VAW (gender, sexuality, power imbalances) revealed that there is a big diversity of cultural concepts underlying relations between men and women, gender roles and general values and attitudes. The concept of patriarchy and subsequently male dominance is present in all three regions, although regional differences appear in application of this concept[6].

Recently, several actors suggested studying relational aspects and the context in which violence against women occurs. Social values, perceptions and perspectives that perpetuate violence should be taken into consideration when designing and implementing intervention programmes or prevention activities for combating violence against women. Specially in the health sector, findings from these kinds of studies could be able to enhance the efficiency of such interventions[7].

Violence against women is pervasive and insidious and carried out in the private domain. It is inflicted by an intimate partner, continues over a period of time (chronic) and limits avenues of escape for the victim[8].

Although the extent of the consequences of VAW is difficult to ascertain, it seems to be a significant cause of female morbidity and mortality. Findings from the USA reveal that wife abuse is the leading cause of injury among women of reproductive age. The possible consequences of VAW and more specifically domestic violence, have been well documented and have been categorized in physical out-comes (from headaches to permanent disabilities) mental, non-fatal outcomes, fatal outcomes and social effects. Literature suggests that the psychological impact of domestic violence is more debilitating than the physical consequences, and that there is more long-term health effects[9].

The health sector has been recognized as an opportunity to identify victims, as these services tend to see women throughout their lives. More recently many others state that the health sector not only has the opportunity but also it is their responsibility to attend these women. However, these expectations are not met yet. Many authors have documented the discrepancy between the large number of women who came to health care settings with symptoms related to living in abusive relationships and the low rates of detection and intervention by medical staff. Several reasons have been identified as being the cause of this: lack of interest of health care professionals, lack of training, lack of referral system, lack of specific protocol, medicalising the problem etc. Most of these findings have evolved from the developed countries. When transferring these findings to developing countries like Bangladesh, one has to take into account the context, opportunities and constraints of the health care sector, in order to develop and implement health care strategies[10].

Issues relevant to define violence against women include the importance of severity of aggressive behavior in partner relationships, relationships among types of abusive behavior, and adequacy of explanatory models of partner violence. Severity of aggression is important for describing and understanding partner violence. Different types of abusive behavior should be assessed to account for variation in partner abuse. Constructs drawn from multiple domains are needed to adequately explain partner aggression across the range of severity of partner abuse. Standardized structured interviews to assess partner violence in high-risk surveillance would complement checklists for general population surveillance[11].

MATERIALS AND METHODS

This retrospective study was done by examining the records in the One Stop Crisis Centre, Sylhet MAG Osmani Medical College Hospital and from the office of the police officer in charge, from the period of June 2006 to June 2012.

RESULTS

Table-I: *Distribution of victims according to age (n=2086).*

Age Group	Frequency	Percentage
10 years and below	119	5.7
11-20 years	698	33.4
21-30 years	975	46.7
31-40 years	251	12
41-50 years	32	1.5
51-60 years	8	0.5
61 years and above	3	0.2
Total	2086	100

Table-I shows that most of the women attended One Stop Crisis Centre are belonging to the age range 10 years to 40 years with maximum concentration around the age group of 21-30 years 975 (46.7%). Table-II shows that mostly married women were assaulted. Table-III narrates that women from lower socio-economic class are affected with violence against women mostly [1252 (60%)] followed by middle class

417 (20%). Table-IV describes the trend of physical assault among the victims attended in the One Stop Crisis Centre of Sylhet MAG Osmani Medical College Hospital. It is observed that there is an increasing trend of violence against women as found in the register of the One Stop Crisis Centre of Sylhet MAG Osmani Medical College Hospital. Again regarding the pattern of assault, physical assault is the predominant type 1337 (64%) followed by sexual assault 732 (35%). Only 17 cases (1%) were burn cases. Table-V shows that husbands were the persons most commonly indulging person of violence against women 899 (66.5%) followed by mother/father in law 342 (25.5%) and relatives 74 (6%), where as in only 22 (2%) of the cases other than close persons were responsible. Table-VI describes that there were 732 cases of rapes during the period of June 2006 to June 2012 and most of the rapes were committed by relatives 497 (68%) followed by boyfriends 146 (20%). Rapes committed by unknown persons were only 89 (12%).

Table-II: *Distribution of victims according marital status (n=2086).*

Marital Status	Frequency	Percentage
Married	1476	71
Unmarried	610	29

Table-III: *Distribution of victims according socio-economic status (n=2086).*

Socio-economic Status	Frequency	Percentage
Lower	1252	60
Middle	417	20
Upper	42	2
Undefined	375	18

Table-IV: *Distribution of victims according type of assault (n=2086).*

Year	Physical Assault	Sexual Assault	Burn	Total
Jun-Dec 2006	67	13	00	80
Jan-Dec 2007	234	37	2	273
Jan-Dec 2008	185	77	3	265
Jan-Dec 2009	188	135	4	327
Jan-Dec 2010	184	125	3	312
Jan-Dec 2011	244	162	3	409
Jan-Jun 2012	235	183	2	420
Total	1337 (64%)	732 (35%)	17 (1%)	2086 (100%)

Table-V: *Distribution of victims by person indulged the physical assault (n=1337).*

Year	Husband	Mother/father in law	Relatives	Other	Total
Jun-Dec 2006	30	27	8	2	67
Jan-Dec 2007	157	50	20	7	234
Jan-Dec 2008	115	60	9	1	185
Jan-Dec 2009	120	58	8	2	188
Jan-Dec 2010	125	44	11	4	184
Jan-Dec 2011	180	50	11	3	244
Jan-Jun 2012	172	53	7	3	235
Total	899 (66.5%)	342 (25.5%)	74 (6%)	22 (2%)	1337 (100%)

Table-VI: *Distribution of victims by person indulged the sexual assault (n=732).*

Year	Relatives	Boy Friend	Unknown	Total
Jun-Dec 2006	8 (62%)	3 (23%)	2 (15%)	13
Jan-Dec 2007	19 (51%)	10 (27%)	8 (22%)	37
Jan-Dec 2008	50 (65%)	17 (22%)	10 (13%)	77
Jan-Dec 2009	100 (74%)	19 (14%)	16 (12%)	135
Jan-Dec 2010	98 (78%)	16 (13%)	11 (9%)	125
Jan-Dec 2011	104 (64%)	43 (23%)	15 (17%)	162
Jan-Jun 2012	118 (64%)	38 (21%)	27 (15%)	183
Total	497 (68%)	146 (20%)	89 (12%)	732 (100%)

DISCUSSION

The tables above show that a total of 2086 victims were brought to the OCC of Sylhet MAG Osmani Medical College Hospital during the period of June 2006 to June 2012. There were three types of assaults viz. physical assault, sexual assault and burn cases. It is found that of 2086 victims, 1337 (64%) were abused physically followed by sexual assault 732 (35%). These figures are supported by the data found in a study conducted in North India in the year 2007[12]. Only less than 1% victims were burn cases. The study also shows that the incidences of physical assault and sexual assault have an increasing trend while the burn cases have a steady trend over the entire period.

The study revealed the following facts that the victims: (a) may not want the family or other people to know, sexuality was considered a taboo, and sexual matters were generally not discussed in the family (b) may be embarrassed, (c) may not understand the legal definition of rape, (d) may not want to report someone they know as being rapist, (e) may lack proof that a rape occurred or (f) may be afraid of subsequent victimization by the police as well as court system. Similar findings also found in a report submitted to Kaiser Family Foundation[13]. However, more than 95% of the sexual offence cases were reported to the police, either by the victim herself or through the hospital when victim attended at OCC, MAG Osmani Medical College Hospital for treatment.

Husbands are most commonly indulging person of violence against women 899 (66.5%) followed by mother/father in law 342 (25.5%) and relatives 74 (6%) where as only in 22 (2%) of the cases other than close persons were responsible. In Jamaica in the year 2010 similar data were observed[14].

Throughout the study, it was found that sexual offence cases were highly perpetrated by a known person or friend to the victim, followed by the male partner or boyfriend of victim. These findings are found to be similar to the study done by MN Islam in Malaysia during the period of 2000 to 2003[15].

CONCLUSION

This study has proven that the myth about rape that "rapists are usually strangers" is not true. Most of the sexual assaults were committed by persons known to the victims and only 12% were unknown. The known perpetrators vary from family members, relatives, to male partners or boyfriends, neighbors, teachers, servants and friends. In addition, people always think that crime scene, especially where rape or sexual assault occurred, is a dark and secluded place.

The health sector, at various levels, could and should be more active in working together with women's movement, to highlight the extent of the problem and to advocate for societal changes. Besides, it is essential that all legal, medical and police procedures must not cause further trauma to the sexual offence victims who must actually be given all possible supports and care. Grassroot organizations, researchers, workers in the health sectors and the policymakers, need to acknowledge and not to deny the existence of this problem and start to assess what role they can play in promoting change.

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JALALABAD MEDICAL JOURNAL

Original Article

Clinical Outcome of Percutaneous Coronary Intervention in Patients with Prior CABG Surgery

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ABSTRACT

Repeat coronary artery bypass graft (CABG) surgery is associated with a higher risk of mortality than first time CABG. Both mortality & morbidity can be even higher in elderly patient with repeat CABG. Repeat revascularization by percutaneous coronary intervention (PCI) can substantially reduce this risk. We studied the clinical outcome of PCI in patient with prior CABG surgery. It was a retrospective observational study that included all patient treated at United Hospital Dhaka from January 2007 to December 2012 by a single operator. Total 102 consecutive patients, who underwent PCI to native coronary arteries, bypass graft or both were included. Those patients with acute myocardial infarction, cardiogenic shock, on mechanical ventilator were excluded from the study. We studied the clinical outcome of the patients in terms of post PCI angina, death, myocardial infarction, left ventricular failure (LVF) re-procedure and stroke. In our study 97.92 % patient were male, mean (±SD) age was 58.32±9.7 years. Among them 74.5% had hypertension, 58.8% had diabetes, 21.6% were smoker and 22.5% had positive family history. In 79.5% cases we did PCI to native coronary arteries, 8.8% cases to bypass graft & in 11.7% case both native & bypass grafts were addressed. We did not try for complete revascularization rather than targeted to decrease ischemic burden. No death occurred during the procedure or during post procedural hospital stay. Out of 102 patients 69 (67.64%) were totally symptom free. Repeat revascularization needed in 8 (6.8%) patient. In our follow up 5 (4.9%) died, one due hemorrhagic stroke, two due to sudden cardiac death likely due to stent thrombosis and other two due to acute left ventricular failure (ALVF) & non ST elevation myocardial infarction (NSTEMI). It can be concluded from our study that PCI is safe in patients with prior CABG surgery.

Key words: *CABG surgery, Revascularization, Angina.*

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INTRODUCTION

Patients with prior CABG operation may at time need repeat revascularization as with time, some graft may be closed and others may develop significant atherosclerotic lesion. According to the society of thoracic surgery database, 8.6% to 10% with prior CABG needed repeat revascularization[1,2,3,4]. Since repeat CABG carries higher risk than initial CABG, PCI is the most common revascularization procedure after CABG[5].

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MATERIALS AND METHODS

It was a retrospective single center study done in United Hospital Dhaka from January 2007 to December 2012 that included 102 consecutive patients who met inclusion criteria. Both native & bypass graft PCI were done as indicated. Exclusion criteria included acute myocardial infarction, cardiogenic shock and patients on mechanical ventilator. As most of our

patients received medical care exclusively at this hospital, follow up was available in all patients either by clinic visit or by telephonic follow up.

PROCEDURE

All cases were done through femoral approach using 7 F guide catheters. All patients received aspirin 300 mg & clopidogrel 300 mg as loading in the morning on the day of the procedure. Ten thousand units of conventional heparin were given prior to the procedure and to keep ACT above 300 during procedure additional heparin was given as required. Three doses of LMWH were given 8 hourly for 3 doses after the procedure. GP IIb/IIIa inhibitors were given in selected cases. All patients were followed up at 1 month & at 9 months after PCI, there after yearly follow up were taken. Telephonic follow up were taken for those who failed hospital visit. During follow up we considered the clinical outcome of the patients in terms of post PCI angina, myocardial infarction, target vessel revascularization (TVR), stroke and death.

RESULTS

During the study period, 102 prior CABG patients underwent PCI. Of the 102 patients 97.92% were male and only 2.08% were female (Figure-1).

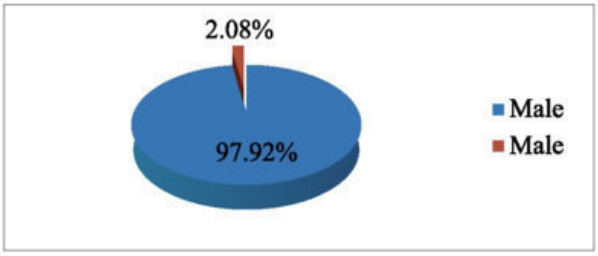

Figure-1: *Male female distribution (n=102).*

Among them maximum age was 81 years and minimum 35 years & mean was 58.32±9.7. In study population 74.5% were hypertensive, 58.8% had diabetes mellitus, 21.6% were smokers & 22.5% had positive family history (Figure-2). Indication of PCI was stable angina in 69.6% cases and unstable angina in 30.4% cases (Figure-3). In 79.5% cases native coronary artery stenting were done, in 8.8% cases only graft vessel stenting were done & in 11.7% cases both native & graft vessel stenting were done (Figure-4). In 52 (50.98%) patients single stent was used, in 34 (33.33%) cases 2 stents were used, in 15 (14.7%) cases 3 stents were used and in only 1 (0.98%) case 4 stents were used. Drug eluting stents were used in most cases (92.2%).

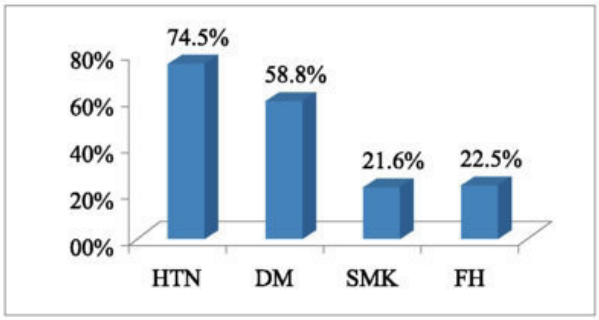

Figure-2: *Risk factor distribution.*

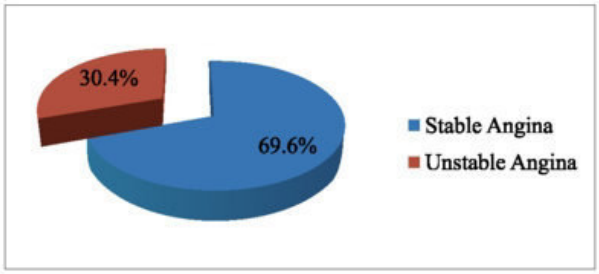

Figure-3: *Indication of PCI.*

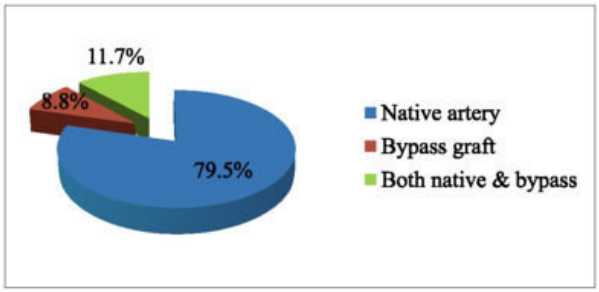

Figure-4: *Target vessel revascularization.*

Average duration of follow-up was up to 26 months. In the follow up we found that 69 (67.64%) patients were symptom free and 27 (26.47%) patients had stable angina. We lost 5 (4.9%) patients, among them two were due to sudden cardiac death during follow up, 2 due to acute LVF and one died following stroke. In our follow up, two (1.96%) patients sustained myocardial infarction, 4 (3.92%) were hospitalized with acute LVF and were managed conservatively (Table-I). Eight patients (7.8%) needed repeat revascularization. Two patients (1.9%) underwent repeat CABG and 6 (5.8%) patients underwent repeat PCI. During follow up 34 (33.3%) patient underwent exercise tolerance test (ETT) which was found positive in 8 patients. Eighteen patients had relook coronary artery angiogram & 3 had CT angiogram. Among them 13 patients had patent stent, 4 had ISR & 4 had new lesion.

Table-I: *Events and adverse effects during hospitalization and at follow-up.*

Events	Number (%)
Symptoms free	69 (67.64%)
Stable angina	21 (20.58%)
Myocardial infarction	2 (1.96%)
Stroke	1 (.09%)
LVF	4 (3.92%)
Death	5 (4.95%)
Total	102 (100%)

DISCUSSION

Numerous single center & multi center registries have documented that repeat CABG carries a higher mortality and morbidity[6,7]. Angina with extremely serious operative mortality exclusion (AWESOME) randomized trial & prospective registry compares long term PCI & CABG survival in patient with prior CABG. They concluded that PCI may be preferred revascularization strategy for many patients with prior CABG surgeries[5].

NCDR Cath PCI registry (By American College of Cardiology Foundation & the Society for Cardiovascular Angiography & Interventions) examined patients with prior CABG undergoing stenting from January 2004 through June 2009. They found most PCI performed in prior CABG patient were done in native coronary arteries[8]. Native coronary artery PCI was performed in 56% patient reported by Varghese et al[9] versus 44% reported by Chen et al[10]. PCI to native coronary artery has traditionally been preferred to bypass graft PCI because SVG PCI carries higher restenosis rate compared to native coronary PCI[11]. In our study we did PCI in 79.5% cases in native coronary arteries, 8.8% cases PCI done in graft vessel & in 11.7% cases PCI done in both graft vessel & native arteries.

Varghese et al[9] compared clinical outcome of 142 patients who underwent PCI with a history of previous CABG surgery. They found myocardial infarction in 5%, repeat PCI in 9% and death in 6% cases[9]. In our study we found myocardial infarction in 1.96% cases, repeat procedure in 7.8% cases and death in 4.9% cases which are quite comparable with international studies. Limitations of our study were: i) it was a retrospective study with a small study population and ii) we did not do relook coronary angiogram. If we could do relook angiogram in most of the patients, it could have given more reliable information regarding stent patency.

CONCLUSION

PCI may be the treatment of choice in patients with prior CABG surgery because of lower procedural risk. More studies are required to see the long term clinical outcome.

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JALALABAD MEDICAL JOURNAL

Original Article

Isolation of Organisms from Blood Culture and Their Drug Resistance Pattern

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ABSTRACT

Determination of the frequency of bacteria isolated from blood culture and the pattern of their antibiotic sensitivity is epidemiologically of great importance and can help appropriate treatment. The aim of the current study was to determine the common bacteria that cause blood infection and their sensitivity pattern in one year period from January 2012 to January 2013. Out of 602 blood samples a total of 127 samples showed growth of bacteria and were indentified and tested for antimicrobial susceptibility. Among the isolated bacterial strains the maximum number were Staphylococcus aureus (28.3%) followed by Pseudomonas sp (22.8%) and coagulase negative staphylococci (CoNS) (18.9%). Majority of Staphylococcus aureus was found 100% sensitive to imipenam, 94.4% to amikacin and linzolid, 91% to levofloxacin and vancomycin and 86.1% to ciprofloxacin. Bacteria commonly causing septicaemia and their pattern of antibiotic resistance were different in some areas and this issue needs further studies.

Key words: *Blood culture, Antimicrobial drugs, Bacteraemia.*

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INTRODUCTION

Blood stream infection is the most common cause of significant morbidity that leads to mortality especially in the developing countries[1]. Illness associated with bacteraemia ranges from self limiting infection to life threatening sepsis i.e. mortality ranging from 20 to 50 percent[2]. Isolated bacteria from blood are numerous and their associated diseases require urgent and invasive management[3]. Septicaemic or bacteraemic illness is also being complicated by increasing antibiotic resistance worldwide. Early initiation of antibiotic treatment is essential to decrease mortality and morbidity in patients with blood stream infection[4]. Bacteraemia in children is a potentially life-threatening condition which requires immediate and effective antimicrobial treatment. It contributes to 19 percent of neonatal deaths[5] and even up to 30-50 percent of the total neonatal deaths in developing countries[6,7]. Bacteraemia is also seen in people with immunodeficiency, patients underwent operation or under medical care, aged patients and patients receiving invasive treatment or using implants[8].

Taking into consideration the significance of blood stream infections as well as their ever changing etiology, this study was undertaken to determine the common bacterial species isolated from blood culture and their drug resistance in Sylhet region.

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MATERIALS AND METHODS

The present study was carried out from January 2012 to January 2013 in a well equiped private laboratory in Sylhet, having automated blood culture machine. Blood was collected aseptically in standard blood culture bottles containing appropriate amount of blood in Brain Heart Infusion Broth with SPS (50 ml broth in adult bottles and 20 ml in paediatrics bottles) and were incubated at 37^0 C temperature for 72 hours in an automated blood culture machine " BACT/ ALERT 3D Select 60". When growth occurred, subculture on blood agar and MacConkey agar media were done. For the final identification of the bacteria standard identification protocol such as gram staining, coagulase test, oxidase test and biochemical tests were

performed. For confirmation of *Staphylococcus aureus* subculture was done on mannitol salt agar medium (selective medium for *Staphylococcus aureus*). For identification of coagulase negative staphylococci (CoNS) novobiocin sensitivity test was done. Antimicrobial susceptibility test was performed on Mueller Hinton agar medium by Kirby-Bauer disk diffusion method, in which inhibitory zone diameter against each of the antibiotic for every isolate was recorded[9]. Isolated bacteria were tested for following antibiotics: azithromycin, amikacin, ceftriaxone, cefixime, cephradine, ciprofloxacin, cotrimoxazole, gentamicin, imipenam, levofloxacin, linzolid, novobiocin, oxacillin and vancomycin.

Table-I: *Distribution of the positive samples in various age groups (n=127).*

Age Group	Total Samples	No Growth	Growth (% of Total)
Adult (18-85 years)	481	382	99 (20.5)
Paediatric (1 month to 18 years)	98	76	22 (22.4)
Neonate (upto 1 month)	23	17	6 (26)
Total	602	475	127

RESULTS

Total number of blood samples analyzed in the laboratory during the mentioned period was 602, of which 127 showed growths with a culture positivity rate of 21%. Maximum number of samples tested (79.9%) were from the age group (18-85 years).

Table-II: *Bacterial strains isolated from blood cultures (n=127)*

Name of the Bacteria Isolated	Number of Bacterial Isolates	Percentage
Staphylococcus aureus	36	28.3
Pseudomonas sp	29	22.8
CoNS	24	18.9
Salmonella typhi	17	13.4
Escherichia coli	15	11.9
Klebsiella sp	6	4.7
Total	127	100

Samples from paediatric age group (up to 18 years) were 16.2% and from the neonate it was 3.8%.

Among the culture positive cases in this study it was found that maximum growth occurred in the neonates (26%) followed by paediatric group (22.4%). In the adults it was 20.5% (Table I).

Several organisms were isolated from blood cultures. Among the isolated 127 bacterial strains, majority were *Staphylococcus aureus* 36 (28.3%), followed by *Pseudomonas* sp 29 (22.8%), coagulase negative staphylococci (CoNS) 24 (18.9%). In addition to these, there were few percent of organisms belonging to Enterobactericae family such as *Salmonella*, *Escherichia coli* and *Klebsiella sp* (Table II). Among the 6 bacterial isolates in neonate group 4 were *Staphylococcus aureus* and 2 were *Escherichia coli*.

Regarding sensitivity pattern of the isolates, all (100%) of the *Staphylococcus aureus* was found sensitive to imipenam. Among oter antimicrobial drugs, amikacin 94.4%, linzolid 94.4%, levofloxacin 91.6%, vancomycin 91.6% and ciprofloxacin 86.1% was found sensitive to *Staphylococcus aureus*.

Among the isolated *Staphylococcus aureus*, 27.7% were found resistant to oxacillin (MRSA). 69.4% of *Staphylococcus aureus* found resistant to cefixime and macrolides like azithromycin was resistant in 63.8% cases. It was also found in this study that 3 (8.3%) cases of vancomycin was resistant to *Staphylococcus aureus* strains. Non fermenters like *Pseudomonas sp* were susceptible to amikacin (100%), imipenam (100%), gentamicin (86.2%).

The members of Enterobactericae isolated in this study were found sensitive to most of the antibiotics (Table-III and Table-IV).

DISCUSSION

Blood stream infections (BSIs) range from transient bacteraemia to septic shock. Blood culture is gold standard for accurate detection of etiological agent of infectious diseases and can assist to choose appropriate antimicrobial therapy[10]. Early detection of blood stream infections can prevent implantation of microorganisms into vital organs such as the brain,

Table-III: *Antimicrobial sensitivity pattern of Staphylococcus aureus and CoNS.*

Antimicrobial Agents	Sensitivity Pattern	*Staphylococcus aureus*, No (%)	CoNS, No (%)
Azithromycin	S	13 (36.1)	18 (75)
	R	23 (63.8)	6 (25)
Amikacin	S	34 (94.4)	23 (95.8)
	R	2 (5.5)	1 (4.1)
Ceftriaxone	S	31 (86.1)	20 (83.3)
	R	5 (13.8)	4 (16.6)
Cefixime	S	11 (30.5)	7 (29.1)
	R	25 (69.4)	17 (70.8)
Cephradine	S	24 (66.6)	15 (62.5)
	R	12 (33.3)	9 (37.5)
Ciprofloxacin	S	31 (86.1)	21 (87.5)
	R	5 (13.8)	3 (12.5)
Cotrimoxazole	S	27 (75)	11 (45.8)
	R	9 (25)	13 (54.1)
Gentamicin	S	32 (88.8)	20 (83.3)
	R	4 (11.1)	4(16.6)
Imipenam	S	36 (100)	24 (100)
	R	0	0
Levofloxacin	S	33 (91.6)	23 (95.8)
	R	3 (8.3)	1 (4.1)
Oxacillin	S	26 (72.2)	18 (75)
	R	10 (27.7)	6 (25)
Vancomycin	S	33 (91.6)	24 (100)
	R	3 (8.3)	0
Novobiocin	S	0	24 (100)
	R	0	0
Linzolid	S	34 (94.4)	23 (95.8)
	R	2 (5.5)	1 (4.1)

Table-IV: *Antimicrobial sensitivity pattern of isolated gram-negative organisms.*

Antimicrobial Agents	Sensitivity Pattern	*Pseudomonas sp* No (%)	*Salmonella typhi* No (%)	*Escherichia coli* No (%)	*Klebsiella sp* No (%)
Azithromycin	S	8 (27.5)	14 (82.3)	8 (53.3)	4 (66.6)
	R	21 (72.4)	3 (17.6)	7 (46.6)	2 (33.3)
Amikacin	S	29 (100)	17 (100)	14 (93.3)	6 (100)
	R	0	0	1 (6.6)	0
Ceftriaxone	S	22 (75.8)	14 (82.3)	9 (60)	5 (83.3)
	R	7 (24.1)	3 (17.6)	6 (40)	1 (16.6)
Cefixime	S	19 (65.5)	10 (58.8)	6 (40)	4 (66.6)
	R	10 (34.4)	7 (41.1)	9 (60)	2 (33.3)
Cephradine	S	21 (72.4)	12 (70.5)	7 (46.6)	3 (50)
	R	8 (27.5)	5 (29.4)	8 (53.3)	3 (50)
Ciprofloxacin	S	26 (89.6)	15 (88.2)	7 (46.6)	4 (66.6)
	R	3 (10.3)	2 (11.7)	8 (53.3)	2 (33.3)
Cotrimoxazole	S	17 (58.6)	9 (52.9)	10 (66.6)	4 (66.6)
	R	12 (41.3)	8 (47)	5 (33.3)	2 (33.3)

Gentamicin	S	25 (86.2)	15 (88.2)	12 (80)	5 (83.3)
	R	4 (13.7)	2 (11.7)	3 (20)	1 (16.6)
Imipenam	S	29 (100)	16 (94.1)	15 (100)	6 (100)
	R	0	1 (5.8)	0	0
Levofloxacin	S	26 (89.6)	16 (94.1)	8 (53.3)	5 (83.3)
	R	3 (10.3)	1 (5.8)	7 (46.6)	1 (16.6)

S = Sensitive, R= Resistant

heart, kidneys[11]. In the present study 127 (21%) of the samples revealed growth on culture. This finding is consistent with similar studies where the isolation rate was 27.6%[12]. Our finding is higher in contrast to studies by different workers[13,14], where the isolation rate was 4-10%. The variation in the blood culture positivity may be attributed to the factors like number and amount of blood for culture taken for screen[15]. System and formulation of blood culture medium used for bacterial detection and the prior use of antibiotics by the clinicians are also other factors affecting bacterial isolation.

Most common organisms in all the age group in this study were *Staphylococcus aureus* (28.3%). A study was done in a teaching hospital in Bhubaneswar India where they found *Staphylococcus aureus* as the most common (73%) pathogen[12]. Another study conducted in Bangalore India where they found *Staphylococcus aureus* as the commonest (58.38%) bacterial isolates[16]. Considering sensitivity pattern of *Staphylococcus aureus* isolated in this study, majority were found sensitive to imipenam, amikacin, linzolid and vancomycin. Swain in India showed similar results regarding sensitivity of *Staphylococcus aureus* to these antibiotics[12]. The prevalence of MRSA bacteraemia in this study was 27.7%. This result is consistent with the study where they found 26% MRSA cases[12]. MRSA cases in this study were highly sensitive to imipenam, amikacin, ceftriaxone, gentamycin, vancomycin, linzolid which revealed a sensitivity pattern similar to the study conducted by Swain[12].

Pseudomonas sp. was the second common (22.8%) organism in this study. This finding is in contrast to the result of the study conducted by Mehta et al[13] and Garg et al[17] where they found *Pseudomonas* as the most common organism. Present study showed CoNS as the third common (18.9%) organism of all isolates. This finding is consistent with the study conducted by Sobhani in Iran where they found 15.8% case of CoNS[18]. Fargi in Iran found 37.3%[19] and Sharma in India[16] found 7.45% of CoNS cases in their studies. Although CoNS are the most common isolates associated with blood stream infection in recent years, their role as a cause of morbidity and mortality is difficult to ascertain. Because these organisms commonly contaminate blood cultures, identifying patients with true bacteraemia may be difficult[20]. In this study almost all of CoNS isolates were found sensitive to vancomycin and novobiocin.

CONCLUSION

Among all age groups *Staphylococcus aureus* was the most common organism isolated in this study not the gram negative bacteria. Among them 27.7% of *Staphylococcus aureus* were resistant to oxacillin. This finding highlights the need to trace the origin of this pathogen and find the effective means of controlling its spread.

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Original Article

Age and Diseases of Menopause: A Cross-Sectional Study in Sylhet, Bangladesh

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ABSTRACT

Many studies have been carried out to determine the mean age at menopause in different countries. In Bangladesh the greatest hurdle is the ascertainment of correct age of women causing difficulty in determining the correct age at menopause. The objective of this study was to overcome this hurdle and to determine the mean age at menopause, presenting symptoms and different diseases at menopause in this area of Bangladesh. This cross sectional descriptive study purposively selected 250 women from different hospitals, workplaces and houses in Sylhet, Bangladesh using Voter Identification Cards between January to December 2011. Age at menopause, associated symptoms and diseases were recorded from women who satisfied the inclusion and exclusion criteria. In this study mean age at menopause was determined to be 46 years ranging from 32-55 years and the predominant symptom experienced by the menopausal women was hot flashes (72%). Among the menopausal ladies 8.86% had no associated illness and 91.14% had been suffering from different diseases during the study period. More frequently suffered medical diseases were hypertension (22.4%), osteoporosis (11%), osteoarthritis (11%), diabetes mellitus (10.2%) stroke (9.6%) chronic kidney disease (8%), malignancy in different organs (6.2%), peptic ulcer disease (6.2%), major depressive disorder (5%), ischaemic heart disease (3.8%).

Key words: *Menopause.*

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INTRODUCTION

Women all over the world now have to spend almost $^1/_3{}^{rd}$ of their lifetime in menopause years because average life expectancy is increasing. Over the next decade, approximately 40 million women will experience menopause[1]. Natural menopause was defined according to the World Health Organization (WHO) as at least 12 consecutive months of amenorrhea not due to surgery or other obvious cause, such as extreme weight loss[2].

Age at the natural final menstrual period may be an important risk indicator for subsequent morbidity and mortality. The risk of cardiovascular disease and osteoporosis tend to be higher for women with an earlier menopause[3,4,5,6]. Menopause is very natural part of a woman's life cycle. The human ovaries become unresponsive to gonadotropins with advancing age, and their function declines, so that the sexual cycles disappear. This unresponsiveness is associated with and probably caused by a decline in the number of primordial follicles, which become precipitous at the time of menopause. The menstrual cycle become irregular and usually cease between the ages of 45 and 55 years, thus marking the end of a woman's reproductive life[7]. Clinical symptoms of menopause include vasomotor instability, genitourinary symptoms,

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osteoporosis, increased incidence of bone fractures, increased incidence of thrombo-embolic and ischemic heart disease, and psychological symptoms of anxiety, depression, and memory loss[8]. Reproductive hormonal fluctuations may underlie some of the common symptoms of the perimenopause[9]. Many studies have been carried out all over the world to determine the mean menopausal age of women[10]. In Bangladesh, as the correct age of women is difficult to ascertain, such studies are difficult and may cause error in the results. This is why we made an effort to take only those women into consideration who had documented ages, so as to make a correct estimate of the mean menopausal age, the symptoms and medical disorders of menopause in this area of Bangladesh.

MATERIAL AND METHODS

It was a descriptive cross sectional study on 250 postmenopausal women. Respondents were selected by purposive sampling from different hospitals, workplaces and houses in Sylhet Bangladesh, between January to December 2011. A structured questionnaire was prepared and 250 women were provided with the questionnaire. The questionnaire contained details about the present age, parity, occupation, religion, monthly income and age at menarche, age at menopause, different symptoms and medical diseases experienced at menopause. For the correct estimation of age, Voter Identification Cards were used as a proof, thus taking only documented ages into account. The subjects included, belonged to different socio-economic backgrounds so that generalized results could be obtained. Subjects whose ages were not documented or those who didn't have a 12-months consecutive cessation of menstruation were excluded. Informed consent of each subject was taken and confidentiality of the records was maintained. Analysis was performed by Excel 2007 and SPSS version 17.

RESULTS

Total 250 women were included having 12 months consecutive period of cessation of menstruation. Among them 92% were Muslims and 8% were Hindus. Maximum (94.4%) respondents were domestic workers, 4% heavy worker and 1.6% sedentary worker. Majority 96.8% of the women were married, 2.4% widow and 0.8% divorced. Monthly income found 5000-7000 BDT in 47.2% of respondents and 38.4% had 5-6 children (Table-I).

Table-I: *Distribution of respondents by socio-demographic characteristics.*

Characteristics	No of Respondents (%)
Religion	
Islam	230 (92)
Hinduism	20 (8)
Occupation	
Heavy worker	10 (4)
Sedentary worker	4 (1.6)
Domestic worker	236 (94.4)
Marital status	
Married	242 (96.8)
Widow	6 (2.4)
Divorced/Separated	2 (0.8)
Monthlyincome(BDT)	
<5000	77 (30.8)
5000-7000	108(47.2)
> 7000	65 (26)
Parity	
No child	4 (1.6)
1-2	22 (8.8)
3-4	60 (24)
5-6	96 (38.4)
>6	68 (27.2)

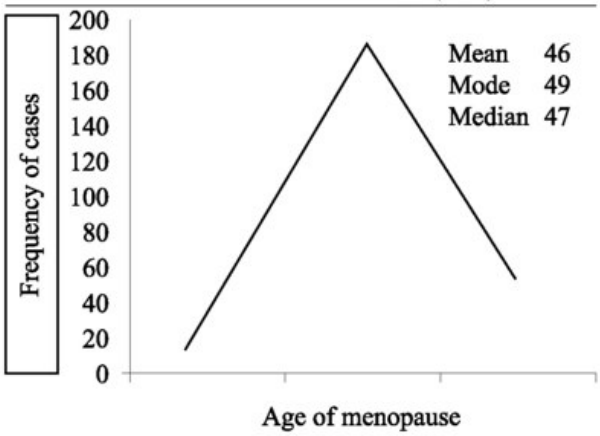

Figure-1: *Distribution of the respondents according to age of menopause.*

Mean menopausal age of these women at menopause was determined to be 46 years ranging from 32 to 55 years (Figure-1). There were many overlapping symptoms experienced by women at menopause but the most predominant symptom was hot flashes that were present in 72% women. Palpitation was present in 7.2% women while 8% had loss of libido and sweating. The other symptoms experienced by women included headaches in 0.8%, anxiety 5%, depression 5% (Table-II).

Table-II: *Frequency of different symptoms after menopause.*

Predominantly Experienced Symptoms	Number (%)
Hot flashes	180 (72)
Sweating	20 (8)
Palpitation	18 (7.2)
Loss of libido	20 (8)
Anxiety	5 (2)
Depression	5 (2)
Headache	2 (0.8)
Total	250 (100)

In this study 8.86% ladies had no associated illness and 91.14% had been suffering from different diseases during the study period. More frequently suffered medical diseases among menopausal women were hypertension (22.4%), osteoporosis (11%), osteoarthritis (11%), diabetes mellitus (10.2%) stroke (9.6%) chronic kidney disease (8%), malignancy in different organs (6.2%), peptic ulcer disease (6.2%), major depressive disorder (5%), ischaemic heart disease (3.8%). Other medical diseases were (6.6%), which included asthma, chronic obstructive pulmonary disease, pneumonia, heart failure, chronic liver disease, generalized anxiety disorder, valvular heart diseases, tuberculosis and pyrexia of unknown origin.

DISCUSSION

In this study mean age of menarche was 12.09 years. This result is lower than a study in France, that found the mean age of menarche was 13.53 years (SD±0.98)[11]. The mean age of menopause in this study has been found 46 years which is higher than India, where the mean age was found to be 44.6 years and 43.55 years in two separate studies[12,13]. In Pakistan, the mean age at menopause has been found to be 49 years in rural women of Lahore[14] and 47 years in three socioeconomic urban groups in Karachi[15]. This result is higher than that our study. The mean age at menopause has been found in USA as 50.6 years[16], in France as 52 years[17], while in the United Kingdom, the mean age of menopause was 50 years 9 months[18]. So, mean age of women in Sylhet, Bangladesh is lower than these countries. The lower age at menopause in this area may be due to social, economic, environmental or genetic factors. There might be some similar factors that affect the menopausal ages in developing countries like Bangladesh, India and Pakistan which need to be explored. The symptoms of menopause also differ in different areas of the world. In our study predominant (72%) symptoms was hot flashes which is nearly similar to a study in Pakistan, that showed hot flashes in 82% of menopausal women[10]. The symptoms observed in our study were very similar to those occurring elsewhere in the world, but the frequency of occurrence of different symptoms vary in different countries[19,20,21]. Little is known about the timing of menopause, which in turn affects long-term disease risk. More frequently suffered medical diseases among menopausal women in this study were hypertension (22.4%), osteoporosis (11%), osteoarthritis (11%), diabetes mellitus (10.2%) stroke (9.6%) chronic kidney disease (8%), malignancy in different organs (6.2%), peptic ulcer disease (6.2%), major depressive disorder (5%), ischaemic heart disease (3.8%). Other medical diseases were (6.6%), which includes asthma, chronic obstructive pulmonary disease, pneumonia, heart failure, chronic liver disease, generalized anxiety disorder, valvular heart diseases, tuberculosis and pyrexia of unknown origin. Another study in Bangladesh, uterovaginal prolapse was found 63.8%, genital malignancies 17.4% and rest (18.8) had other benign disorders which included leiomyoma, pelvic inflammatory diseases (PID), uncontrolled bleeding, urinary tract infections (UTI) and ovarian cysts[22]. This difference may be due to collection of data by the researchers who were working in two different specialities. All women go through menopause after a certain age and menopausal women suffer from different diseases which need specific attention.

CONCLUSION

Menopause is not a time to be dreaded, nor a time to think that an active and full life will be compromised. It is a time to celebrate the natural cycles of a woman's life, and a time to develop lifestyle habits that will provide support for the years to come. Multicentre, big sample size study is recommended which will provide informations that in turn will provide support to the menopausal women.

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JALALABAD MEDICAL JOURNAL

Original Article

Risk Factors which Affect Prolonged Hospital Stay of Neonates Hospitalized with Pneumonia in a Tertiary Care Hospital

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ABSTRACT

The global burden of neonatal pneumonia is huge. The hospital costs are difficult to define. Reduction in the length of hospital stay will not only reduce substantial financial cost but also have other potential benefits e.g. shorter course of antibiotic therapy, enhanced parent-infant bonding and improved lactation. This prospective observational study was carried out in Dhaka Shishu Hospital from July 2009 to June 2010 to find the risk factors which may affect prolonged hospital stay in neonatal pneumonia. A total of 115 neonates who met the inclusion criteria were enrolled in the study. The neonates were managed using a standard protocol. Mean age of the studied neonate was 16.2 ± 5.9 days, mean weight 2857.6 ± 580.6 gm, 58% were male & 42% female, 26% were preterm & 74% were term and majority of them (73%) were from rural areas. Among the neonates, 30 (26%) patients required prolonged hospital stay. Neonatal pneumonia presented with grunting, fever, high alveolar-arterial O_2 gradient, low arterial-alveolar O_2 tension and low pH required prolonged hospital stay.

Key words: *Neonatal pneumonia, Risk factors, Clinical & laboratory parameters.*

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INTRODUCTION

The global burden of neonatal pneumonia is huge and efficient interventions must be targeted at all levels of the health services and community[1]. In India recent estimates in under five mortality suggest that 13% of deaths and 24% of national burden of diseases are due to pneumonia[2]. Autopsy data from Indian studies show that 26 to 34.6% of all neonatal deaths are associated with pneumonia. The clinical incidence of pneumonia during neonatal period varies from 1.5 to 4.5% of all live births[3].

Infants younger than three weeks with respiratory distress always should be admitted to a hospital, and a diagnosis of bacterial pneumonia should be assumed until proved otherwise[4].

Hospital based studies have reported that 20 to 30% of admissions in under fives are due to pneumonia[5]. The optimal length for neonatal pneumonia is unclear, which may be a reflection of the diverse clinical manifestations of this disorder. Determining the duration of antibiotic therapy for neonatal pneumonia poses a dilemma for the clinicians[6].

The hospital costs are difficult to define. Reduction in the length of hospital stay will not only reduce substantial financial cost but also have other potential benefits such as shorter course of antibiotic therapy, enhanced patient-infant bonding and improved lactation. Keeping these in mind, the objective of this study was to determine the clinical and laboratory factors which affect the prolonged duration of hospital stay of neonates admitted with pneumonia.

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MATERIALS AND METHODS

This was a prospective observational study carried out in Dhaka Shishu (Children) Hospital from July 2009 to June 2010. Pneumonia was diagnosed when neonates presented with any of the respiratory symptoms like rapid, noisy or difficult breathing, respiratory rate ≥ 60/min, severe chest indrawing, grunting or cyanosis, cough and maternal fever, foul smell liquor, prolonged

rupture of membrane (PROM) in case of neonates of less than 72 hrs of age. Neonates having congenital heart disease, congenital malformation of respiratory or GI tract, meconium aspiration syndrome, TTN, RDS were excluded from the study.

A structured questionnaire was used for recording all the information. After taking written consent, all neonates who fulfilled the inclusion criteria were evaluated in a calm and quiet state. Respiratory rate (RR) for 1 minute was recorded. Poor-feeding, poor-sucking, lethargy, poor reflexes, hypo or hyperthermia, abdominal distension, prolonged capillary refill time (CRT>3 sec), heart rate (HR), grunting, cyanosis were recorded. Among investigations CBC, CRP, blood for C/S were done in all cases. Measurement of FiO_2, O_2-saturation by pulse oximeter, alveolar-arterial oxygen gradient (PAO_2-PaO_2) and arterial-alveolar oxygen tension ratio (PaO_2/PAO_2) were calculated. Daily follow up like RR, HR, temp, SPO_2, cyanosis was observed and change in antibiotic was done when the clinical condition deteriorated or did not improve after 48 hours of treatment. All neonates were followed up to out-come.

RESULTS

In this study 115 neonates hospitalized with pneumonia were selected according to inclusion criteria during the study period from July 2009 to June 2010. The mean age of the neonates was 16.2±5.9 days with majority older than 7 days; male were 58% and female 42% with male, female ratio of 1.38:1. Mean weight was 2857.6±587.6 gm and 25% were low birth weight (LBW). Preterm neonates were 26% and majority were 73% from rural area (Table-I). The presenting features (multiple response) were mostly rapid noisy breathing 106 (92.17%), lethargy 99 (86.08%), cough 98 (85.22%), cyanosis 31 (26.95%), grunting 23 (20%), hyperthermia 14 (12.17%) [Figure-1].

Blood film showed normocytic normochromic picture in 65.2%, macrocytic normochromic 14.8%, others 20%, chest X-ray showed normal in 2.6%, nodular coarse patchy opacity in 47.8%, diffuse haziness or granularity in 47%, sub lobar consolidation in 1.7%. Blood culture didn't show any growth in any samples.

Arterial blood gas analysis was normal in 89.5% and respiratory acidosis in 10.5%, CRP was positive in 48.7% and negative in 51.3% (Table-II).

Prolonged hospital stay was required in neonates who presented with grunting and fever (Table-III).

Low O_2 saturation, high alveolar-arterial O_2 gradient, low arterial-alveolar O_2 tension and low pH were significantly associated with prolonged hospital stay (Table-IV).

Table-I: *Demographic characteristics (n=115).*

Baseline Characteristics	Frequency	Percentage
Age (Days)		
1-7	11	9.6
8-12	24	20.9
13-18	31	27
19-28	49	42.6
Mean (±SD)	16.2 (SD ± 5.9)	
Range	3-27	
Sex		
Male	67	58
Female	48	42
Gestational Age		
Preterm	31	26
Term	84	74
Weight (Grams)		
1700-2500	30	26.1
2501-3000	43	37.4
3001-3500	29	25.2
3500	13	11.3
Mean (±SD)	2857.6 (SD ± 580.6)	
Range	1785-4500	

Figure-1: *Presenting complaints of pneumonia cases (multiple responses).*

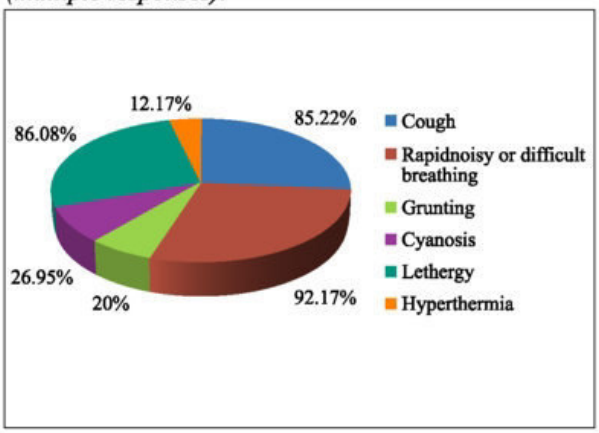

Table-II: *Laboratory parameters of the patients.*

Investigations		Number	Percentage
Blood film	Normocytic normochromic	75	65.2
	Macrocytic normochromic	17	14.8
	Others	23	20
Chest X-ray	Normal	03	2.6
	Nodular coarse patchy opacity	55	47.8
	Diffuse haziness granularity	54	47
	Sub lobar consolidation	02	1.7
	Non specific pul infection	01	0.9
Blood culture	No growth	115	100
	Growth	00	00
Arterial blood gasanalysis	Normal	103	89.5
	Respiratory acidosis	12	10.5
CRP	Positive	56	48.7
	Negative	59	51.3

Table-III: *Association between hospital stay and clinical features.*

Clinical parameter		Hospital Stay >4 days	Hospital Stay <4 days	Total	Relative Risk	p value
Cough	Yes	69	29	98	1.29	0.77
	No	11	6	17	(0.43-3.84)	
Rapid noisy or difficult breathing	Yes	74	32	106	1.15	1
	No	6	3	9	(0.27-4.91)	
Grunting	Yes	20	3	23	3.56	0.04
	No	60	32	92	(0.9-16.33)	
Cyanosis	Yes	8	9	31	1.22	0.15
	No	72	26	84	(0.99-1.5)	
Lethargy	Yes	71	28	99	1.97	0.26
	No	9	7	16	(0.67-5.8)	
Fever	Yes	4	10	14	0.13	
	No	76	25	101	(0.03-0.45)	0.001

Table IV: *Association between prolonged hospital stay and arterial blood gas analysis, alveolar-arterial oxygen gradient, arterial alveolar oxygen tension.*

Parameters	Hospital stay >4 days Mean	Hospital stay >4 days (±SD)	Hospital stay <4 days Mean	Hospital stay <4 days (±SD)	p value
O_2 Saturation	90.83	(±5.73)	92.78	(±2.37)	0.06
PaO_2	98.63	(±14.79)	99.75	(±18.78)	0.91
Alveolar arterial oxygen gradient	13.71	(±3)	15.03	(±2.37)	0.02
Arterial alveolar oxygen tension	0.83	(±0.11)	0.84	(±0.02)	0.001
pH	7.37	(±0.07)	7.38	(±0.01)	0.003
PO_2	85.89	(±12.16)	87.21	(±8.1)	0.13

DISCUSSION

Acute lower respiratory tract infection is a leading cause of morbidity and mortality in under five children in developing countries[7]. So clinical and laboratory factors which affect the prolonged stay in hospital in neonatal pneumonia should be addressed appropriately thus reduction in treatment cost as well as early and enhanced parent infant bonding can be established[8]. In this study, the mean age at presentation was 16.23±5.91 days which are comparable to a study[9] in the United States in which the median age was 18.9 days (SD±4.6). In another study[10] it was shown that the mean age at presentation was also within 2 weeks. We found more male patients (58%) than female (42%), the mean weight in this study was 2857.6±580.6 gm which is comparable to a study in Bangladesh[11].

In our study, chest X-ray findings were nodular coarse patchy opacity in 47.6%, diffuse haziness in 46.5%, sublobar consolidation in 2%, non specific finding in 1% and normal in 3% cases. Benjamin[12] described chest X-ray finding as diffuse reticular nodular appearance with focal or coarse densities which is comparable to our study. In another study by Mathur[13], chest X-ray finding were alveolar infiltrates in 44.6%, sub-lobar consolidation in 17.4%, lobar consolidation in 9.7%, diffuse haziness in 11.6%, opacity with reticulogranular pattern in 1.9% and clear in 14.5%.

Blood culture was negative in all cases of our study which is comparable to a WHO study done in Kenya that showed, majority cases were not associated with bacteremia[1]. In another large study it became evident that routine surveillance culture contribute little to the prediction and management of pneumonia and may be even misleading[9].

In this study, 30 patients (26%) required prolonged hospital stay and it is evident that prolonged hospital stay was associated with the clinical features like grunting, fever and abnormal blood gas analysis like low O_2 saturation, increased alveolar-arterial O_2 gradient, decreased arterial-alveolar O_2 tension and decreased pH. Williams[6] et al, experienced that many neonates with radiologically and clinically diagnosed pneumonia responded promptly to therapy and continuing to administer antibiotic therapy for 7 days seemed excessive. There they hypothesized that for selected neonates diagnosed with pneumonia, 4 days of antibiotic therapy would be comparable to 7 days and thus unnecessary prolonged hospital stay could be avoided except some selected neonates that may need prolonged hospital treatment.

CONCLUSION

This study concluded that neonates hospitalized with pneumonia having grunting, fever, abnormal blood gas parameters like low O_2 saturation, increased alveolar-arterial O_2 gradient, decreased arterial-alveolar O_2 tension and decreased pH required prolonged hospital stay.

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JALALABAD MEDICAL JOURNAL

Review Article

Role of Troponin-I in Diagnosis of Myocardial Infarction

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ABSTRACT

In the year 2000 the European Society of Cardiology and the American College of Cardiology recognized the pivotal role of biomarkers and made elevations in their levels the "cornerstone" of diagnosis of acute myocardial infarction. Cardiac troponin-I and T had supplanted CK-MB as the analyses of choice for diagnosis. In this review, we discuss the science underlying the use of troponin biomarkers, how to interpret troponin values properly and how to apply these measurements to patients who present with possible cardiovascular disease.

Key words: *Troponin-I, Myocardial infarction.*

[Jalalabad Med J 2013; 10(2): 72-76]

Structure and properties of troponin-I:

Troponin-I is responsible for inhibition of the actomyosin ATPase[1]. Three isoforms of troponin-I have been described for striated muscle. Two isoform share characteristic for skeletal fibers (for fast and slow skeletal fibers) and one isoform for cardiac muscle[2,3]. Troponin-I consists of 181-211 amino acid residues, and the cardiac isoform is larger due to the presence of an additional approximately 30-membered N-terminalpeptide[3].

Genetics:

The troponin-I isoforms are coded by three different genes. It is known that the gene of human cardiatroponin-I is located on the 19th chromosome[4,5] and consists of eight axons. Both the cardiac and the slow skeletal isoforms of troponin I are expressed in the heart of the human fetus. After birth the expression of the slow skeletal isoform is blocked, whereas the expression of the cardiac isoform is enhanced. The final result of this switching is exclusive expression of the cardiac isoform of troponin-I by the ninth month of life[6].

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The biology of troponin:

The 3-unit troponin complex (troponin-I, T and C) along with tropomyosin is located on the actin filament and is essential for the calcium-mediated regulation of skeletal and cardiac muscle contraction[7].

The skeletal isoforms present in the fetal heart are replaced by cTnI and cTnT late during fetal development[8,9]. cTnI is not expressed in skeletal muscle or other tissues during development[9] or in response to degenerative or regenerative muscle disease processes[10]. Thus, it is unlikely to be re-expressed in damaged tissues.

Role of troponin in acute myocardial infarction:

In the year 2000 a joint committee of the European Society of Cardiology (ESC) and the American College of Cardiology (ACC) issued new criteria that acknowledged, elevations in biomarkers were fundamental to the diagnosis of acute myocardial infarction[11,12], because symptoms may be atypical or nonexistent and electrocardiogram changes may be absent or nonspecific[13]. By this time, cardiac troponin had supplanted CK-MB as the biomarker of choice for the detection of cardiac injury[14].

Like CK-MB, cardiac troponin concentrations begin to rise 4-6 hours after the onset of symptoms. Thus, a blood sample should be obtained on admission and

again 6-9 hours later. Peak values occur at 18-24 hours after symptom onset. If it is difficult to ascertain the onset of symptoms, sampling should be based on the time of presentation. Values should be available within 60 minutes[11,12]. Troponin elevations reflect myocardial damage but do not indicate its mechanism. In the absence of clinical evidence that the injury is due to coronary ischemia, other causes for cardiac damage should be sought.

Prognostic value of troponin in acute coronary syndromes:

Prognosis and diagnosis are different, and thus troponin elevations may in some situations help to make a diagnosis but may not be prognostic. The reason for this may be that inadequate studies have been done or that the effect is too small to detect, if it exists at all. Nonetheless, in almost all series, even minor elevations in troponin levels presage short and long-term events[14]. In patients with acute coronary syndromes, elevated levels of cTnI or cTnT are adverse prognostic indicator (Figure-1), even after adjustment for clinical predictors and electrocardiogram findings[15,16].

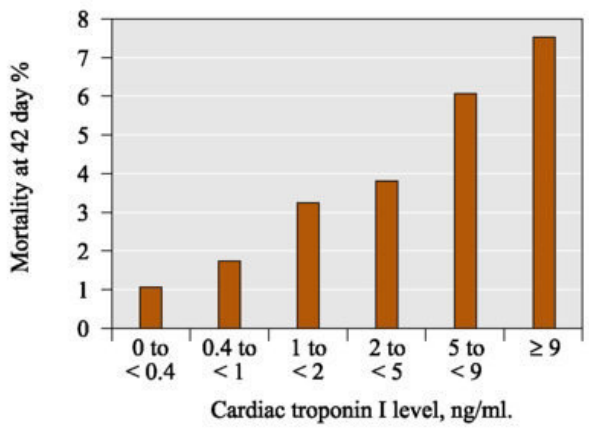

Figure-1: *Mortality rates according to level of cardiac troponin-I at baseline.*

Since more severe disease may benefit from newer and more aggressive interventions, troponin elevations identify a group of patients who will be benefited from therapy with delteparin and enoxaparin, studies of which showed a reduction in both mortality and recurrent myocardial infarction[17,18], no benefit was observed among patients without elevated troponin levels.

Elevated troponin levels on admission are also of value for patients with ST-segment elevation myocardial infarction (STEMI). Regardless of therapy, an elevated troponin level is an independent predictor of death at 30 days and during long-term follow-up[19,20]. This is because elevations predict incomplete epicardial and more severely impaired myocardial perfusion despite normal epicardial flow[21].

Troponin and infarct size:

Infarct size can be estimated from the troponin value measured at 72 hours. The data are stronger for this approach with cTnT than with cTnI[22,23], which suggest that the cTnT level measured at 72 hours is a good estimate of scintigraphic infarct size whether patients were reperfused or not[23,24]. The estimates of infarct size are superior to those provided by CK or CK-MB.

Troponin after percutaneous coronary interventions:

After percutaneous coronary interventions (PCIs), increases in troponin levels above the 99th percentile are indicative of cardiac cell injury and thus fulfill the definition of acute myocardial infarction[11,12]. This may be a situation in which diagnosis and prognosis are different. The mechanisms by which PCIs cause cardiac damage are poorly defined despite the adverse consequences[25,26]. Thus, whether minor troponin elevations have similar prognostic influence is unclear. It may depend on the cause of the elevation. Some degree of cardiac injury may be necessary to accomplish an adequate procedure, and in that situation a minor amount of cardiac injury may not be adverse[27,28]. In other cases, elevated troponin levels may reflect more severe or diffuse disease[40].

Troponin after cardiac surgery:

Factors related to cardiac surgery that contribute to myocardial damage include the duration of cross clamping and cardiopulmonary bypass; potential occlusion of a graft; the nature, temperature and adequacy of the cardioplegia; the use of cardiopulmonary bypass itself; direct trauma to the heart; coronary artery or venous graft embolism and other complications of the procedure[29].

Some damage is unavoidable. The relevant clinical issue is to define whether the degree of myocardial damage is "clinically significant"[29]. Biomarkers cannot determine the mechanism of injury[30]. However, irrespective of the mechanism, the higher the value after surgery, the greater the damage[31,32] and the worse the prognosis[33,34]. Some have suggested that late-peaking elevations are indicative of graft occlusion[35].

Troponin and renal failure:

Troponin is the biomarker of choice for detecting cardiac injury in patients with renal failure, including those with end-stage renal disease (ESRD) receiving long-term dialysis[36,37].

In a study by Ooi and colleagues[38], minor elevations in troponin levels were invariably associated with pathological evidence of myocardial damage in patients with and without renal failure. Apple and colleagues[39] evaluated survival among 773 ESRD patients. Those with elevated cTnT levels (defined by the 99th percentile cut-off value) had an increased risk of death after 1, 2 and 3 years of follow-up. Increases in cTnT and cTnI levels in ESRD patients showed a 2 to 5 fold increase in mortality, with greater numbers of patients having an increased cTnT. These data have been confirmed in subsequent studies[40].

Conditions in which troponin levels may be elevated without overt ischemic heart disease are[40]:

- Trauma (eg, contusion, ablation, pacing, ICD (Implanted cardioverter defibrillator) firings, cardioversion, endomyocardial biopsy, cardiac surgery).
- Congestive heart failure, acute and chronic.
- Aortic valve disease and hypertrophic obstructive cardiomyopathy with significant left ventricular hypertrophy.
- Hypertension.
- Hypotension, often with arrhythmias.
- Noncardiac surgery without complications.
- Renal failure.
- Severe asthma.
- Critical illness, especially diabetes, respiratory failure, hemolytic uremic syndrome.
- Drug toxicity (e.g. adriamycin, 5-fiuorouracil, herceptin, snake venoms), hypothyroidism.
- Coronary vasospasm, including apical ballooning syndrome.
- Inflammatory disease (e.g. myocarditis. parvovirus B19 infection, Kawasaki disease, myocardial extension of bacterial endocarditis).
- Percutaneous coronary intervention without complications.
- Pulmonary embolism, severe pulmonary hypertension.
- Sepsis.
- Burns, especially if total body surface area affected is >30%.
- Infiltrative diseases, including amyloidosis, haemochromatosis, sarcoidosis and scleroderma.
- Acute neurologic diseases, including cerebrovascular accident and subarachnoid bleeding.
- Rhabdomyolysis with cardiac injury.
- Transplant-related vasculopathy.

CONCLUSION

Troponin-I, a sophisticated biochemical marker have become increasingly important in the investigation of myocardial injury. Due to great sensitivity and specificity for myocardial cell damage, cardiac troponin-I have been considered as the "gold standard" for the diagnosis of acute myocardial infarction.

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JALALABAD MEDICAL JOURNAL

Case Report

Lowest Birth Weight Baby That Survived In JRRMCH

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ABSTRACT

Low birth weight infants, born after a preterm birth or secondary to intrauterine growth restriction (IUGR), account for much of the increased morbidity, mortality, and cost. The substantial improvement in newborn survival in Bangladesh over the past several years is mostly due to better access to improved neonatal care for low birth weight infants. Here we report a neonate of only 750 gm that survived and was discharged after 25 days treatment in the neonatal ward of Jalalabad Ragib-Rabeya Medical College Hospital (JRRMCH), Sylhet.

Key words: *Neonate, Low birth weight, IUGR.*

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INTRODUCTION

In spite of consistent efforts to improve the quality of maternal and child health, more than 20 million low birth weight babies are born every year throughout the world. Fifty percent of all perinatal deaths are directly or indirectly related to low birth weight (LBW)[1]. Low birth weight is defined as a birth weight less than 2500 gm, very low birth weight (VLBW) babies are defined as birth weight less than 1500 gm, extremely low birth weight (ELBW) babies are defined as birth weight less than 1000 gm and babies with birth weight less than 750 gm are considered as incredibly low birth weight babies. According to the National Low Birth Weight Survey (2003-2004), LBW rate is quite high (36%) in Bangladesh. Primary causes of LBW are premature birth (born less than 37 weeks of gestation) and IUGR. The majority of the LBW babies in developing countries are IUGR[2], and it is due to low maternal weight gain during pregnancy, inadequate prenatal care and iron deficiency anaemia[3,4,5,6]. More a baby is premature more is the chance of mortality. It is a challenge for the pediatricians to save these babies and discharge them in a healthy condition. And it is now possible because of advancement in medical technology and improved health care facilities. The baby who is going to be reported here is one of the examples of great success in the neonatal management of JRRMCH.

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CASE REPORT

A one day old female baby, 3rd issue of her nonconsanguineous parents got admitted into Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet with the complaints of small sized baby with preterm delivery. The baby was delivered at 28 weeks of gestation (by date) at home by vaginal delivery due to premature rupture of membrane. Mother was 20 years old, was on regular antenatal check up and had history of one abortion. On examination, the baby was pale, dyspnoeic, hypothermic, fontanelles were open, heart rate was 150 beats/min, respiratory rate was 65 breaths/min, primitive reflexes were poor and there was no apparent congenital anomaly. Systemic examination revealed normal. Random blood sugar (RBS) was 33 mg/dl and SPO_2 was 80% without

oxygen. On anthropometric measurements, weight was 750 gm, length was 35 cm, OFC was 27 cm. She was treated with nothing per oral, oxygen inhalation, I/V fluid, inj. ceftazidime, inj. vitamin K and the baby was kept in incubator. On 4th day, the baby developed jaundice. Phototherapy was started and inj. amikacin was added. NG tube feeding was started on 5th day and weaning of oxygen was done. On 7th day of her admission, the baby developed hyperglycemia; complete blood count showed features of sepsis and serum electrolyte report showed hypokalemia. Antibiotic was changed to inj. meropenem. Blood transfusion was done two times as hemoglobin level was low. NG feeding was increased gradually. On 9th day oxygen was stopped. On 13th hospital day vitamin E & folic acid were also added. On 16th day of her age

Figure-1: *Baby at $1^1/_2$ month.*

multivitamin drop was added and the baby was shifted to bed from incubator. The baby developed sucking reflex and oral feeding was started by dropper on 18th day in addition to NG feeding. The baby improved and was discharged at her 25 days with body weight 1100 gm and head circumference 29 cm with both NG tube and oral feeding, vitamin E capsule, folic acid, and multivitamin drop and was advised for follow up after 15 days. After 15 days on her first follow up visit at the age of 1 month and 10 days, the baby was found active, alert with good sucking reflex. Her weight was then 1500gm. At 6 months of her age, her weight was 4200 gm; she was found active, alert and doing well. Her hearing screening and eye examination were found to be normal.

DISCISSION

Preterm birth is the most important single determinant of adverse outcome of pregnancy. Child birth before 37 weeks of gestation is usually associated with inadequate fetal growth, premature rupture of membrane (PROM), multiple pregnancy, placenta previa, placental abruption, fetal congenital malformations, abnormal fetal lie and severe maternal disease. Multiple pregnancies are 15 times more frequent among preterm. For any given duration of gestation the low the birth weight, the higher the neonatal mortality, for any given weight and shorter the gestational duration higher the neonatal mortality[7,8]. The major problems of extremely low birth weight infants are short term problems like respiratory distress syndrome (RDS), apnoea of prematurity, feeding

Figure-2: *Baby at 6 months.*

intolerance, necrotising enterocolitis (NEC), growth failure, immune deficiency, nosocomial infections, intraventriculer haemorrhage (IVH), periventricular leucomalacia, retinopathy of prematurity (ROP), hypotension, patent ductus arteriosus (PDA), water and electrolytes imbalance, acid base disturbances, anaemia of prematurity. Long term problems[9] are bronchopulmonary dysplasia (BPD), failure to thrive (FTT), cerebral palsy (CP), hearing loss, retinal detachment, blindness etc. The National Institute of Child Health and Human Development suggested that the following four factors should be considered in addition to gestational age when determining the likelihood of favorable outcome of a baby in intensive care[8]:

* Female sex has more favorable outcome.
* Exposure to antenatal corticosteroids with favorable outcome.
* Single baby birth has a favorable outcome.
* Birth weight increments of 100g each, add to favorable outcome potential.

In spite of huge problem associated with extreme LBW baby morbidity and mortality of these babies has been decreased to a great extent in the last two decades, because of increased understanding of neonatal physiology and availability of modern technology, use of new therapies such as surfactant in the management of babies admitted in NICU[10].

The baby that we are reporting was a female and it was a singleton baby, all these favorable factors as well as appropriate neonatal services have favored survival of the baby.

CONCLUSION

It is the time for the pediatricians to concentrate to the treatment of LBW neonates because now a day's many of these neonates can be survived even in a low resources country like Bangladesh.

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JALALABAD MEDICAL JOURNAL

Case Report

Abdominal Scar Endometriosis after Caesarean Section: A Case Report

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ABSTRACT

Endometriosis is defined as the presence of functioning endometrial tissue outside the uterine cavity. The most common sites of involvement in decreasing order of frequency are the ovaries, pelvic peritoneum, deep pelvic sub peritoneal space, the intestinal system and the urinary system. Scar endometriosis is a rare disease and difficult to diagnose. It mostly follows obstetrical and gynaecological surgery. This index patient presented with a painful lump on the pfannestiel incision one year after caesarean section. Preoperative diagnosis was made by fine needle aspiration of the mass. Surgical excision of mass was performed and the patient was discharged symptoms free.

Key words: *Abdominal scar, Endometriosis, Surgical excision.*

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INTRODUCTION

Endometriosis was first described by Rokitansky in 1860 and was defined as the presence and proliferation of the endometrium outside the uterine cavity[1]. Endometriosis occurs in 10% of female population and most frequently in pelvic organ and peritoneum. The prevalence of histologically proven endometriosis in scars is 1.6% but the actual incidence of abdominal wall endometriosis is unknown[2]. Scar endometriosis is a rare condition and difficult to diagnose[3]. Development of endometriosis on a surgical scar may have very late onset after the surgery and its diagnosis is often mistaken as a suture granuloma, incisional hernia, abscess or hematoma[4]. The most common site is a caesarean section scar. Endometriosis, in patients with scars, is more common in the abdominal skin and subcutaneous tissue compared to muscle and fascia. Endometriosis involving only the rectus muscle and sheath is very rare[5]. The simultaneous occurrence of pelvic endometriosis with scar endometriosis has been found to be infrequent[6]. Scar endometriosis is rare and difficult to diagnose, often confused with other surgical conditions[7].

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CASE REPORT

A 22 yrs old female patient presented with a painful lump on the lateral aspect of a pfannenstiel incision 1 year after a caesarean section. The lump was associated with pain but no discharges. Abdominal examination revealed a lump of about 3x3 cm, firm, fixed with muscle and it was tender. It was initially managed by conservative management however, the abdominal wall lump persisted. Fine needle aspiration cytology (FNAC) confirmed the initial suspicion of scar endometriosis. The patient was posted for a wide local excision of the abdominal wall lump. The lump was about 3x3 cm, firm and confined to the subcutaneous tissue and the external oblique aponeurosis. Wide excisions with clear margins were performed. At operation an elastic mass 4×3 cm beneath the external oblique aponeurosis was resected. There was no communication between mass and peritoneal cavity. Postoperative period was uneventful. Histopathology showed fibroadipose tissues with interspersed glands and stroma of endometriosis which confirmed the diagnosis of endometriosis abdominal wall scar

(Figure-3). The patient was discharged after removal of all stitches and was symptoms free.

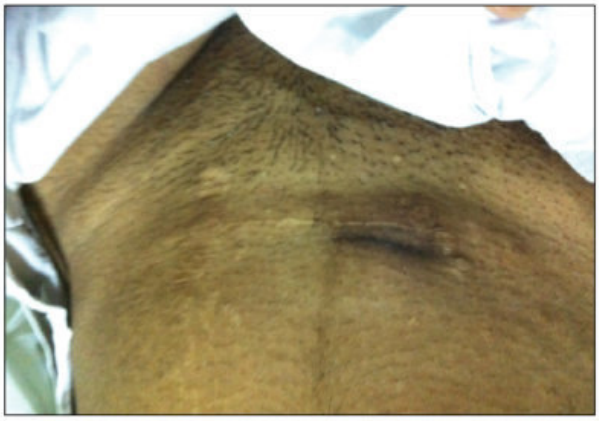

Figure-1: *Preoperative scar where endometriosis developed.*

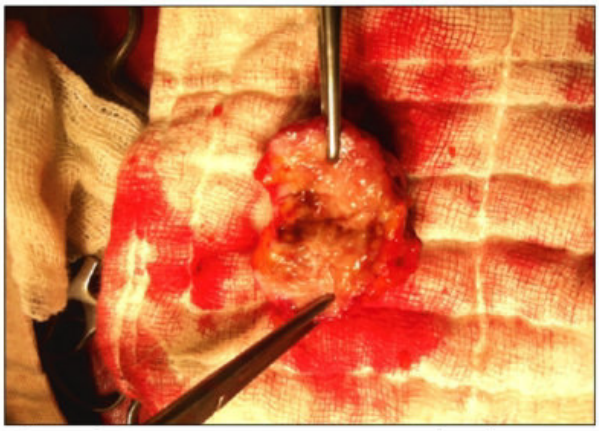

Figure-2: *Postoperative cut section of endometriotic tissue.*

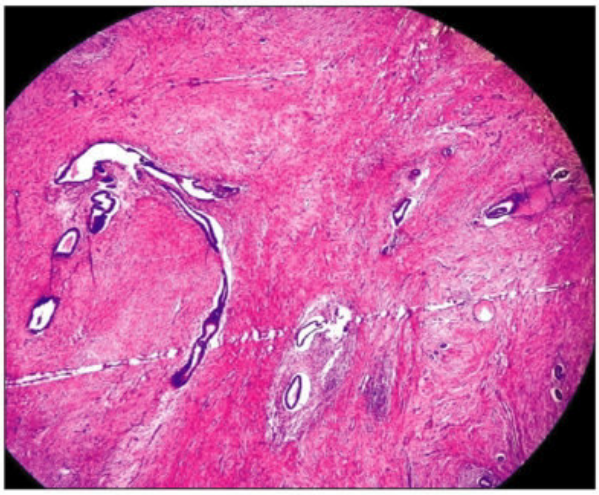

Figure-3: *Microphotography of endometrial stroma and gland formations.*

DISCUSSION

Endometriosis is the presence of functioning endometrial tissue outside the uterine cavity, whereas endometrioma is a well-circumscribed mass. The various sites for extra pelvic endometriosis are bladder, kidney, bowel, omentum, lymph nodes, lungs, pleura, extremities, umbilicus, hernial sacs, and abdominal wall. Endometriosis involving the abdominal wall is an unusual phenomenon which should be considered in the differential diagnosis of abdominal wall masses in women. The usual clinical presentation is a painful nodule in a parous woman with a history of gynecological or obstetrical surgery[7]. But few case reports are there following appendicectomy, in the laperoscopic trochar tract and amniocentesis needle tract. The intensity of pain and size of nodule vary with menstrual cycle[8]. The incidence of abdominal scar endometriosis following hystrectomy is 1.08 to 2%, whereas after caesaren section the incidence is .03 to 0.4%. As the early decidual cell has more pleuripotential capabilities there is higher incidence of abdominal scar endometriosis following hysterotomy[8]. Several mechanisms can explain the incidence of scar endometriosis. Direct implantation of endometral cell at the time of the operation and subsequently stimulated by estrogen to produce endometriomasis the dominant explanation. Lack of secured closer of parietal and visceral peritoneum during caesarean section and reduced care to avoid dissemination of endometrial cell may also be associated with endometriosis at the surgical scar[9]. Time interval between operation and presentation has varied from 3 months to 10 years in different series. In a study by Celik et al, a case was reported after two years of the initial operation[5].

The development of intra pelvic endometriosis may involve retrograde menstruation, maturation of extra uterine primordial cell remnants of embryogenesis and hematologic or lymphatic spread of endometrial cells. Extra pelvic endometriosis in the lung, skin, and extremities not associated with surgical violation of the uterus is believed to be the result of hematogenous or lymphatic spread of endometrial tissue[10]. This theory is convincingly demonstrated by experiments in which normal menstrual effluent transplanted to the abdominal wall resulted in subcutaneous endometriosis. In clinical practice, its occurrence has been well documented in incisions of any type where there has been possible contact with endometrial tissue, including episiotomy, hysterotomy, ectopic pregnancy, laparoscopy, tubal ligation, and cesarean section[11].

The diagnosis is mainly based on clinical grounds.

Other diagnostic modalities include FNAC, ultrasound with colour Doppler, CT scan and MRI. MRI is more useful modality for pre-surgical assessment of deep pelvic endometriosis, infiltration of abdominal wall muscle and subcutaneous tissue but expensive[12]. In this case only FNAC was enough for the diagnosis.

The treatment of choice is wide surgical excision to healthy margins, which is diagnostic and therapeutic at the same time. The presence of residual endothelial tissue is associated with recurrences. In patient whom a large defect remains, mesh can be used for repair. Medical treatment with the use of progestogens, oral contraceptive pills, and danazol is not effective and gives only partial relief of symptoms and does not ablate the lesion. Moreover due to side effects of medical treatment such as amenorrhea, weight gain, hirsutism, and acne, compliance is unlikely. Recently, there have been reports of the use of the gonadotrophin agonist (Leuprolide acetate), but it has been found to provide only prompt improvement in symptoms with no change in the lesion size[13].

Good surgical techniques and proper care during cesarean section may prevent scar endometriosis. It has been suggested that at the end of surgery (especially manipulations of uterus and tubes) wound should be cleaned thoroughly and irrigated vigorously with high jet solution before closure[14].

Malignant change of endometriosis in a cesarean scar is rare[9]. Long-standing recurrent scar endometriosis can undergo malignant changes and clinicians should be aware. Only 21.3% cases of malignant transformation of endometriosis occur at extra gonadal pelvic sites and 4% of cases in scars after laparotomy[15]. Follow up of endometriosis is important because of the chances of recurrence, which may require re-excision. In cases of continual recurrence, possibility of malignancy should be ruled out. Hence, good technique and proper care during cesarean section may help in preventing endometriosis[15].

CONCLUSION

One should have high index of suspicion of scar endometriosis when a woman presents with a painful swelling in the abdominal scar especially with a history of previous gynecological or obstetrical surgery. This condition can be confused with other surgical conditions. Efforts should be made to make a preoperative diagnosis with the help of imaging techniques and FNAC. Medical treatment is not helpful. Wide excision is the treatment of choice. Patient should be followed-up for recurrence.

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JALALABAD MEDICAL JOURNAL

Case Report

Ileocaecal Actinomycosis: An Unusual Presentation: A Case Report

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ABSTRACT

Actinomycosis may appear as an abdominal mass and/or abscess. Actinomyces spp cause a chronic suppurative, granulomatous disease which is characterized clinically by extensive abscess formation, recurrent draining of sinuses and fistulae and histologically by the presence of the so-called "sulphur granules". Its varied presentations are usually considered to represent malignancy rather than an infective process and were once described as 'the most misdiagnosed disease'. The patient was a 24-year old young man presented with right lower abdominal pain and a palpable mass in the right iliac fossa. Clinical examination and investigations suggested the diagnosis of appendicular mass/abscess. He required emergency laparotomy. Upon laparotomy, a malignant tumour like mass was found with extensive posterior and lateral wall involvement. A limited colectomy was performed considering palliative measure in advanced malignancy. The diagnosis was reversed, when histopathology revealed multiple foci of suppuration with amorphous structure in the centre of suppuration resembling sulphur granules of actinomyces israelii. Preoperative diagnosis of abdominal actinomycosis is difficult. An accurate diagnosis is always obtained in a histological or microbiological examination, often requiring surgical resection. Recognition is important because successful treatment requires combined surgery and prolonged penicillin treatment. Though infection accompanying an actinomycotic organism is relatively rare, the possibility of such an infection should be kept in mind because the organism is known to be commensal in the oral cavity, lungs and intestinal tract.

Key words: *Abdominal actinomycosis, Abdominal mass.*

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INTRODUCTION

Actinomycosis is an anaerobic infection caused by *Actinomycetes*, which are gram positive, non-spore-forming, bacterias, part of normal flora of the oral cavity, the gastro-intestinal system, female genital tract and the bronchus[1]. There are six types of *Actinomyces* that cause actinomycosis in humans[2]. *A. israelii* is the most common pathogenic species. The organisms have a low virulence potential and cause disease only when the normal mucosal barrier is broken, leading to formation of chronic suppurative, granulomatous disease, which is characterized clinically by extensive abscess formation, recurrent draining sinuses and fistulae or a mass lesion[3]. The areas of suppuration are surrounded by fibrosing granulation tissue, which gives the surface overlying the involved tissues a hard or woody consistency. The histological hall-mark is the presence of so called "sulphar granules"[1].

Actinomycosis has three major forms of clinical manifestations: cervico-facial (50-65%), abdominal (20%) and thoracic (15%). The overall incidence of registered cases of actinomycosis is decreasing. Abdominal-pelvic actinomycosis, however are increasing in frequency and is associated with abdominal surgery (such as appendicectomy), bowel perforation or trauma[4]. In addition, the presence of a longstanding intrauterine device (IUD) is a reported risk factor in young women[5]. The abdomen is the most frequent site for actinomycosis and when it presents as an abdominal tumour, in the majority of cases, the indolent clinical course together with the malignant like

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appearance at imaging, there is a delay in the diagnosis.

CASE REPORT

A male patient aged 24 years was admitted with the symptoms of migratory right lower abdominal pain for 4 days which was initially in the periumbilical region and associated with anorexia, nausea but no vomiting or fever, he also noticed a lump in the same region since last 1 day. He had no complaints about his bowel and bladder habit. There was no history of previous attack. Physical examination revealed an anxious, mildly dehydrated patient. Temperature was 99^0 F, pulse-92/min, BP-130/80 mm Hg. Abdomen was normal in contour; with no visible peristalsis or scar mark. There was localized muscle guarding and tenderness in the right iliac fossa. A lump of about 4x4 cm size was palpable in the right iliac fossa, which was firm in consistency, fixed with the anterior abdominal wall, overlying skin temperature was raised, bowel sounds were normal. Laboratory values revealed a leucocytosis of 12,400/mm3 with 80% neutrophils. Haemoglobin level was 12.4gm/dl. Other laboratory findings were within normal limits. Ultrasonography identified a mixed echogenic lesion with septation and cystic changes measuring about 3x2.2 cm in right iliac fossa. The impressions were: a) Appendicular abscess b) Mild collection in RIF c) UTI. Emergency exploratory laparotomy was started by giving a right paramidian incision under general anaesthesia. A huge mass of about 12cm in diameter, found in the right iliac fossa, involving the terminal ileum, caecum and which was densely adherent with the lateral abdominal wall. For the suspicion of advanced malignancy a limited resection including removal of terminal ileum, caecum and ascending colon with ileo-colic anastomosis was done. Wound was closed in layers with keeping a drain tube in situ after proper haemostasis.

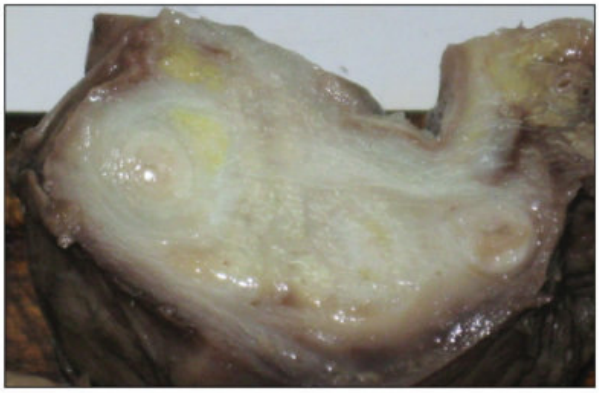

Figure-1: *Macroscopic view of resected specimen showing multiple ulcerations.*

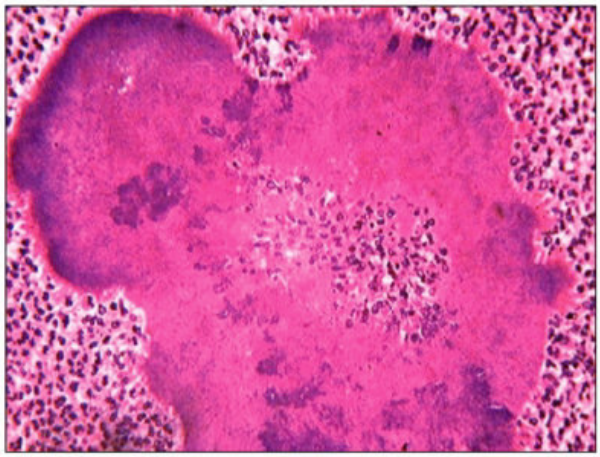

Figure-2: *Actinomycotic colonies (sulphur granules) surrounded by polymorphonuclear leucocytes.*

The resected segment was sent for histopathological examination. Sections showed colon. It revealed multiple foci of suppuration surrounded by granulation tissue containing many inflammatory cells. It also showed amorphous basophilic structure in the centre of suppuration resembling sulphur granules of *Actinomyces israelii*. No granuloma or malignancy was seen. Lymphnode showed reactive hyperplasia. Post operative recovery was uneventful and patient was discharged on 9^{th} post operative day after removal of skin stitches by giving necessary advice.

DISCUSSION

Abdominal actinomycosis is an uncommon clinical condition[6]. The most causative pathogen for actinomycosis in humans is *Actinomyces israelii*[2]. Actinomycosis is a chronic, progressive and suppurative infection, characterized by the formation of multiple abscesses, draining sinuses with abundant granulation and dense fibrous tissue[7]. There is no discernible sex predilection, most cases occurring in adolescents and middle-aged individuals[8]. It causes an endogenous and non-contagious inflammation in hypoxic tissue. This is the reason why cervicofacial localization is most frequent after a trauma in that region.

Although the first identification of actinomycosis was made nearly hundred years ago, the factors that initiate the infection are not well known. Patients with immune deficiency, previous abdominal surgery, trauma, inserted IUD and oropharyngeal surgery are prone to abdominal actinomycosis[1]. Abdominal actinomycosis has a predilection for the terminal ileum, caecum and appendix. The appendix is by far the most common

intra abdominal organ involved[9,10,11] followed by less common involvement of the colon, stomach, liver, gallbladder, pancreas, small bowel, anorectal region, pelvis, abdominal wall and other less common sites. In our case, multiple ulcerations were found in caecum on transverse section. Since *Actinomycosis spp.* have low virulence, they cause disease only when the normal mucosal barrier is broken, leading to abscess formation, fistula or mass lesions[12] which was found in our case. As the infection progresses, granulation tissue, fibrosis, multiple abscesses and draining sinuses are formed. The disease is usually indolent with symptoms appearing one month to two years before definite diagnosis. Associated findings include pain, weight loss, anorexia, fever, chills, leucocytosis, palpable mass, or fistulising sinus tract, fistulas. Presentation of our patient was like that of appendicular lump. Fistulas form in approximately one third of the abdominal actinomycotic abscesses[1]. Hence, intestinal tuberculosis, amoeboma, chronic appendicitis, regional enteritis and colon carcinoma must be considered in the differential diagnosis[13]. Most of the cases are detected during surgical exploration, after drainage of an abscess or on post-mortem examination[4]. Radiografic studies frequently suggest a malignant tumour or an ulcer. Barium enema examination may show a mass with extrinsic compression and narrowing of the caecum, suggestive of submucosal tumour[14]. Both CT scan and ultrasonic examination may also be useful modalities for differential diagnosis from perityphlitic abscess due to acute appendicitis. In one study made by Lee et al[15] CT scan revealed thickening of the bowel wall, perirectal, pericolic or perienteric infiltration, peritoneal or pelvic mass, minimal lymphadenopathy, hydronephrosis and hydro-ureter. In our case, ultrasonography revealed a mixed echogenic lesion with septation and cystic changes measuring about 3x2.2 cm noted in RIF region. Mild collection also noted in RIF region. Since malignancy and acute abdomen present with similar pictures to that of abdominal actinomycosis, the definite diagnosis is usually made by histopathological examination, showing the pathognomonic sulphur granules[16]. In most cases, as in ours, the surgeon found a large mass preoperatively which was invasive to various abdominal organs. In this case terminal ileum, caecum and proximal jejunum along the appendix were densely adherent with the lateral abdominal wall. Surgical treatment in the antibiotic era still remains essential in many instances. Although surgery is generally limited to incision and drainage curettage of abscess cavities or sinus tracts, a wide aggressive approach may be required, given certain conditions. In most cases, a right hemicolectomy has been performed[17]. We have done only limited resection and end to end anastomosis for the suspicion of advanced malignancy. In most cases complete excision of the affected tissues is impossible. Penicillin dramatically changed the outcome of patients with actinomycosis. The cure rate increased from 5 to 90% with the use of penicillin. In addition, recurrences after penicillin therapy have not been reported in long term follow-up[4]. Currently, high dose long-term therapy with penicillin is recommended, in order to allow drug to penetrate the fibrotic wall of the abscess and reach the colonies of *Actinomyces israelii* in the core of the sulphur granules[4]. Penicillin G parenterally 10 to 20 million units per day for 4 to 6 weeks are recommended followed by oral therapy 25 to 30 mg per kg every six hours for an additional 6 to 12 months. Tetracycline, clindamycin and erythromycin are adequate alternatives[18]. The patient was discharged with advice to take tab tetracycline, 6 hourly for 6 months.

CONCLUSION

Abdominal actinomycosis remains an uncommon condition that mimics a wide variety of intra-abdominal complaints ranging from acute inflammatory pathologies such as appendicitis to colonic or gynaecological malignancy. The primary diagnosis of abdominal actinomycosis is difficult. The possibility of actinomyceal infection should be kept in mind when dealing with atypical abdominal presentations, particularly if there is a previous history of appendiceal perforation or IUCD usage. Radiological imaging is unlikely to allow a definitive diagnosis. Surgical resection is frequently required coupled with high dose long-term antibiotics.

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Miscellaneous

Campus News

Postgraduate Training Recognized by BCPS

A high powered inspection team consisting of eight members from Bangladesh College of Physicians and Surgeons (BCPS) Dhaka, headed by Professor Syed Mokarrom Ali, visited the Jalalabad Ragib-Rabeya Medical College and Hospital on 27-12-2010. On the recommendations of the inspection team, the Council of Bangladesh College of Physicians and Surgeons (BCPS) has renewed recognition to the departments of Paediatrics, Ophthalmology, Otolaryngology, Psychiatry, Pathology (Histopathology) and Orthopaedic Surgery for imparting training to the resident doctors provisionally for a period of five years with effect from 21-09-2009. The Council has granted recognition to the department of Paediatric Surgery for imparting training to the resident doctors provisionally for a period of five years with effect from 13-02-2010. The training will be accepted for appearing in the FCPS, MD, MS Part-II and diploma examinations in these specialties. The postgraduate training imparted from the departments of Surgery, Medicine and Obstetrics & Gynaecology were recognized by Bangladesh College of Physicians and Surgeons (BCPS) earlier in 2003 and Dermatology & Veneriology and Physical Medicine in 2008.

Programmes

- The inaugural class of the students of 19th batch of JRRMC was held on 10th January 2013. Presided over by the Principal Maj. Gen. (Retd) Prof. Md Nazmul islam, the programme was enlightened by Professor Pran Gopal Datta, Honourable Vice Chancellor, Bangabhandhu Sheikh Mujib Medical University as chief guest. Professor Osul Ahmed Chowdhury, Dean, School of Medical Scisences, SUST, Danobir Mr Ragib Ali, Mr Abdul Hye, teachers of the college, students of 19th batch and their guardians were present on the occasion.
- On 20th January 2013, a meeting was held by the ex students of Jalalabad Ragib-Rabeya Medical College to organize a re-union. The meeting was presided over by the Principal of JRRMC.
- The Holy Eid-E-Miladunnabi was observed in the campus on 2nd February 2013. Danobir Ragib Ali, Principal of the college, Mr Abdul Hye, teachers, students and staff of the institute were present on the occasion.
- Danobir Ragib Ali inaugurated the re-union "Logo" of JRRMC 2014 on 9th March 2013. The Principal, teachers and ex students of JRRMC were present.
- Knee replacement was done successfully by the Department of Orthopedics of JRRMCH. This was the 4th successful knee replacement in this hospital. The surgery was done by team of orthopedicians of JRRMCH leaded by Professor Cyrus Shakiba, Professor and Head of Orthopedics, Jalalabad Ragib-Rabeya Medical College.
- 49th meeting of Governing Body for Jalalabad Ragib-Rabeya Medical College and Hospital was held in the college conference room on 8th June 2013. The meeting was presided over by Founder of the College and Chairman of Governing Body Danobir Mr Ragib Ali. The Member Secretary and Principal of JRRMC, Maj. Gen. (Retd) Prof Md Nazmul Islam, Mr Abdul Hye, Senior Vice President of Ragib-Rabeya Foundation, and other members of the Governing Body were also present in the meeting.

Corrigendum

In the Jalalabad Medical Journal Vol-10, No-01 January 2013, the name “Shammy” was mistakenly written as “Shammi” in cover page and in page no 18.

Instructions for Author(s)

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

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