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EDITORIAL

The Osmani Medical Teachers Association Journal Volume 18 Number 2

Sepsis- State of the Art Management and its Implementation Challenge in our Setting

Sepsis is one of the most common cause of multi organ failure and mortality. Earliest documentation of the word 'Sepsis' which means 'I rot' was discovered in the ancient Greece scriptures. Modern scientific progress has made us to understand its etiology, pathogenesis, consequences and complications. Third international Consensus Definition for Sepsis and Septic Shock(Sepsis-3) defines sepsis as patients with suspected infection who have 2 or more of: hypotension evident by systolic blood pressure <100 mmHg, altered mental status assessed by GCS ? 14 and respiratory rate ? 22 breath/min. Profound cytokine response and activation of coagulation cascade are the major pathophysiological basis of sepsis and septic shock.

Several guidelines have emerged to optimize the areaof multi approach dedicated management of sepsis but Surviving Sepsis Campaign (SSC) has been established as the pathfinder advancement in the evolution of evidence-based state of art sepsis management. Physicians and their teams across the globe are following the sepsis bundle approach which is the core components of SSC both in Intensive care unit (ICU) and non-ICU settings. However unfortunately both mandatory and unintentional deviation from the standard practice are actually common in the resource poor settings in country like Bangladesh.

Regarding identification of infection locus and infective organism, we lack sophisticated laboratory, microbiological and radiological facility like FDG-PET scan. Most of the time we failed to collect appropriate specimen and produce colony in the culture media even in the well-equipped ICU facilities. Delayed hospital admission and inadvertent broad-spectrum antibiotic abuse in the community are also responsible for it.

Bundle management include an initial bundle to be completed within 3 hours includes early administration of appropriate broad spectrum empheric antibiotics, obtaining blood for culture before antibiotic administration, measurement of serum lactate levels and administration of 30 ml/kg of crystalloid fluid for hypotension defined as mean arterial pressure < 65 or lactate > 4. Subsequent 6-hour bundle includes intravenous fluid bolus, vasopressors for persistent hypotension or shock and re-measurement of serum lactate levels. Other essential components of sepsis and septic shock management incorporate early high flow oxygen delivery, cardio respiratory resuscitation, prompt identification and control of source through meticulous history, examination and high yielding investigations etc. Therapeutic target of hemoglobin concentration is 70-90 g/L and inadvertent use of red cell concentrate is not evidence based.

Central venous access should be established early in the resuscitative process. Vasopressors are recommended if initial bolus of crystalloidfailed to recover hypotension. There is a paradigm shift of choicefrom dopamine to norepinephrine. Refractory shock and hypotension may exhibit inadequate systemic vascular resistance (Vasoplegia) and to overcome it ADH may be needed as adjunct.

The philosophy of two step bundle care was thatfollowing a protocol-based goal directed therapy (EGDT) may give greater survival advantage. With this utmost need of reducing mortality and morbidity recent 2018 change in SSC guideline combined components of twobundles into a single 'hour-1 bundle'. It urged to start resuscitation and management immediately and simultaneously.

Resource poor hospitals often fight against some shortcomings like infrastructural deficit, absence of dedicated multi-disciplinary sepsis management team and unit, ICU seat unavailability, absence of 24-hour point of care investigation facility. Therefore, step by step management protocol of sepsis is almost always violated and modified.

Antibiotics use in sepsis should be rational and optimal. 'Start Smart and Focus Later' approach is widely accepted. For choice of initial empiric antibiotic, consideration of factor like possible micro-organism including polymicrobial and atypical microbial agent as well as other factors such as probable source of infection, local antibiotic sensitivity and resistance pattern, comorbidities are essential. Subsequent escalation or de-escalation or change in antibiotic should be culture and sensitivity based.In our setting over aggressive antibiotic use is often observed in ICU facilities while in general ward settings antibiotics use seems inadequate in the terms of spectrum of activity and dosage. Local antibiotic sensitivity patterns are not known to us which is a great obstacle to use antibiotics judiciously.

Use of some other adjuncts like colloids, volume expanders, immunoglobulin and steroids are yet subjecting of controversies and debate. Multicenter studies didn't show significant benefit of these agents rather harmfulness is exhibited in some of these studies. However, most guidelines recommend to use these in compassionate basis as a last resort. Although misuse of colloids in sepsis are rectified, steroids are yet being used randomly considering it as magic bullet.

Infrastructural development, sophisticated round the clock point of care laboratory service, dedicated sepsis management team and goal directed guideline-orientedevidence-based practice in the hospital will improve the quality of sepsis management in our setting.

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ORIGINAL ARTICLE

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Assessment of Role of Dipstick Urine Test in Rapid Diagnosis of Urinary Tract Infections

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Abstract

Rapid and reliable diagnosis of urinary tract infection (UTI) is very important for initiating early treatment to reduce sufferings and morbidity. The aim of the current study was to assess the usefulness of urinary dipstick test for nitrites and leukocyte esterase to detect urinary tract infection in comparison to gold standard urine culture. This descriptive observational study was carried out in the department of Medicine and department of Nephrology of Sylhet M.A.G. Osmani medical college hospital, Sylhet from 1st January 2017 to 30th Jun 2017among one hundred subjects with symptomatic UTI. Dip-stick leukocyte esterase test (LET), nitrite test (NT) and urine culture and sensitivity test were performed in all subjects. Out of 100 participants 21 were proved to be culture positive UTI. The dipstick nitrite test and leukocyte esterase test had a sensitivity of 60.8% and 76.2% respectively and specificity of 85.7% and 93.3% respectively. Similarly, positive predictive value of nitrite test and leukocyte esterase test were 66.6% and 76.2% and negative predictive value were 88.8% and 93.3% respectively. The study found a combination of dipstick tests for the detection of leukocyte esterase and nitrite in urine are sensitive and specific enough in comparison to urine culture and can be used as a reliable indicator to initiate therapy for symptomatic UTI patients.

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Introducton

Urinary tract infection (UTI) which is defined as the presence of multiplying microorganisms in the tract through which urine flows from the kidneys via the bladder to outside[1]. It is the second most common infection,[2] While Escherichia coli is responsible for 80% of community-acquired urinary tract infections, Staphylococcus saprophyticus, Klebsiella, Proteus, Pseudomonas, Enterobacter, fungus or virus are other causative pathogen. The standard test for diagnosis of UTI is urine culture yielding a colony count of ?103 and ?105 CFU/ml of a pure growth of bacteria in symptomatic male and female patient respectively. However, this method requires an incubation period of 24 h or more and this could cause delay in the treatment. Therefore prompt diagnosis of all cases of UTI through a simple, sensitive test is desirable to initiate timely treatment to relieve symptoms and minimize risk of renal scarring and other complications of UTI.[3,4]

A urinalysis with manual dipstick detecting leukocyte esterase and nitrite are quick, inexpensive test that requires little expertise to perform correctly. The test can be useful in determining whether to treat empirically or to order and wait for the result of a urine culture for further confirmation. Study shows inhomogeneous results regarding positive and negative predictive value of leukocyte esterase and nitrite dipstick test in confirming and excluding UTI. The positive predictive value of leukocyte esterase has been shown to vary between 19% and 88%, while negative predictive value of 97-99%. On other hand specificity and sensitivity of nitrite dipstick test is found 96.6-97% and 0-44% respectively. Taking the leukocyte esterase and nitrite together proves much more useful. If both tests are positive, the specificity increases to 98-99.5%, indicating a high likelihood of a UTI.[5-7] If both tests are negative, the chances of infection fall to 0-5%.[8]

The present study was undertaken to compare the effectiveness of urinary dipstick tests for leukocyte esterase and nitrite in comparison to urine culture as a rapid diagnostic tool in symptomatic UTI in our setting.

Materials and Methods

It was a hospital based descriptive observational study which was carried out in both indoor and outdoor of department of Medicine and department of Nephrology, Sylhet M.A.G. Osmani medical college hospital, Sylhet from 1st January, 2017 to 30th June, 2017. All patients with symptomatic UTI attending both indoor and outdoor of department of Medicine and department of Nephrology in Sylhet M.A.G. Osmani medical college hospital were included in the study. Calculated sample sizes were 384 but due to time and financial constrains 100 subjects were included in the study. Subjects below 12 years of age, menstruating women, patient having indwelling catheter and patient having history of taking antibiotic within previous 10 days were excluded. After taking informed written consent detail history was taken and clinical examination was done and subsequently urine analysis was performed. All patients were asked to wipe their external genitalia with wet tissue before urination. The first urine stream of few seconds were discarded and midstream urine samples were collected in 2 clean urine test tubes and 1 urine culture tube respectively with 10-15ml of urine in each tube. The first test tube was sent to hospital pathology for urine routine microscopic examination. The second test tube was examined through dip-stick leukocyte esterase test (LET) and nitrite test (NT) which were evaluated using the BM Line-10 test strips (Roche Diagnostics, India). For each patient, 10 µl of collected urine sample from urine culture tube were incubated overnight at 37°c on nutrient agar media. Antimicrobial sensitivity was carried out by "Kirby-Baurer disc diffusion technique" as recommended on Clinical and Laboratory Standard Institute manual. The plates were then incubated at 37°c for another 24 hours.

Number of colonies obtained was multiplied by 1000 to obtain the colony forming units (CFU/ml). A cut off point of 10^3 and 105 colony forming unit (CFU/ml) for symptomatic male and female patients respectively were considered as positive culture. Data were processed manually and analyzed with the help of SPSS (Statistical package for social sciences) Version 21.0. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated for each of the methods (microscopic pyuria detection and dip-stick LET and NT) using standard formulae.

Results

A total 100 symptomatic UTI patients were recruited after fulfillment of exclusion and inclusion criteria. Of them 41% were between 21-30 years. The results of the study are shown in Pie diagram and table-1 to table-6. Among total culture positive cases, Escherichia coli were found in 52.4%, Enterobacter spp in 14.3%, Klebsiella pneumoniae in 19%, Acinetobacter Spp. in 9.5% and Pseudomonas aeruginosa in 4.8% cases.

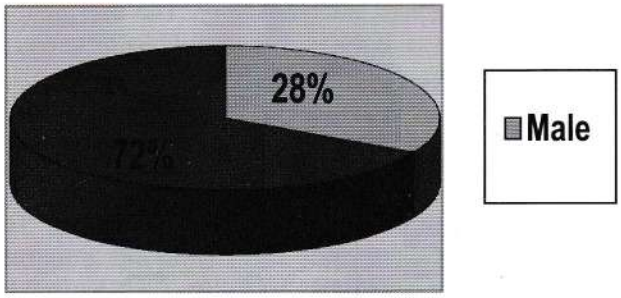

Fig. 1: Sex distribution of culture positive patients

Table I: Symptoms of patient (n=100)

Variable	Categories	Frequency	Percentage
Symptoms	Frequency	20	20%
	Urgency	4	4%
	Suprapubic pain	2	2%
	Loin pain	1	1%
	Dysuria	24	24%
	Hematuria	2	2%
	Fever with rigor	5	5%
	Stranguary	4	4%
	Cloudy urine	1	1%
	Combination of symptoms	37	37%

Table II: Comparison between the result of nitrite test and culture (n=100)

Nitrite test	Culture positive	Culture negative	Culture contaminated	Total
Nitrite positive	14	9	0	23
Nitrite negative	7	66	4	77
Total	21	75	4	100

Table III: Comparison between the result of leukocyte esterase test and culture (n=100)

Leukocyte esterase test	Culture positive	Culture negative	Culture contaminated	Total
positive	16	5	1	22
negative	5	70	3	78
Total	21	75	4	100

Table IV: Comparison between microscopic detection of pus cell and urine culture (n=100)

Culture results	Pus cell≤10/HPE	Pus cell>10/HPE	Total
positive	6	15	21
Contamination	1	3	4
Negative	55	20	75
Total	62	38	100

Table V: Correlation of nitrite and leukocyte esterase with urine culture results (n=100)

Culture results		Positive (n=21)	Negative(n=75)	Contamination(n=4)
Nitrite	Positive	14(66.66%)	9(12%)	0(0%)
	Negative	7(33.34%)	66(88%)	4(100%)
Leukocyte esterase	Positive	16(76.19%)	5(6.66%)	1(25%)
	Negative	5(23.81%)	70(93.34%)	3(75%)

Table VI: Sensitivity, specificity and PPV and NPV of Nitrite test and Leukocyte esterase test (n=100)

Perameter	Nitrite test	Leukocyte esterase test
Sensitivity	66.67%	76.19%
Specificity	88.00%	93.33%
Positive predictive value	60.86%	76.19%
Negative predictive value	90.41%	93.33%

Discussion

This study was carried out to see the usefulness of rapid screening test of urine for nitrites and leukocyte esterase to make a presumptive diagnosis of UTI in comparison to gold standard method like urine culture and sensitivity.[9]

In this study culture positive UTI was found in 21 of 100 symptomatic patients, among them females (72%) predominate than males (28%). Our findings was similar to the study performed by Mollick S.[10] Age groups of 21-30 years were found to be highly suffering from UTI which might be due to engagement in increase sexual activity. Neto et al. also found same type of result.[11] Combination of symptoms (37%) is most common presentation followed by isolated symptoms of dysuria (24%) and frequency of micturition (20%) which matched with the study done by Bent et al that showed combination of symptoms significantly increased the probability of UTI .[12]

Of the 23 specimens with nitrite test positive sample 14(60.8%) showed culture positivity, whereas 7(9%) nitrite negative urine samples were positive for culture. Also 4(5.2%) nitrite negative sample showed contamination with staphyloccous saprophyticus. These result matched with the study done by Taneja et al, which showed 56 (42%) culture positivity among 131 nitrite positive samples.[13] On the other hand among 22 leukocyte esterase positive samples 16 specimens (72.7%) showed culture positivity and of 78 leukocyte esterase negative samples, 70(89.7%) were culture negative.

Also 1(4.5%) leukocyte esterase positive test sample showed culture contamination with staphyloccous saprophyticus and 3(3.8%) leukocyte esterase negative test sample showed culture contamination with staphyloccous saprophyticus. These results showed similarity with same type of study by Mustafa y et al.[14]

In this study dipstick nitrite test had sensitivity, specificity, PPV, NPV of 66.67%, 88.00%, 60.86%, 90.41% respectively. Leukocyte esterase had sensitivity, specificity, PPV, NPV of 76.19%, 93.33%, 76.19%, 93.33% respectively. These results were concordant with the study done by Taneja et al, where sensitivity, specificity, PPV. NPV of nitrite test were 67.1%, 88.7%, 62.7%, 86.8% respectively and leukocyte esterase were 76.50%, 93.50%, 73.20%, 88.8% respectively.[13] In another study Mustafa y et al. found the sensitivity, specificity and positive predictive value for nitrite 61.7%, 96.9% and 95.4% respectively.[14] Carias et al had also similar type of observation.[15] This study found that all UTI were caused by gram negative bacteria. The most common uropathogen in this study was E. coli (52.4%), followed by Klebsiella pneumoniae (19.0%), Enterobacter species (14.3%), Acinobacter (9.5%) and Pseudomonas aeruginosa (4.8%) respectively.

The antimicrobial susceptibility patterns of isolates were variable. The study showed that E.coli isolates were most sensitive to Amikacin (80%) followed by Meropenem (72%), Klebsiella species isolates were mostly sensitive to Meropenem (100%) followed by Amikacin (75%). Enterobacters were most sensitive to Imipenem (100%) followed by Cefuroxime (67%), Cotrimoxazole (67%), Meropenem (67%). These results comply with previous studies performed by Subedi et al. and Sharma et al. to see antibiotic sensitivity pattern in culture positive UTI.[16,17]

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Conclusion

In this study both leukocyte esterase and nitrite test showed significantly high sensitivity, specificity, PPV and NPV. Though culture is gold standard test for diagnosis of UTI, the study finding is in favor of using both of these dipstick urine analysis methods together as a rapid diagnostic tool for UTI in both clinical and laboratory settings particularly in resource poor country.

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ORIGINAL ARTICLE

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Managemant of Paediatric Femoral Shaft Fractures with Titanium Elastic Nails(TENS)

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Abstract

Management of paediatric femoral shaft fracture (age 6-16) is controversial. The purpose of this study is to see the effectiveness of the treatment of femoral shaft fracture by titanium elastic nails(TENS). Between May 2014 to May 2016,total eleven (11) paediatric femoral shaft fracture patient were treated. Among them 09 boys and 02 were girls with amean age 10(6-16). All were recent(<3days) and underwent surgery within seven days by closed reduction and internal fixation with TENS under c-arm guided.. The final results were evaluated by using Flynn,s scoring criteria. All 11 patients were available for evaluation after a mean of 20 month (14-30) of follow up. Radiological union in all cases were achieved at 8-10 wks (mean 9wks). Full weight bearing was possible in a mean time of 12wks. Mean duration of hospital stay was 9days. The result were excellent in 07 patients (64%), Satisfactory in 03(27%) , and poor in 01(9%) patient who had Limb lengthening and knee stiffness. All patient had early return to school. The obtained result andminor complication signifythat this method is a safe and effective method for the treatment of paediatric femoral shaft fracture.

[OMTAJ 2019;18(2)]

Introduction

Femoral shaft fracture are among the most common major paediatric fracture treated by orthopedic surgeon. It represent 1-2% of all fractures in the paediatric population[1]. The treatment has traditionally been age related, influenced by location , type of fracture and also associated injuries. Because of rapid healing and spontaneous correction of angulation, most paediatric femur fractures below 06 yrs can be treated conservatively by immobilization in a spica cast either immediately or after a period of traction with good long term result[2,3]. But above age 6yrs, when treated conservatively could have loss of reduction, malunion, intolerance and complication associated with plaster. Moreover near the end of skeletal maturity accurate reduction is necessary as angulation is no longer correctable by growth[4]. However,the best treatment between age 6-16yrs is a matter of debate[5]. The different methods of operative stabilization include external fixation, compression plating and rigid intramedullary nailing[6-10].These methods are associated with many complication like pin tract infection, loss of reduction, growth arrest and AVN of capital femoral epiphysis[11]. Titanium Elastic Nailing(TENS) ,which is also known as Elastic Stable Intramedullary Nailing(ESIN) was introduced for femoral fractures by Nancy group in 1979, has gained popularity in the last two decades[12].The perceived advantage includes it is load sharing devices, flexible enough to allow bending that avoid to cross physis during insertion, early mobilization, early weight bearing , minimal scar, early to union due to repeated micromotion at fracture site, easy implant removal and high patient satisfactory rate[13,14,15].

Due to its favorable results and lack of serious complications it remains ideal treatment of choice for the treatment of paediatric femoral fractures.

Materials and Methods

Total Eleven children (09 boys, 02 girls) , age range 6-16years (ave.10.8years) with recent(<3days) femoral shaft fracture were treated with Titaneum Elastic Nail(TEN) between May 2014 to may2016. Most of the fracture were due to road traffic accidents (n-07 , 60%) ,few were fall from height (n-04, 40%). Right sided involvement was seen in 06(55%) case and left sided was 05(45%). Associated injury was in 01 patient which was fracture patella. Six were transverse, Three were short oblique,and two were minimally comminuted .

In this series, all patients underwent surgery within seven days of the injury with retrograde TENS using two nails of equal diameter for each fracture. To determine the size of nails, femoral diaphyseal internal diameter was measured on both Antero-posterior and lateral x-ray and was divided by 2 and 0.5mm is subtracted for the eventual nail diameter as determined by---Kasser and Beauty .

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The aims and objective of this study is to find out the outcome of TENS fixation in the treatment of paediatric femoral fracture.

Preoperative evaluation of this study includes full length radiograph of fractured femur both A/P and Lat views. Parameters studies were (1) clinical features of union, (2) radiological features of union, (3) range of motion of knee, (4) limb length discrepancy, (5) mal-alignment.

Surgery was performed under general/regional anaesthesia with the patient on fracture table in supine position keeping affected limb 10-15 degree adducted. Fracture was reduced using fluoroscopic guidance. A 1-2 cm long incision was made over the lateral and medial surface of distal femur, starting 2 cm proximal to the distal femoral epiphyseal plate. After soft tissue dissectio entry point was made by bone awl 45 degree angle to the shaft axis. Selected two titaneum elastic nails of equal diameter (nail diameter=40% of femoral medullary canal diameter) were inserted after proper contouring that means maximum curvature at fracture site creating double C constract to ensure a three point fixation. Both the nails were inserted through medial and lateral entry point and advanced proximally to fracture site. Fracture was reduced under fluoroscopic guidance and Nails were advanced into proximal fragment upto the level of trochanteric physis where tips were diverge laterally towards greater trochanter and medially within the femoral neck for proper rotational stability. Throughout the procedure position of nails and stability of fracture were checked under image intensifier . Distally the nails were cut keeping a small part (1cm) outside the entry point and wound was closed.

Postoperatively the limb was kept elevated over pillow. Sitting up in bed and static quadriceps exercise was started on first PO day. Knee mobilization and non weight bearing crutch walking was started on 2nd - 3rd PO day.

Partial weight bearing was started 3wks and full weight bearing by six to eight wks depending on fracture configuration and callus formation.The final criteria were evaluated by flynn et al [16]scoring criteria.

Table I : Frequency of side of injury

	Side	Frequency	Percentage
	Right	06	55%
	Left	05	45%
	Total	11	100%

Table II: Sex distribution

Sex	Frequency	percentage
Male	09	82%
Female	02	08%
Total	11	100

Table III: Mechanism of injury

Mechanism	Frequency	Percentage
H/O Fall	07	64%
H/O RTA	04	36%

Results

The duration of follow up ranged 14-30 month (mean 20 month). The hospital stay ranged between 07-20 days (mean 09). All 11 patient were available for evaluation after a period of 24 months follow up. Radiological union was achieved in all cases in a meantime of 08 wks (6wks-12wks). Full weight bearing was achieved in a mean time of 08wks. (06 -12wks). The results were excellent in 07 cases (64%), satisfactory 03 cases(28%), and poor 01 cases(08%) as per the scoring criteria for TENS by flynn et al[16].(pain,malalignment,LLD, complication) One patient had limb lengthening and knee stiffness.

Result were better for children in less then 10 years of age. Functional range of movement was achieved in an average of 08wks (6wks -30wks).

Table IV: Clinical results

Clinical results	No of cases	percentage
Excellent	07	64
satisfactory	03	28
Poor	01	08
Total	11	100

Discussion

Paediatric femoral shaft fracture constitute about 2% of all paediatric fracture,the choice of treatment has remained a constant challenge to the orthopedics fraternity. Until recently conservative treatment was the preferred method for the diaphyseal fracture in children and young adolescents. However ,to avoid the effect of prolonged immobilization, to reduce the loss of school days and for better nursing care, the operative approach has been gaining popularity for the last two decades. Recent studies have also increase awareness of the

psychological and economic effects of spica cast in on children and their families[17].

A variety of therapeutic alternative such as external fixator, compression plating, rigid intramedullary nailing and flexible intramedullary nailing are being used for paediatric femoral fractures[18]. External fixator provides good stability and early mobilization but risk of pin tract infection and takes longer time for weight bearing[19,20.21,22]. Plate osteosynthesis is associated with extensive soft tissue dissection, relatively longer duration of immobilization, risk of infection, and delay union, and also have large dissection for hardware removal[23,9].

Intramedullary nail also been used for paediatrics femoral fracture But stability and fracture angulation is a disadvantage to be taken care of. Interlocking nail is ideal for skeletally mature children. But when attemted in skeletally immature patients it is associated with avascular necrosis of femoral head, thinning of femoral neck and growth arrest of greater trochanter with secondary coxa valga deformity[11,24]. However there have been proponents for using interlocking nail in the 11-16 years of age group, avoiding the piriformis fossa as entry point with good result[25].

Titaneum elastic nail seems advantageous over other surgical methods particularly in this age group because it is sample, a load sharing internal splint that does not violate open physis, allows early mobilization and maintains alignment. Micromotion conferred by the elasticity of the fixation promotes faster external bridging callus formation. Periosteum is not disturbed and being a closed procedure there is no disturbance of fracture haematoma, thereby less risk of infection.

Flynn et al found TENS advantageous over hip spica in treatment of paediatrics femoral fracture[5]. Buechsenschuetz et al.documented titaneum nail superior in terms of union, scar acceptance, and overall patient satisfaction compared to traction and casting[26]. Ligier et al.treated 123 femoral fractures with elastic stable intramedullary nail. All fracture united. Thirteen children developed entry site irritation[12]. Similariy Naraynann et al, found good outcome in 79 femoral fractures stabilized with TENS [3].

We did not have control group nor did we compare other methods of treatment such as Ender nail, Rush nail. All the nails give good result. Ender nail and Rush nail have poor rotational stability and require multiple nails to achieve good fixation. Moreover Ender nail is not elastic and flexible enough for paediatric fracture as stated by Ligier[12]. Heinrich et al .observed good results in 78 femoral fractures treated with Ender nail[27]. Our results are compitable with universal union, no implant failure,or refracture after nail removal.

Fracture geometry and the location is an important determinent for selection of surgical implant. Transverse, short oblique and minimally communited fractures are suitable for TENS as stated by Flynn et al[13]. Narayanana et al stated that trasverse,short oblique ,short spiral fractures with minimum comminution in 5-12 years age group were the best indications for TENs. Lascombes et al[28] stated that TENs could be indicated in all femoral diaphyseal fractures of children above six years of age till epiphysis closed except severe type (III)open fracture. TENs does not provide adequate stability in comminuted, long oblique or spiral fractures. Even if it is done, post operative immobilization become essential.

Conclusion

Though there are some common complication like entry site irritation, pain , limb length discrepancy, angulation of fracture, refracture and infection which can be avoided by careful selection of patient. So the Titaneum elastic nail (TENS) is an effective and acceptable form of treatment in selected cases of paediatric femoral fractures.

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ORIGINAL ARTICLE

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Safety of Dapagliflozin versus Sitagliptin in Uncontrolled Type2 Diabetes Mellitus Treated with Combination of Metformin and Gliclazide

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Abstract

Type 2 diabetes mellitus is a major public health issue in developing countries because of its chronic nature, rapidly increasing prevalence, related complications, and the requirement of long term care.Now new options of dapagliflozin or sitagliptin is used in clinical practice as add-on therapy in uncontrolled T2DM being treated with combination of metformin and gliclazide.This study was undertakento compare the safety ofdapagliflozin versus sitagliptin in uncontrolled type 2 diabetic patient being treated with metformin and gliclazide. In this study include 67 uncontrolled diabetic patients those who previously receiving maximum tolerable dose of metformin (1500- 2,550 mg/day) and gliclazide (120-320 mg/day) for at least 3 months.The patients of group A were treated with sitagliptin 50 mg orally once daily and the patients of group B were treated with dapagliflozin 5 mg once daily as add-on treatment.Serum lipid profile, serum ALT and serum creatinine were estimated at 0 week and at 12th week. There was no significant difference between Dapagliflozin and Sitagliptin treated group. The mean serum LDL cholesterol was significant in both group estimated before initiation of treatment (p=0.007) and at the end point of treatment of 12th week (p= 0.004). ThusDapagliflozin and Sitagliptin are well tolerated individually as add- on to metformin and gliclazide in uncontrolled T2DM patients.

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Introduction

Type 2 diabetes results from the body's ineffective use of insulin. It comprises the majority of people with diabetes around the world, and is largely the result of excess body weight and physical inactivity[1].Type 2 diabetes is a result of both genetic and environmental factors. It is a multifaceted disease characterized by a disruption of glucose and lipid metabolism, leading to hyperglycemia in both the fasting and postprandial state. Subjects with type- 2 diabetes exhibit insulin resistance, reduced insulin number and sensitivity, reduced beta-cell number and function and glucagon hyper secretion.Treatment of type 2 diabetes begins with lifestyle management and/or metformin[2]. Single anti hyperglycemic agent is often unsuccessful to maintain long-term glycemic control in patients with type 2 diabetes, so many patients require combination therapies[3]. After taking maximum recommended tolerable dose of metformin and HbA1c target <7% not achieved after approximately 3 months of monotherapy, recommended to be proceed to 2-drug combination[4]. Gliclazides a sulfonylurea are commonly used as add-on therapy for patients inadequately controlled with metformin[5].According to Triple therapy we can consider Sitagliptin (DPP-4 inhibitor) or Dapagliflozin (SGLT2 inhibitor) as add-on therapy in uncontrolled type 2 diabetic patient treated with Metformin and Gliclazide.

Sitagliptin is potent and highly selective DPP-4 inhibitor approved in many countries for the treatment of patient with type-2 Diabetes[6].

Sitagliptin has been reported to improve glycemic control and improving beta cell function. It has low risk of hypoglycemia. Sitagliptin should be immediately discontinued if pancreatitis or allergic and hypersensitivity reactions occur[7]. And the risk of heart failure increased 1.8-to 2.0-fold in the initial 30 days of this medication[8] .

Dapagliflozin is an orally active, reversible and highly selective SGLT2 inhibitor[9,10]. It reduce plasma glucose by inhibiting renal glucose reabsorption[11]. SGLT2, located in the renal proximal tubule, reabsorbs most of the filtered glucose[12].Thi sdrug reduced LDL-C and increased HDL2-C, a favorable cardiometabolic

marker[13]. Dapagliflozin is associated with increased incidence of genital and lower urinary tract infection due to selective inhibition of the renal SGLT2, but these infections are usually mild to moderate and respond to standard antimicrobial treatment[14]. So the aim of the study is to evaluate the safety of dapagliflozin versus sitagliptin in uncontrolled type 2 diabetic patient treated with metformin and gliclazide as add-on therapy during a 12- week period.

Materials and Methods

A prospective observational study was carried out in the Department of Pharmacology and Therapeutics, in collaboration with Department of Endocrinology, Sylhet MAG Osmani Medical College Hospital, Sylhet and Sylhet Diabetic Hospital during the period from January 2017 to December 2017. Patients were selected from OPD of Endocrinology of this hospital and Sylhet diabetic hospital on the basis of inclusion criteria. Uncontrolled type 2 diabetic patients were selected with the help of Resident Physician and Outdoor Medical Officer and their glycemic status were estimated before selection. At first informed written consent was taken. History, clinical examination and all reports of investigations were recorded. Serum total cholesterol, HDL and TG were estimated by enzymatic endpoint (CHOD-PAP) method and LDL C was estimated by using friedewald's (1972) formula. Serum ALT was estimated by kinetic method, S creatinine was estimated by alkaline picrate method.

73 uncontrolled diabetic patients were divided randomly by lottery method into two groups, containing 40 patients in group A and 33 patients in group B. The patients of group A were treated with sitagliptin 50 mg orally once daily taken in the morning either with or without food as add-on treatment. The patients of group B were treated with dapagliflozin 5 mg once daily taken in the morning either with or without food as add- on treatment. 37 patients in group-A and 30 patients in group-B were completed 12 weeks of treatment period.

Results

Total 73 patients were enrolled in this study. After randomization 3 patients from group-A and 3 patients from group-B who failed to complete follow up visit were excluded. So 37 patients of group A (Metformin, Gliclazide, plus Sitagliptin treated group) and 30 patients of group-B (Metformin, Gliclazide, plus Dapagliflozin treated group) were analyzed in this study.

Table-1 showed the effect of the mean serum total cholesterol was 190.4 ± 57.9 mg/ dl before initiation of treatment and was158.8 ± 39.1 mg/dl at 12th week of treatment in the Sitagliptin treated group. The difference was statistically significant (t=5.862; p<0.001). In Dapagliflozin treated group, the mean serum total cholesterol was 183.3 ± 48.6 mg/dl before initiation of treatment and was 150.6 ± 25.2 mg/dl at 12th week of treatment. The difference was statistically significant (t=5.627; p<0.001). The mean serum total cholesterol did not differ in either group estimated before initiation of treatment (t=0.541; p=0.591) and at end point of treatment at 12th week (t=0.994; p=0.324) (Table-1).

Table-1: Effect of Sitagliptin and Dapagliflozin on serum lipid profile estimated before and 12th week of treatment when administered as add-on treatment in diabetic patients

Lipid profile (Mean ± SD)	Sitagliptin group (n=37)	Dapagliflozin group (n=30)
Serum total cholesterol		
At 0 week	190.4 ± 57.9	183.3 ± 48.6
At 12 week	158.8 ± 39.1	150.6 ± 25.2
Serum HDL cholesterol		
At 0 week	41.9 ± 8.0	37.6 ± 4.7
At 12 week	41.0± 5.6	37.8 ± 4.0
Serum LDL cholesterol		
At 0 week	130.9 ± 42.8	104.5 ± 32.3
At 12 week	116.7 ± 34.4	94.2 ± 25.1
Serum triglyceride		
At 0 week	227.6 ± 120.5	257.9 ± 101.4
At 12 week	167.2 ± 171.3	171.3 ± 46.6

The mean serum HDL cholesterol was 41.9 ± 8.0 mg/ dl before initiation of treatment and was41.0± 5.6 mg/dl at 12th week of initiation of treatment in the Sitagliptin treated group. The difference was not statistically significant (t=1.106; p=0.276). In Dapagliflozin treated group, the mean serum HDL cholesterol was 37.6 ± 4.7 mg/dl before initiation of treatment and was 37.8 ± 4.0 mg/dl at 12th week of treatment. The difference was

statistically not significant (t=0.310;p=0.759). The mean serum HDL cholesterol significant in both group estimated before initiation of treatment (t=2.612;p=0.011) and at end point of treatment of 12th week (t=2.691;p=0.009) (Table- 1).

The mean serum LDL cholesterol estimated before initiation of treatment was differed significantly (t=2.794; p=0.007) and at end point of treatment of 12th week (t=3.001; p=0.004) (Table- 1).

The mean serum triglyceride did not differ in either group estimated before initiation of treatment (t=1.096; p=0.277) and at end point of treatment of 12th week (t=-0.31; p=0.755) (Table-1).

Figure 1:

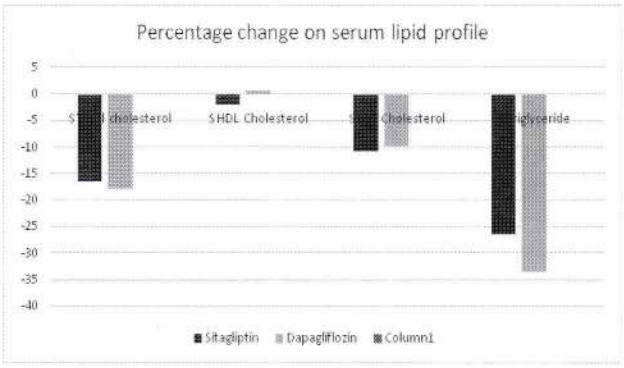

Figure 1 showed percentage change of serum total cholesterol, serum HDL cholesterol, serum LDL cholesterol, serum triglyceride in Sitagliptin and Dapagliflozin treated diabetic patients .In serum total cholesterol level there is significant difference between two groups(Z=p value -.133) .In serum HDL cholesterol level there is no significant difference between two groups(Z=p value 0.265).In .In serum LDL cholesterol level there is no significant difference between two groups(Z=p value 0.131).In .In serum triglyceride cholesterol level there is significant difference between two groups(Z=p value- 3.54).

Table-2 showed, the effect of Sitagliptin or Dapagliflozin on serum ALT level administered as add-on treatment in diabetic patients receiving 1500- 2550 mg/day metformin and 120-320 mg/day gliclazide estimated before and 12th week of treatment. In Sitagliptin treated group, the mean serum ALT level before initiation of treatment was recorded as 29.30 ± 5.32 U/Lt and at 12th week of treatment was recorded as 28.81 ± 5.37 U/L. The difference was statistically not significant (t=1.143; p=0.261); while in Dapagliflozin treated group, the mean serum ALT level before initiation of treatment was estimated as 29.63 ± 4.80 U/L and at 12h week of treatment was estimated as 28.734 ± 4.31 U/L. The difference was statistically not significant (t=1.855; p=0.074). The mean serum ALT level before initiation of treatment was almost similar in both Sitagliptin and Dapagliflozintraeted groups (t=0.269; p=0.789) and also at 12th week of treatment of Sitagliptin and Dapagliflozin treated group (t=0.064; p=0.949).

Table-2: Effect of Sitagliptin and Dapagliflozin on Serum ALT level and serum creatinine level administered as add-on treatment in diabetic patients estimated before and after 12th weeks of treatment.

Time interval	Serum ALT (U/L		Serum creatinine (mg/dl)	
	Sitagliptin treated group (n=37)	Dapaglifloin treated group (n=30)	Sitagliptin treated group (n=37)	Dapaglifloin treated group (n=30)
At 0 week	29.30 ± 5.32	29.63 ± 4.80	0.82 ± 0.19	0. 91 ± 0.20
12th week of treatment	28.81 ± 5.37	28.734 ± 4.31	0.70 ± 0.16	0.67 ± 0.17

Table-2 showed, the effect of Sitagliptin and Dapagliflozin on serum creatinine level administered as add-on treatment in diabetic patients receiving 1500-2550 mg/day metformin and 120-320 mg/day gliclazide estimated before and 12th week of treatment. In Sitagliptin treated group, the mean serum creatinine level before initiation of treatment was 0.82 ± 0.19 mg/dl and at 12th week of treatment was 0.70 ± 0.16 mg/dl; the difference was statistically significant (t=4.712; p<0.001). While in Dapagliflozin treated group, the mean serum creatinine level before initiation of treatment was 0.91 ± 20 mg/dL and at 12h week of treatment was 0.67 ± 0.17mg/dL; the difference was statistically significant (t=9.97; p<0.001).

The mean serum creatinine level before initiation of treatment was almost similar in both Sitagliptin and Dapagliflozintreated groups (t=1.963; p=0.054) and also at 12th week of treatment of Sitagliptin and Dapagliflozin treated group (t=0.675; p=0.502).

In Sitagliptin treated group, 1 (2.7%) patients reported vomiting at 2nd week of treatment; while in Dapagliflozin treated group, none of the patients reported vomiting at 2nd week of treatment. There was no statistical significant difference between the groups (p=1.000). In Dapagliflozin treated group, 2 (6.7%) patients experienced urinary tract infection while none experienced urinary tract infection in Sitagliptin treated group. There was no statistical significant difference in adverse effect between the groups (p=0.197).

Discussion

Type 2 diabetes mellitus is a growing worldwide epidemic[15]. It accounts for 90-95% of the total cases of diabetes[16]. In the current study the mean serum total cholesterol was significantly reduced in sitagliptin treated group ($p< 0.001$) and dapagliflozin treated group ($p< 0.001$) at the end of 12th week. Both of the drugs decreased total cholesterol level individually. There is no significant difference in between two treatment group. The mean serum HDL cholesterol was non-significant in sitagliptin treated group ($p=0.276$) and also non-significant in dapagliflozin treated group ($p=0.759$) in 12th week period. The mean serum HDL cholesrterol level between two groups were significant at '0' week ($p=0.011$) and also 12th week ($p=0.009$).The mean serum LDL cholesterol was significantly reduced in sitagliptin treated group ($p<0.001$) and dapagliflozin treated group ($p=0.003$) in 12th week period. The mean serum LDL cholesterol level between two groups were significant before initiation of treatment ($p=0.007$) and at end point of treatment of 12th week ($p=0.004$). The mean serum triglyceride was significantly reduced in sitagliptin treated group ($p<0.001$) and dapagliflozin treated group ($p<0.001$) in 12th weeks.This observation was not consistent to the study of Hayashi et al., (2017) that at the end of 12th week, the change in mean serum total cholesterol level between dapagliflozin treated group and sitagliptin treated group was non- significant ($p=0.102$). Total cholesterol level was unchanged in both groups. The change in mean serum HDL cholesterol level between two groups were significant ($p=0.003$), dapagliflozin increased HDL cholesterol level. The mean serum LDL cholesterol level between two groups were non-significant ($p=0.323$). LDL cholesterol level was unchanged in both groups. The mean serum TG level between two groups were also non-significant ($p=0.928$), failed to demonstrate a significant association between changes in TG level[13].Matthaei, Bowering, Rohwedder et al., 2015) observes that dapagliflozin increases in total cholesterol, LDL cholesterol and HDL cholesterol but no significant change in triglyceride levels[17]. This observation was not supported the present study.

In our observation the change of mean alanine aminotransferase (ALT) level was almost similar to dapagliflozin group and sitagliptin treated group at '0' week ($p=0.789$) and at the end of 12th week ($p=0.949$), was not correspond with Hayashi et al., (2017) that ALT were significantly ($p<0.001$) decreased by dapagliflozin, while the liver function remain unchanged ($p=0.202$) by sitagliptin treatment[13]

In this study no significant change observed in serum creatinine level between the two treatment groups, before initiation of treatment ($p=0.054$) and at 12th week ($p=0.502$). This study was agreed with Hayashi et al., (2017) that showed no significant difference ($p=0.757$) in serum creatinine level between two treatment group at the end of 12th week[13]

The recorded adverse effects in our observation were almost similar ($P=0.583$) between dapagliflozin (6.7%) and sitagliptin (2.7%) treated group. The majority of adverse events were mild. Evidence of hypersensitivity, genital infection, hypoglycemia, pancreatitis or heart failure were observed in neither sitagliptin nor dapagliflozin treated group.

Over 12 weeks, urinary tract infection were experienced with two patients (6.7%) in dapagliflozin treated group. Our study was partially consistent with Filippatos et al., (2015) that dapagliflozin (4.3%) was associated with more frequent urinary tract infections. Matthaei, Bowering, Rohwedder et al., (2015) showed that urinary tract infection was reported by 4.6% patients receivingdapagliflozin[17]. Bailey et al., (2013) found that evidence suggestive of urinary tract infection was reported in 8.8%of dapagliflozinpatients[18]. Jabbour et al., (2014) observed that, dapagliflozin (6.7%) was associated with urinary tract infection[19].

In sitagliptin treated group (2.7%) experienced vomiting at 2nd week. No patients were discontinued from study due to any adverse effects.

Conclusion

Dapagliflozin and Sitagliptin are well tolerated individually as add- on to metformin and gliclazide in uncontrolled T2DM patients. Minimum adverse effects are observed in two group and in our observation both drugs are well tolerated and safe. There is no significant difference between two group.

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ORIGINAL ARTICLE

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Asymptomatic Bacteriuria Among Diabetic Pregnant Women in Sylhet Diabetic Hospital

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Abstract

Urinary tract infection is the most common infection in diabetic pregnant women, which leads to serious consequences to fetal development and maternal health. This is the attempt to determine the occurrence of asymptomatic bacteriuria among diabetic pregnant women and also determined the antibacterial susceptibility of the isolates to various antibiotics. One hundred fifty consecutive pregnant women were included in this study. This cross-sectional study was conducted in the Department of Microbiology, Sylhet MAG Osmani Medical College, Sylhet. Women in different stages of pregnancy with known case of diabetes attending the Sylhet Diabetic Hospital were enrolled for this study.Clean catch midstream urine samples were collected and cultured on Eosin Methylene Blue agar and Blood agar. Suspected colonies were identified, antibiotic susceptibility test was done. Of 150 samples, 16 (10.67%) were positive for asymptomatic bacteriuria. The dominant bacterial isolate was Escherichia coli (75%) followed by Klebsiella (18.75%) and Proteus (6.25%). The antibiotic susceptibility was observed to cefixime, ceftazidime, ceftriaxone, cefradine, imipenem and nitrofurantoin, the most resistance was amoxicillin- clavulanic acid. Prevalence of asymptomatic bacteriuria among pregnant women was 10.67%. The predominant organisms were Escherichia coli 75%. Most strains of Escherichia coli showed that they were resistant to amoxicillin-clavulanic acid.

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Introduction

Urinary tract infection (UTI) is one of the most challenging health problem and frequent infection observed in clinical practice in developing countries. Asian patients are considered to have a higher risk of developing UTIs and potentially worse prognosis[1,2] Pregnancy and diabetes mellitus both aggravate the chance of Urinary tract infections. Pregnancy causes numerous changes in the woman's body. During pregnancy, the level of body immune system is reduced. Hormonal and mechanical changes increase the risk of urinary stasis and vesicoureteral reflux. These changes, along with an already short urethra and difficulty with hygiene due to a distended pregnant belly, increase the frequency of urinary tract infections (UTIs) in pregnant women[2]. Diabetes is one of the most common medical complications in pregnancy.Diabetes during pregnancy is mostly due to gestational diabetes[3]. Pregnancy also occurs in women with pre-existing diabetes which can complicates 0.2% to 0.3% of pregnancies[4]. The importance of diabetes in pregnancy stems from the fact that it carries a significant risk both to the fetus and the mother. Bacteriuria that leads to the pyelonephritis during pregnancy is associated with imperfect consequences for both the maternal and neonatal health, including maternal sepsis and anemia, Preterm Birth (PTB) Low Birth Weight (LBW), and perinatal mortality[4]. Escherichia coli are the most common Gram-negative bacterium causing UTI in the community. Other bacterial species commonly involve in UTI are Proteus spp., Pseudomonas spp., Klebsiella, Staphylococcus epidermidis, Staphylococcus saprophyticus, Streptococci,Enterobacter and Citrobacter[5,6,7].

If pregnancy added with diabetes, as diabetes also increase risk of infection, so it is expected that the rate of UTI will be higher in pregnancy with diabetes.

The successful management of UTI in diabetes depends on the appropriate identification of the uropathogens responsible and the selection of effective antimicrobials against them.[8] Urinary tract infection in pregnancy exposes both the mother and fetus to a higher risk of complications and the choice of therapy is obviously more limited. The antimicrobial drugs which are being used for the treatment of the UTI includes ampicillin, nitrofurantoin, cotrimoxazole, cephalexin, cephradine,

cefuroxime, ceftazidime, amoxicillin-clavulanic acid, demonstrated excellent efficacy against the organisms.[9] Since the microorganisms causing UTI vary in their susceptibility to antimicrobials from place to place and time to time, hence choice of antibiotic should be guided by culture and sensitivity assays. This study was conducted to determine the bacterial agent and their susceptibility pattern in diabetic pregnant mother.

Materials and Methods

This Cross-sectional observational study was done in the Department of Microbiology, Sylhet MAG Osmani Medical College, Sylhet from 1st January 2015 to 31st December 2015 and the sample was collected from the Sylhet Diabetic Hospital.

Prior to the beginning of the study, approval of the research protocol was obtained from the Ethical Review Committee of Sylhet MAG Osmani Medical College, Sylhet. A total 150 diabetic pregnant mother were selected for this study. All pregnant women consulting for their antenatal checkup in Sylhet Diabetic hospital, Sylhet, fulfilling the inclusion and exclusion criteria were included in the study.The following patients were excluded (a) patient with sign symptom of UTI (b) known case of congenital malformations of urinary tract(c) patients with any intake of antibiotics. Clean catch mid-stream urine samples were collected and cultured on Blood agar and Eosin Metylene Blue (EMB) agar plates by calibrated loop method and incubated in 370C for 24 h. Bacteria were isolated and identified based on biochemical tests. Antimicrobial susceptibility testing by disc diffusion was done according to clinical and laboratory standard institute guidelines.

For statistical analysis, all data were processed and analyzed with the help of SPSS version 21.

Results

It was found that the maximum age was 37 years, and the minimum age was 18 years. The mean age of the participants was found to be 26.39 years with a standard deviation of 5.9.(Table-I).

It was seen that of the 150 pregnant women a number of 16 women had the bacteriuria that accounts for 10.67 percent of the total population. Among the bacteriuria that was isolated, the most commonly isolated organism was E. coli. A number of 12 organisms of E. coli were isolated which alone comprises 75% of the total isolated bacteriuria. Klebsiella spp. was the second most common organism with a number of 3 cases among the 16 which is 18.75% of the total data. Moreover, the least common organism was Proteus (6.25%). (Table-II)

Table-I: Showing standard deviation (SD) of the age of the participant

	N	Minimum	Maximum	Mean	SD
Age of the participant	150	18	37	26.39	5.9

Table-II: Showing bacterial strains isolated from pregnant women.

Organisms	N (%)
E. coli	12(75%)
Klebsiella	3(18.75%)
Proteus	1(6.25%)

Our investigation harbored higher level of resistance against amoxicillin (75%), Azithromycin (37.5%) Amoxicillin + Clavulanic acid (31.25%). The most effective antibiotics were Ceftriaxone, Cephradine, Cefuroxime and Nitrofurantoin (93.75%). Whereas organisms showed sensitivity of 87.5 % in the presence of Cefixime and Ceftazidime. (Table-III)

Table-III : Antimicrobials sensitivity pattern in diabetic pregnant mother.

Antimicrobials	Asymptomatic diabetic mother n(%)	
Amoxicillin	Sensitive	04(25%)
	Resistant	12(75%)
Amoxicillin + Clavulanic acid	Sensitive	11(68.7%)
	Resistant	05(31.25%)
Azithromycin	Sensitive	10(62.5%)
	Resistant	06(37.5%)
Cefixime	Sensitive	14(87.5%)
	Resistant	02(12.5%)
Ceftazidime	Sensitive	14(87.5%)
	Resistant	02(12.5%)
Ceftriaxone	Sensitive	15(93.75%)
	Resistant	01(6.25%)
Cephradine	Sensitive	15(93.75%)
	Resistant	01(6.25%)
Cefuroxime	Sensitive	15(93.75%)
	Resistant	01(6.25%)
Imipenem	Sensitive	14(87.5%)
	Resistant	02(12.5%)
Nitrofurantoin	Sensitive	15(93.75%)
	Resistant	01(6.25%)

Discussion

Urinary tract infection is common in female and most common during pregnancy. It is due to physiological changes takes place in the genitourinary tract during pregnancy[10].

The age of the study population ranged from 18 to 37 years with the mean age of 26.39 (SD +5.9) years. In this study we found the prevalence of asymptomatic bacteriuria in diabetic pregnant mother attending in Sylhet diabetic hospital was 10.67%.

Turpin et al.[11] reported that frequency of asymptomatic UTI was 7.3% in pregnant women. Hernandez et al.[12] conducted a similar study in Family Medicine Units of the Instituto Mexicano del Seguro Social and reported that frequency of asymptomatic UTI was 8.4%. Tadesse et al.[13] reported that prevalence of asymptomatic bacteriuria in pregnant women was 9.8%. Our study do not show significant difference with other study.

The gram-negative bacteria were mainly responsible for asymptomatic bacteriuria in the present study. Results of this study showed that E. coli was dominant bacterial agents of asymptomatic pregnant women, which was similar to other studies.[1,2,7,8,10-13]

Rajshekhar, Kerure and Umashanker. inKolkata, West Bengal, they found apart from E.coli (72.72%), the most common organism isolated, S.aureus (12.12%) and Klebsiella pneumoniae (6.07%) were also responsible for UTI in decreasing order[10].

Akter et al. found E.coli was the most prevalent bacteria in 39% patient having bacteriuria followed by Klebsiella spp. (13%). Among gram positive Enterococcus spp.12% and staphylococcus spp. was found in 10% of UTI cases[3]. Janifer et al.[14]observed that E. coli (71.3%) as the predominant bacterial isolates, followed by K. pneumoniae (13.05%) and P. aeruginosa (8.8%) 14in Chennai, India.

Resistance to commonly used antimicrobial agents is increasing in the community. The sensitivity pattern in case of uropathogens is changing day by day. The scenario varies from hospital to hospital even in the same city and from country to country[9].

In the present study, most Gram-negative bacteria isolates were sensitive to nitrofurantoin 15(93.75%), imipenem 14(87.5%), nitrofurantoin 15(93.75%), Cefuroxime15(93.75%) ceftriaxone 15(93.75%) and cephradine 15(93.75%).

Alemu, Moges and Shiferawin Northwest Ethiopia on antibiotics susceptibility patterns of Gram-negative bacteria (E. coli, Klebsiella, and Enterobacter species) isolated from urine samples of pregnant women were highly sensitive to chloramphenicol (100%), ceftriaxone (96.3%), ciprofloxacin (96.3 %), gentamicin (92.6), and norfloxacin (92.6). But they should sensitivity towards amoxicillin-clavulanic acid (59.3 %), co-trimoxazole (51.9 %) and tetracycline (40.7 %).[16]

Nabi et al. did a study on the patients of Armed Forced Medical College, Bangladesh found that all urinary isolates were sensitive to imipenem except E.coli. 95.91% E.coli isolates were sensitive to Imipenem. They also observed that, the isolates were found sensitive in amikacin (81.63%), ceftriaxone (69%), nitrofurantoin (61.22%) and gentamicin (67.34%) [9].

In this study most of the isolates were found resistance to amoxicillin (75%). This may be due to easy availability and indiscriminate use of this drug.

All the isolates showed resistance to amoxicillin in the study conducted by Nabi et al. (2014), which also correlate with this study[9].

Conclusion

Asymptomatic bacteriuria among diabetic pregnant women is not an uncommon finding in our country. This observation bubbled up the optimism about the hygiene scenario of the pregnant women. Moreover, isolation of Gram-negative bacteria such as Escherichia coli, Klebsiella, Proteus was found to be a very serious concern during antenatal checkup. These isolates were mostly susceptible against imipenem, nitrofurantoin, ceftriaxone and cephradine. For all antenatal women, routine urine culture and antimicrobial sensitivity tests should be performed to avoid complications linked to urinary tract infections.

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ORIGINAL ARTICLE

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Serum Calcium, Albumin and Alkaline phosphatase in Postmenopausal Women

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Abstract

Menopause is associated with rapid decrease of female sex hormones, when various physiological, psychological and biochemical changes occur including metabolic bone disorders. There is decrease in bone mass per unit volume, compromising physical strength of the skeleton, enhancing susceptibility to fractures on minor trauma. The aim of this study was to compare the serum calcium, alkaline phosphatase and albumin levels between pre and post menopausal women as biochemical markers of bone turnover. It was a cross sectional observational study conducted in the department of Biochemistry, Sylhet MAG Osmani Medical College, from January 2018 to December 2018.Ninety-three(93) postmenopausal and sixty-nine (69) premenopausal women were selected. Informed written consent was taken from all subjects. Five (05) ml of venous blood was taken from each subject and serum was separated for estimation of total calcium, alkaline phosphatase, total protein and albumin. Statistical analysis was done using SPSS version 25.0. Student's unpaired't' test and Pearson's correlation test were done. Serum total protein, albumin and total calcium were significantly reduced and alkaline phosphatase increased in postmenopausal women compared to premenopausal women. It may be concluded that serum total protein, albumin, total calcium and alkaline phosphatase can be used as indicator of bone turnover and susceptibility of fracture in postmenopausal women.

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Introduction

Menopause is permanent cessation of menstruation, diagnosed after 12 months of amenorrhea. Age range of 45-55 years is natural menopausal time of worldwide women. Below 45 years is called early menopause and after 50 years is called late menopause[1]. Bone is a dynamic tissue, being remodeled constantly throughout life. It is composed of inorganic minerals (calcium and phosphates) and an organic matrix (type1 collagen). There are two main types of bone cells, osteoblasts and osteoclasts, that participate in growth, modeling and remodeling of bones[2]. Arrangement of compact and cancellous bone provides strength and density suitable for mobility and protection[3].

After 40-50 years of age, cortical bone is lost at a rate about 0.3-0.5% per year in both sexes, but an accelerated loss of cortical bone is superimposed on age related loss around menopause in women[4]. With onset of menopause, rapid bone loss occurs about 2-3% over following 5-10 years, being greatest in early postmenopausal years[5]. Estrogen has a direct effect on osteoblasts and in postmenopausal women, two major causes of bone loss are estrogen deficiency and age related processes[6]. Osteoporosis may have a tremendous impact on the lives of many postmenopausal women. Worldwide, lifetime risk for women to have an osteoporotic fracture is about 30-40%[7]. Occurrence of osteoporosis in postmenopausal women in India may be associated with many risk factors including low calcium diet, lack of exercise and vitamin D deficiency[8]. Prevalence of osteoporosis increases with age and up to 70% of women over the age of 80 years have osteoporosis[9]. Albumin is essential for synthesis of bone matrix& bone health[7]. Skeleton contains 99% of total calcium. In blood about 41% calcium is protein bound of which 80% with albumin and 20% with globulin[10]. Serum alkaline phosphatase is a commonly used biomarker of bone formation, which plays an important role in osteoid formation and bone mineralization[11].There are three different ways of assessment of osteoporosis and metabolic bone disorders: bone density measurement, bone biopsy and biochemical assays[4]. Biochemical markers are useful for diagnosis and monitoring of metabolic bone diseases[8]. The rate of formation and degradation of bone matrix can be assessed by measuring the enzymatic activity related to osteoblasts and osteoclasts. Increased bone resorption has been observed in postmenopausal women and many markers for bone formation and resorption have been identified[12]. Measurements of some of these markers can have potential in evaluation of risk of accelerated bone loss in postmenopausal women. Conflicting evidence suggests more observation of changes of biochemical markers in postmenopausal women. Significantly lower serum calcium and raised alkaline phosphatase and lower serum

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albumin level have been observed in postmenopausal women[7,8]. But opposite findings of serum increased calcium and alkaline phosphatase was observed by Ashuma et al. (2005)[4]also no change of serum albumin found by Rai et al, (2014)[13]. With this background concept and conflicting study results, this study was done to measure serum calcium, albumin and alkaline phosphatase in postmenopausal women to assess potential risks of osteoporosis of postmenopausal women.

Materials and Methods

This cross sectional observational study was carried out in the department of Biochemistry, Sylhet MAG Osmani Medical College, during the period from January to December 2018. Ninety-three (93) post-menopausal women attaining natural menopause for at least 3 years (age range 48-75 years) and 69 premenopausal women (age range 20-40 years) were selected. Postmenopausal women on HRT, H/O osteoporotic fracture, liver disease, renal disease, diabetes mellitus, having steroid treatment, smoking, alcoholics, calcium supplementation, and premenopausal women with pregnancy or using OCP were excluded. Informed written consent was taken from each study subject. Weight and height were measured and BMI calculated. Five ml of venous blood was taken from each study subject serum separated. Serum Alkaline phosphatase, Total protein, Albumin and Calcium were estimated by a semi automated analyzer in the department of Biochemistry of MAG Osmani Medical College. Data were expressed as mean ±SD. Statistical analysis were done with help of SPSS, version 25. Unpaired 't' test and Pearson's correlation co-efficient were done. P-value <0.05 was considered statistically significant.

Results

Mean age of were 29.48 years and 54.17 years in pre and post menopausal women. Mean BMI was 24.90 in premenopausal women & 26.72 in postmenopausal women. Postmenopausal women were overweight.

Table I: Age and BMI of study subjects

Parameters	Premenopausal (Gr-A) n=69	Postmenopausal (Gr-B) n=93	p-value
Age in Years mean ± SD	29.48±5.78	54.17 ±5.78	<0.001*
BMI mean ± SD	24.90 ±2.81	26.72±2.83	<0.001*

Unpaired t test was done. *=significant (p<0.05)

Total calcium, total protein and albumin were significantly decreased and alkaline phosphates was significantly increased in postmenopausal compared to premenopausal women, presented in table-II.

Table II: Biochemical changes reflecting bone turnover of study subjects

Parameters	Premenopausal (Gr-A) n=69	Postmenopausal (Gr-B) n=93	P-value
Total calcium mg/dlmean ± SD	9.52 ±0.51	7.16 ±0.14	<0.001*
Total protein g/dlmean ± SD	8.14 ±1.27	6.70 ±0.91	<0.001*
Albumin g/dl mean ± SD	4.51 ±0.52	3.28 ±0.23	<0.001*
Alk. Phosphatas U/L mean ± SD	66.10±10.49	153.0 ±8.43	<0.001*

Unpaired t test was done. *=significant (p<0.05)

Total serum calcium was significantly positively correlated with albumin and negatively correlated with alkaline phosphatase, presented in table--III

Table III:Correlation of serum calcium with albumin and alkaline phosphatase in study subject (n=162)

Correlation Parameters		p-value	p-value
Calcium	albumin	0.803	<0.001*
	Alkaline phosphatase	-0.823	<0.001*

Pearson's correlation test was done *=significant (p<0.05)

Changes of different parameters were compared between early and late postmenopausal women. Other than age no parameters were significantly changed in late compared to early postmenopausal women. Table-IV.

Table IV: Comparison of BMI& biochemical changes between early and late postmenopausal women, n=93

Parameters	Early menopause n=20	Late menopause n=73	p-value
Age in yrs	49.75 ±1.41	55.38 ±5.94	<0.001*
BMI	26.58 ±3.40	26.76 ±2.68	0.812
Total Calcium (mg/dl)	7.17 ±0.16	7.16 ± 0.14	0.608
Total protein (g/dl)	6.72 ±1.25	6.69 ± 0.80	0.895
Albumin, (g/dl)	3.33 ±0.21	3.27 ±0.23	0.251
ALP (U/L)	152.35 ± 7.15	153.18 ± 8.78	0.895

Pearson's correlation test was done *=significant (p<0.05)

Discussion

Bone turnover is increased at postmenopausal life as a consequence of estrogen deficiency, that may lead to osteoporosis and risk of fracture at this vulnerable age group. This study was done to measure some commonly used biochemical parameters of bone turnover to assess risk of osteoporosis at postmenopausal women and compared with premenopausal women.

There were 93 postmenopausal women with mean age 54.17 years and 69 premenopausal women with mean age 29.48 years. Mean age of early and late post menopause were significantly 49.75 and 55.38 years Mean BMI of postmenopausal women was 26.72, though significantly higher than that of premenopausal women, which was 24.90, yet the difference was small in magnitude.Mean BMI of early and late post menopause were 26.58 and

26.76 years. Similar findings of age and BMI were observed in study by Indumati et al (2007)[8].Increasing trends of BMI in postmenopausal state may be due to redistribution of fat from buttock to abdominal region due to lack of estrogen. Postmenopausal women are supposed to have reduced RMR. Decreased energy expenditure with no change or increased energy intake may be responsible for positive energy balance and increased body fat mass. Waist circumference(WC) was not measured and thus, in perspective of similar BMI in early and late post menopause, probability of abdominal obesity could not be evaluated.

Mean blood level of total calcium in this study was 7.16 mg/dL, significantly lower compared to premenopausal women, 9.52 mg/dL. This finding was consistent with studies by Khadka et al (2017), Pardhe et al (2017), and Singh et al (2017)[14,15,9]. Decreased serum calcium may be related to increased requirements in postmenopausal women to adjust osteoporosis and decline in intestinal calcium absorption due to potential vitamin D deficiency in old age women. Reduced total protein and albumin may also be responsible for reduced total calcium as about 40% of total blood calcium is protein bound.

Mean serum total protein was 6.70 g/dL in postmenopausal women significantly reduced compared to premenopausal women, 8.14 g/dL. Mean serum albumin was significantly reduced in postmenopausal women, 3.28 g/dL compared to premenopausal women, 4.51 g/dL. This finding was similar to study by Deepthi and Narayan (2015)[10], showing significantly reduced serum total protein and albumin in postmenopausal women compared to premenopausal women.There were no significant change of serum total protein and albumin between early and late postmenopausal women, though both were at lower limit of normal. Mean serum total protein was 6.72 g/dL and 6.69 in early and late postmenopausal women respectively. Mean serum albumin was 3.33 g/dL in early compared to late premenopausal women, 3.27 g/dL. Decreased total protein and albumin in our study might be related to inadequate intake of protein rich foods as well as reduced total calorie intake that may lead to negative nitrogen balance in old age. Mean serum total calcium was significantly reduced in postmenopausal women, 7.16 mg/dL, compared to premenopausal women, 9.52 mg/dL.This was consistent with study by Khadka et al (2017)[14]. In that study, total calcium in post menopausal women was significantly reduced, 8.53 mg/dL, compared to premenopausal women, 9.23 mg/dL. Similar results were observed in studies by Pardhe et al (2017)[15], and Singh et al (2017)[9]. Reduced calcium level in postmenopausal women may be related to increased requirement with decline in intestinal calcium absorption due to potential vitamin D deficiency and less intake in older women. Decreased serum calcium may indicate risk of osteoporosis in postmenopausal women.

Mean serum alkaline phosphatase level was significantly higher in postmenopausal women, 153.0 U/L, compared to premenopausal women 66.1 U/L. Similar result was seen in studies by Bhattrai et al(2013), Rai et al (2014), Singh et al (2017)[16,13,9]. Moderate rise of ALP indicates a mineralization defect in postmenopausal women. The increase in ALP levels may be due to hormonal changes including effect of parathyroid hormone on bone to maintain calcium homeostasis. Mean serum alkaline phosphatase level was 152.35 U/L and 153.18 U/L in early and late post menopausal women and no significant difference was observed. This was similar to study by Indumati et al (2007)[8]. Probably postmenopausal changes in altered calcium homeostasis was related to hormonal changes of menopause irrespective of early or late postmenopausal state.

It may be concluded that serum calcium, total protein and albumin were significantly decreased andalkaline phosphates level was significantly increased in postmenopausal women compared to premenopausal women. These common biochemical parameters can help early and cost effective assessment of probable future risk of osteoporotic fractures on trivial trauma in old age. Monitoring bone status with common biochemical parameters can serve as a screening measure in early intervention against excessive bone loss in postmenopausal women.

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ORIGINAL ARTICLE

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Effect of Diclofenac on Antihypertensive Efficacy of Amlodipine and Losartan

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Abstract

Non-steroidal anti-inflammatory drugs (NSAIDs) like Diclofenac may increase blood pressure (BP) and blunt the effects of many antihypertensives such as Amlodipine and Losartan. It seems that NSAIDs and antihypertensive drugs differ in their propensity to such an interaction. A prospective clinical trial was conducted on 26. hypertensive patients with or without osteoarthritis. 13 were treated with Amlodipine + Diclofenac and 13 were treated with Losartan+Diclofenac for 3 months with one month wash out period after first month and resumption of the Diclofenac replacing the rescue agent Paracetamol after 2nd month. When Amlodipine was used combined with Diclofenac, BP increased by 0.6% (p= 0.79) from baseline after 1 month, while decreased by 6.8% (p:.001) when Diclofenac was replaced by Paracetamol as rescue agent for 1 month and further increased by 4.3% (p = 0.18) at the end of 3rd month, resuming Diclofenac, withdrawing Paracetamol. When Losartan was combined with Diclofenac, BP increased from baseline by 7.5% (p = 4.69) after 1 month, decreased by 11.8% (p = 0.003) in washout period, again increased by 9.7% (p = 0.006) resuming Diclofenac in place of Paracetamol. The change in BP was consistent during co-administration of NSAIDs with antihypertensive drugs used in the Study. It was observed that there was significant increase of BP at the end of study when Losartan was combined with Diclofenac (p < 0.0001).To assess probable contribution of fluid and salt retention for BP change, weight change was studied before and after each phase. Diclofenac blunts the effects of antihypertensive drugs while Paracetamol is almost inert. Interaction of NSAID was more with Losartan than with Amlodipine administered in combination with Diclofenac.

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Introduction

Arterial hypertension is the most important preventable cause of premature death and disability1. Although its treatment is very effective and well tolerated, sometimes, the practical achievements are not satisfactory for two main reasons: inadequate medication (noncompliance, inappropriate prescription) and interferences (untoward life style, co-medication with prohypertensive agents, pharmacokinetic and/or pharmacodynamic drug interactions)[1]

In Bangladesh, prevalence of hypertension with systolic blood pressure (sBP) >140 mmHg was 10.5% and with diastolic blood pressure (dBP) > was 9.0%)[2]. The most common diseases diagnosed in male >50 years of age are coronary artery disease (CAD), dyslipidaemia, hypertension, type 2 diabetes, enlarged prostate and osteoarthritis[3]. Osteoarthritis is responsible for a huge burden of pain and disability in people. It is characterized by degeneration of articular cartilage and simultaneous proliferation of new bone, cartilage, and connective tissue[4].

Rheumatic disorders are common causes of morbidity, disability, and work loss in rural and urban communities of Bangladesh[5]. Females are at higher risk of developing osteoarthritis than elderly male[3] It is uncommon in adults under age 40 and highly prevalent in those over age 60 [6].

The prevalence of osteoarthritis is higher in the urban affluent community than in the rural and urban slum. Antihypertensive drugs appear to be affected to variable degrees by NSAIDs. Diuretics, angiotensin-converting enzyme inhibitors (ACEIs), beta-blockers, and angiotensin II receptor blockers (ARBs) are most susceptible to the hypotensive nullifying effects of NSAIDs. The hypertensive effect of NSAIDs varies depending on the specific NSAID used and the type of antihypertensive agent, if they are taken concurrently[7]. More than five days of treatment with either drugs are normally required for the interaction to manifest [8].

Some NSAIDs are more prone to elevate blood pressure than others. On the other hand some antihypertensive drugs are more susceptible and others are more resistant to the interaction with NSAIDs. There are considerable number of patients with coexisting hypertension and osteoarthritis. Among NSAIDs Diclofenac is mostly

used in due to their low incidence of gastrointestinal adverse drug reactions and short half lives. On the other hand, calcium channel blockers and ARBs are two commonly used antihypertensive drugs, particularly in elderly people. In this perspective, we selected Diclofenac and two antihypertensive drugs to assess their interaction and subsequent effect of NSAIDs on BP lowering effects. This might be helpful for the physicians to rationally prescribe concurrent antihypertensive and NSAIDs in patients suffering from hypertension with concomitant osteoarthritis.

Materials and Methods

It was a prospective parallel group study carried out in the outpatient department of Medicine of MAG Osmani Medical College Hospital, Sylhet from 1st July, 2011 to 30in June, 2012. Diagnosed hypertensive patients with osteoarthritis attending at the medicine outdoor of MAG Osmani Medical College Hospital were the study subjects. Inclusion criteria was (a)hypertensive persons with concomitant osteoarthritis, requiring regular intake of NSAIDs. (b) age =>40 years.

Patients unable to tolerate withdrawal of their osteoarthritis therapy, Those unwilling to participate and uncooperative persons, Patients with HTN taking NSAIDs due to other arthritis other than OA, organ dysfunction (bronchial Asthma, COPD, renal failure, liver failure etc.) and other co-morbid condition as DM., hypersensitivity to tolerate any of the drugs studied were excluded.

Informed verbal and written consent was taken from each of the patients before taking any interviews. All information was collected confidentially with complete respect to the patient wish and without any force or pressure. After selection of the subjects, the objectives, nature, purpose and potential risk and benefits of all procedures used for the study was explained in details to the patients and informed written consent was taken from agreed patients. The study participants were divided into two groups, All were hypertensive patients with concomitant osteoarthritis.

Each patient was studied through 3 study periods (phases) of one month duration each. Before administration of NSAIDs when only antihypertensives were being taken, this period was phase 0.

In the first month (phase 1):

Group-I was treated by Amlodipine and Diclofenac,

Group-II was be treated by Losartan and Diclofenac

In second month (phase 2) NSAIDs of first month were replaced by Paracetamol and in third month (phase 3) NSAIDs of first month were resumed by replacing Paracetamol.

Blood pressure was measured in the supine, sitting and standing position with standard mercury sphygmomanometer, at the inception (phase 0; baseline), and at the end of the first month (phase1) , of the second (phase2), and of the third study month (phase 3). Mean blood pressure was calculated. The patients were advised to continue the dose of standard Amlodipine and Losartan on which they were on. The dose of the both drugs were not modified further during the study.

NSAIDs - Diclofenac 50mg twice daily [9].

Paracetamol 500mg three times daily (Boureaul et al 2004).

Patients were monitored at the inception, at the end of each phase for hypersensitivity, side effects and any type of morbidity.

Results

There were 26 study subjects, 13 females (50%) and 13 males (50%),In table-I Baseline characteristics were presented: There were two groups. Group 1 was treated with Amlodipine and Group 2 by Losartan. In Group 1, 9 were female (64.3%) and 5 were male (35.7%), aged 52.8±9.5 years with body weight 61.7±6 kg, and there lying mean BP at the inception of this study was 107.7±6.6 mm Hg whereas in Group 2, 5 were female (35.7%) and 9 were male (64.3), aged 52.7±9.6 years, weighting 67.6±5.6 kg, and there lying mean BP at the inception of this study was 111 ±6mm Hg.

Table I: Baseline Characteristics of the study subjects

Study Group Parameter	Group-1 (Am+D)	Group-2 (L+D)
Randomized (n)	13	13
Male/Female (n)	10/13	9/4
Age (Years: Mean ± SD)	57.9 ± 11.5	54.9 ± 12.2
Weight (Kg: Mean ± SD)	66.5 ± 7	68 ± 4.7
Lying Mean Bp (mm Hg : Mean ± SD)	109.2 ± 7.4	111.2 ± 6.4

During phase1 all the patients of both groups were treated with Diclofenac.

Table III represents the change in mean BP of the study groups in different phases during the study period. Group-1 exhibits insignificant change of mean BP.There were significant change of BP in group 2 .

Table III: (Lying Mean) Blood Pressure Change in different phases

		Phases				
Group		Phase-0	Phase-1	Phase-2	Phase-3	ANOVA P
	Group- 1 (AM+D)	109.23±7.44	109.87±9.71	102.38±6.51	106.85±6.26	0.064
	Group-2 (L+D)	115.15±6.40	119.51±5.24	105.62±6.31	115.62±6.69	<0.0001

Comparison of BP changes between the phases for each group was presented in table IV (paired t test).

For group-1, combination of Diclofenac with Amlodipine results in an increase of mean baseline BP by 0.64% (0.7 mm Hg) after phase-1. The increase in BP was not significant in phase-1. Whereas after phase-2 replacing Diclofenac by Paracetamol BP was decreased by 6.82% (7.5 mm Hg) from Phase-1. The change in BP with respect to baseline BP was significant (P=0.001). After phase-3 where Diclofenac was reintroduced in place of Paracetamol the BP increases by 4.3% (4.4mm Hg) relative to phase-2 and the change in BP with respect to baseline was not significant.

Table IV : Comparison of paired Observations

Group	Mean BP(±SD) in different phases			p values
	Phase 0	Compared Phases	Mean BP	
I (AM+D)	109.2 ±7.4	PI	109.9 ±9.7	0.79
		P2	102.4 ± 6.5	0.001
		P3	106.8 ±6.3	0.18
I2 (L+D)	11 1.2 ±6.4	PI	119.5 ±5.2	4.69
		P2	105.4 ±6.3	0.0003
		P3	115.6 ±6.7	0.006

Paired t test done. PO.05 was considered as significant.

For group-2 application of Diclofenac with Losartan results in an increase of mean baseline BP by 7.46% (8.3mm Hg) in phase-1. Change in BP was not significant in phase-1. Whereas in phase-2 BP was decreased by 11.8% (14.1mm Hg) from Phase-1. The change in BP with respect to baseline BP was significant (P-0.0003). In phase-3 the BP increases by 9.68% (10.2mm Hg) relative to phase-2 and the change in BP with respect to baseline was significant (P=0.006).

The relative changes between G-I (AM+D) was insignificant whereas change of G-II (L+D) , relative to G-I (AM+D) were significant (Pm=0.002, PIV=0.001). Interaction of NSAID Diclofenac with Losartan was reflected by more increase blood pressure .

Discussion

Non-steroidal anti-inflammatory drugs are blamed to attenuate the efficacy of some antihypertensive drugs. They may increase BP of normotensive osteoarthritis patients on prolonged use or they may have negative influence on BP lowering effects of some antihypertensive drugs. Osteoarthritis and primary hypertension are two diseases that are common in old age. In a substantial number of patients both co-exist and both demand long term treatment for symptomatic well being and to avoid morbid consequences. We studied one mostly prescribed NSAID for its effects on efficacy of two popular groups of drugs for treatment of hypertension. Diclofenac is mostly prescribed NSAIDs for long term use. Amlodipine (calcium channel blocker) and Losartan (Angiotensin receptor blocker) are two commonly prescribed antihypertensive drugs. The aim of our study was to evaluate the influence of Diclofenac on BP lowering effect of Amlodipine & Losartan, and to assess the better combination option for co-existent osteoarthritis and hypertensive patients.

The decrease of BP for both groups were consistent with the influence of NSAID on BP lowering effects of antihypertensive drugs. For Diclofenac combined with Amlodipine, BP increased 0.6% from baseline. There was 6.8% decrease in BP when Diclofenac was replaced by Paracetamol as rescue agent (p=0.001). Again BP was increased by 4.3% with reintroduction of Diclofenac replacing the rescue agent. For Losartan combined with Diclofenac 7.5% increased BP seen from baseline after 1 month. Decrease in BP by 11.8% was seen in washout period (P=0.0003) and again 9.7% increased BP noted with reintroduction of Diclofenac. (shown in table-II, IV).

The prohypertensive effects of NSAIDs presumably depend on several mechanisms.[1] Almost similar BP changes were observed during different phases of other studies[1,11]. In our study after 3 months (end of phase 3), there was more significant increase of BP in case of

Losartan than with Amlodipine combined with Diclofenac. Probably NSAIDs differ in influence on BP lowerng efficacy of calcium channel blockers and ARBs, implicating the better combination of NSAIDs (Diclofenac) with Calcium channel blockers than with ARB. To assess the probable mechanism of NSAIDs on BP elevating influence, we measured weight changes of study subjects in different phases. Though we didn't measure serum electrolytes, it is supposed that fluid retention usually follows electrolytes. There was no significant weight changes in our study in any phase (shown in table-Ill), implicating that, probably the NSAIDs do not influence on BP elevation by fluid and salt retention.

In a study by Koopmans, Thien and Gribnau (1987), to see the influence of Ibuprofen, Diclofenac and Sulindac on BP lowering effect of Hydrochlorothiazide, there were no significant change in biochemical parameters like plasma electrolytes, plasma renin activity, aldosterone, albumin and creatinine or 24 hour urinary excretion of sodium and potassium[12]. Since we didnot observe a significant increase in body weight during intake of NSAIDs combined with antihypertensive drugs, probably the observed BP elevation was largely due to vasoconstriction might be related to inhibition of vasodilatory prostaglandin synthesis by COX- inhibition of NSAID and less so to volume expansion.

There was some studies where no significant influence of NSAIDs seen on BP[13]. Though there was significant influence of NSAID in our study on BP lowering efficacy of antihypertensives, it is not certain about its significance about decision taking for its discontinuation. It is also not certain about the magnitude of BP change by NSAID that might be harmful to continue the combined therapy. It was estimated that a 5 to 6 mmHg increase in diastolic BP maintained over a few years may be associated with a 67% increase in total stroke occurrence and a 15% increase in events associated with coronary heart disease[14]. It has been estimated that the avoidance of minor change in systolic BP in pts with osteoarthritis, subjected to treatment with NSAIDs would avoid over 30000 deaths due to MI in United States alone[8]

Conclusion

Non-steroidal anti-inflammatory drugs are widely prescribed and are associated with blood pressure elevation. The hypertensive effect of NSAIDs varies depending on the specific NSAID used and the type of antihypertensive agent, if they are taken concurrently. From our study NSAID Diclofenac attenuate the BP lowering efficacy of antihypertensives Amlodipine and Losartan. Among the combination of NSAIDs and antihypertensives, Amlodipine(Calcium channel blocker) is better than ARB like Losartan in combination with Diclofenac.

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ORIGINAL ARTICLE

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Outcome of V- Y Anoplasty for Anal Stenosis : Our Experience in SOMCH

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Abstract

Anal stenosis is rare condition but here in our country, it is not that much uncommon as lots of local fake doctors treat anal condition with guarantee which leads to development of anal stenosis in the long run. As an ideal surgical procedure is yet to defined soit pose a technical challenge in terms of surgical management . Among the many surgical procedures, flap reconstruction is becoming the surgery of choice for its satisfiable outcome .So The aim of this study is to see the effectiveness of V- Y anoplasty flap for treating moderate to severe anal stenosis. A prospective observational study conducted at surgery unit III of Sylhet MAG Osmani Medical College Hospital from January 2012 to December 2019 on 6 patients with moderate to severe anal stenosis. Six male patients with a median age of 36 years ranging from 25 - 64 years were treated. Four of them had a historyof previous hemorrhoidectomy and Two had previous history of maltreatment for hemorrhoids. 2 patients had moderate anal stenosis and 4 had severe anal stenosis. Two patient had developed wound infection Among them one had partial flap loss at the angle of V" . All patients had satisfactoryoutcome. V-Y Anoplasty is a safe and effective method of surgery with acceptable results in relieving symptoms of patient who suffered from anal stenosis for various region.

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Introduction

Anal stenosis is a rare but serious complication of anorectal surgery, 90% of which is seen following hemorrhoidectomy[1]. Other causes include trauma, inflammatory bowel disease, post radiation, sexually transmitted disease, tuberculosis and some skin conditions like scleroderma.

Following hemorrhoidectomy, removal of excess anoderm and mucosa without adequate skin bridges leads to scarring and stricture. It occurs following stapled hemorrhoidopexy (0.8-5%)[2] and low coloanal anastomoses also. Ninety percent of anal stenosis is caused by overzealous hemorrhoidectomy[3]. Removal of large areas of anoderm and hemorrhoidal rectal mucosa, without sparing of adequate muco-cutaneous bridges, leads to scarring and a progressive chronic stricture. Other surgical procedures responsible for anal stenosis are excision and fulguration of anorectal warts, endorectal flaps or following proctectomy particularly in the setting of mucosectomy.

In Bangladesh, many local kobirajs as well as many centers run by quacks or village doctors treat anal conditions with applying acids over the lesion which ultimately leads to fibrosis, thickening and stenosis.

Chemo radiation in a patient with anal carcinoma or following removal of a pelvic tumor may lead to stenosis if a wide area of skin and anoderm is irradiated. Inflammatory bowel disease especially Crohn's disease leads to annular stricture of anorectum[4]. These stenoses are characterized by transmural scarring and inflammation. Patient with anal fissure or who abuse paraffin laxative may develop a disuse stenosis[5]. Sepsis or ischemia from occlusion of lower mesenteric artery or superior rectal artery may lead to stenosis also.

Patient can present with acute anal stenosis determined by a severe and sudden spasm of persistent pain. These spasms are dynamic and reversible.

Post-surgical patients usually present as chronic anal stenosis. Here spasms are adynamic and irreversible6. Thus, the anal canal progressively reduces its diameter. Such patients present with increasing difficulty in defecation. The patient finds that increasingly large dosage of aperients is required and if stools are formed, they are pipe stem in shape.

Anatomical anal stenosis may be classified on the grounds of stricture severity, its structure and the level of involvement in anal canal.

Table I Grading of anal stenosis

Mild	Tight anal canal can be examined by a well lubricated index finger or a medium Hill- Ferguson retractor
Moderate	Forceful dilatation is required to insert either the index finger or a medium Hill- Ferguson retractor
Severe	Neither the little finger nor a small Hill- Ferguson retractor can be inserted unless a forceful dilatation is employed

Stenosis can be diaphragmatic (after inflammatory bowel disease, characterizedby a thin strip of constrictor tissue), ring like or annular (after surgical or traumatic lesions of length < 2cm) and tubular (length >2cm)[9].

On the basis of anal canal levels, stenosis can be low anal stenosis (distal anal canal at least 0.5cm below the dentate line, 65% of patients), middle (0.5cm proximal to 0.5cm distalto

dentate line, 18.5%), high (proximal to 0.5cm above the dentate line, 8.5%) and diffuse (full length of anal canal, 6.5% of cases[10].

Diagnosis of this condition can be done byphysical examination and its often confirms the diagnosis. Digital rectal examination gives most of the information like, a sharply defined shelf like interruption of the lumen, caliber is large enough to admit the finger, whether the stricture is annular or tubular[11]. As it can be very painful, this examination may need anesthesia and biopsy may be taken if malignancy is suspected. Anorectal manometry[12] is an objective method for assessing anal musculature tone which is rarelydone.

Treatment option is graded and should be modulated based on severity of anal stenosis. Mild type of stenosis can be managed conservatively with stool softeners or adding fiber supplements with it.Ocassionallydaily digital or mechanical anal dilatations may be needed. For moderate type of stenosis sphincterotomy of any form which could be again supplemented by stool softener or laxative. may be quite adequate. For severe type of anal stenosis, any type of anoplasty could be performed to replace the fibrotic anal canal tissue with normal peri anal tissuetreat.There are several techniques such as lateral mucosal advancement flap, Y-V advancement flap, V-Y advancement flap, Diamond shaped flap, House flap, U flap, C flap, Rotational S flap, Internal pudendal flap anoplasty, Foreskin anoplasty[13] .But the choice of the procedure should be guided by the type and extension of the stenosis. But as a general rule the simple procedure should be chosen first. Also procedure with less complication get the priority. Familiarity of procedure with the surgeon is also important. But The best one is yet to be discovered.

The aim of anoplasty is to restore normal function of the anus by dividing or excising the stricture and as a result widening the anal canal, thus decreasing the symptoms and relief of pain[9].

Many complications have been reported after anoplasty including flap necrosis from loss of vascular supply, infection or local sepsis, suture dehiscence from excessive suture line tension, failure to correct the stenosis, donor site problems, sloughing of the flap, ischemic contracture of the edge of the flap, pruritus. Fecal incontinence, constipation, urinary retention, restenosis and ectropion (if the flap is advanced too far and sutured at the anal verge) are also some notable adverse outcome[14].

In this study, we evaluated the success rate of Y-V anoplasty in management of severe anal stenosis.

Materials and Methods

This prospective observationalstudy was conducted at Sylhet MAG Osmani Medical College Hospital from January 2012 to December 2019. Inclusion criteria were patient diagnosed as a case of moderate to severe anal stenosis following post hemorrhoidectomy or any maltreated anal conditions.

Exclusion criteria were anal stenosis resulting from inflammatory bowel disease, Tuberculosis, prior radiotherapy, anal malignancy or previous anoplasty. Convenient sampling followed for the study. After proper counselingand taking informed written consent they were prepared for V-Y anoplasty.

Every patient has given a preoperative preparation consisted of low residual diet 2 days prior to and non residual diet 1 day prior to surgery. On the morning of surgery, enema was given per rectally for rectal wash out.Enema also given on the night before surgery. All patients received preoperative ceftriaxone 1 gm and metronidazole infusion 500mg few hours before the procedure.

This procedure is performed in lithotomy position. After maximum anal dilatation with a medium Hill- Ferguson retractor, the fibrotic segment is excised and again the retractor introduced to see the adequacy of anal caliber. Size of the flap was then determined by the area of stenosis. The V flap is created and advanced to the defect and sutured in Y fashion using delayed absorbablesuture[15,16]

All this flap done in posterior midline. Flap canalso be constructed in lateral position and also bilaterally to relieve the stenosis.

V-Y flap get its vascularity from the vascular subcutaneous fat[17,18].

Thus it is necessary to preserve fatty subcutaneous tissue with wide mobilization to maintain flap viability.

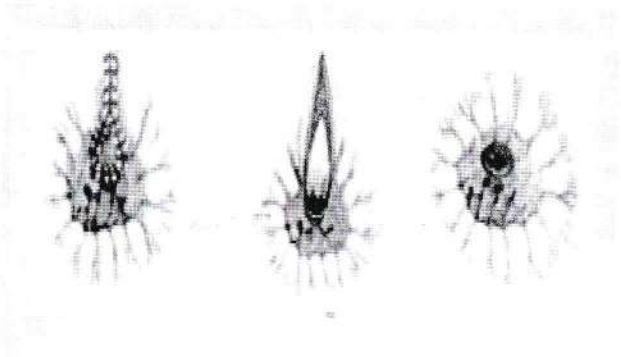

Figure 1: V-Y anoplasty

Postsurgical management consists of oral antibiotics for seven days, pain control by NSAIDS and fiber supplements . First dressing change done on 2ndpost operative day for any bleeding or flap related complication. Local hygiene ensured by generous wash after defecation and dressing with povidone iodine solution. In the post-operative period, a constipating regimen was recommended for 7 days. Antibiotic therapies were continued for 7 days. Patients were discharged home on 5thpost operative day. Patients were followed on 10thand 14thpost operative days. Stitches were removed on 14thpost operative day.

Results

Six male with a median age of 36 years ranging from 25 - 64 years were treated.

Table I: Patients Demography

Variables	Frequency	Percentage
Age		
25-35 years	1	16.67%
36-45 years	2	33.33%
46- 55 years	2	33.33%
56-65 years	1	16.67%
Male: Female	6:0	100%

Among the six patients, 3 had history of previous hemorrhoidectomy and the other 3 was previously maltreated for anal conditions.

Table II: Etiology

Variable	Frequency	Percentage
Post hemorrhoidectomy	3	50%
Maltreatment	3	50%

Two patients had moderate anal stenosis and 4 had severe anal stenosis.

Table III: Grading of anal stenosis

Grade	Frequency	Percentage
Mild	0	0
Moderate	2	40%
Severe	4	60%

One patient with severe stenosis developed wound infection following surgery on 9thpost- operative day. None of the patient developed flap necrosis except one who developed partial flap necrosis. The patient was managed conservatively and wound healed satisfactorily after weeks. Postoperative hospital stay was 3 days.

Table II: Post-operative outcome

Variables	Frequency	Percentage
Wound infection	1	16.67%
Wound disruption	0	0
Partial flap necrosis	1	16.67%
Complete flap necrosis	0	0
Re stenosis	0	0

Discussion

The choice of a rational procedure is depend on the extent and severity of the stenosis as it may involve the skin, transitional zone to dentate line, anal canal or all of these.

Gulen M et al7 conducted study from January 2011 to July 2013, 18 patients (12 males, 67%) with a median age of 39 years (range 27-70) were treated. All of the patients had a history

of previous hemorrhoidectomy. Five patients (28%) had moderate anal stenosis and 13 (72%) had severe anal stenosis. Preoperative, intraoperative, and 12-month postoperative anal calibration values were 9 ± 3 mm (range, 5-15), 25 ± 0.75 mm (range, 24-26), and 25 ± 1 mm (range, 23-27) ($p < 0.0001$, for immediate postoperative and 12-month postoperative anal calibers compared with the intraoperative).Our result has similarity with them in regards to the age distribution and distribution of the severity of the disease.Wedid'nt do any post operative calibration measurement instead we did clinical assessment for the patient.

During a 4-year period, Angelchik et al[17] managed 19 patients who had anal stenosis (n= 14) or anal ectropion (n = 5). 18 of these patients had prior ano-rectal surgery. They employed a Y-V anoplasty or advancement diamond-shaped pedicle flap and obtained satisfactory to excellent results in all patients.They compare both the procedure and find both are satisfactory for anal stenosis.

Milson JW and Mazier WP19 in their seminal paper on classification and management of anal stenosis urged that severe low anal stenosiswas best treated by V-Y anoplasty(18 of 20 patients,90%) with good result.They also added sphincterotomy(single or multiple) to achieve good outcome.And they advocate single or multiple internal anal sphincterotomies for mild to moderate low anal stenosis and V-Y anoplasty for severe low anal stenosis. In our study we only perform V-Y anoplasty and got good anal canal caliber so no added sphincterotomies were needed.

In our series, during the five years' time period we have done only 6 cases which is not very rational to compare with other series at this moment. But with this outcome and complications, it can be said that outcome is

V- Y anoplasty is comparable.

Anoplasty should be part of the armamentarium of colorectal surgeons for treating severe anal stenosis. The anatomic configuration of the anorectum and perianal region is very complex and knowledge of this area is essential before performing any surgical procedure.

V-Y anoplasty delivers more anoderm into the anal canal to fill the defect that results after cutting of fibrous scarring. Internal anal sphincterotomy is required to ease anal dilatation. Flap preparation is important forthe success of the procedure. It is necessary to preserve much subcutaneous fat and wide mobilization to maintain flap viability and avoid suture line tension.

So V-Y anoplasty is easy procedure with low complication rate and can be used for severe anal stenosis.

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ORIGINAL ARTICLE

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Clinical Profile of Patients with Hepatocellular Carcinoma 97 cases

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Abstract

This study was designed to see clinical profiles of hepatocellular carcinoma (HCC) in North-East part of Bangladesh. Consecutive patients, diagnosed as hepatocellular carcinoma in North East Medical College, Sylhet from January 2015 to January 2020were included. Their demographic data, clinical presentation and laboratory reports were recorded. Diagnosis was made on the basis of clinical findings, laboratory reports including alphafetoprotein, ultrasonography with or without cytophatology. Of total 97 patients 80 (82.5%) were male and 17 (17.5%) were female. Age of them varied from 24 years to 82 years (mean 53.6).Common presenting symptoms were abdominal pain in 60 (61.4%), ascites in 39 (40.2%), anorexia in 29 (29.9%), odema in 20 (20.6%). In this group 84 patients (86.6%) were from rural areas. Among them 78 (80.4%) were from poor economic condition. Hepatocellular carcinoma is more common among males. Older age group and lower economic status are other associated factors.

[OMTAJ 2019;18(2)]

Introduction

Hepatocellular carcinoma (HCC) is the most common primary liver cancer[1]. Liver cancer is the fifth most common cancer in the world with poor prognosis and second most common cause of cancer death[2]. According to GLOBOCAN 2012 data, worldwide, HCC is the 5thmost common malignancy in male and 9th most common malignancy in female, and 82% of HCC occurs in developing countries. It occurs more commonly among males than females[3].

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The most common age at presentation is usually between 30 and 50 years[19]. Incidence of HCC is higher in Asian countries[3]. It is more common among poor people[15]. HCC usually develop within a background of chronic hepatitis and etiology HCC varies in different areas of the World.In Bangladesh cancer registrars is not so accurate but Rahmanet. al. reported that incidence of HCC among liver disease varied from 1-8% with regional variation[4]. Another report shows that hepatitis B induced hepatitis is responsible in about 66% cases of HCC[5]. In our country due to poor surveillance system majority of cases are detected in advanced stages. With this background this retrospective study was done to see the clinical profiles of HCC patients in north east part of Bangladesh.

Materials and Methods

Data of all patients diagnosed as HCC in North East Medical College, Sylhet from January 2015 to January 2020 were retrieved from registrar of department of Gastroenterology. Their particulars, presenting symptoms, clinical findings and investigations reports were entered inclinical data sheet. Diagnosis was made on the basis of either alone or in combination of following i) history of chronic hepatitis, ii) presence of hepatitis B and hepatitis C viral markers, iii) imaging report including features of chronic hepatitis, iv) heterogenous hepatic parenchyma, space occupying lesion, v) serum alpha-fetoprotein level vi) report of fine needle aspiration cytology

Results

Total 97 patients were included. Age of them varied from 24 years to 82 years (mean 53.6 and SD± 14.04). Among them 80 (82.5%) were male and 17 (17.5%) were female. In this series 13 (13.4%) were from urban areas and 84 (86.6%) were rural areas. Among them 78 (80.4%), 17 (17.5%) and 02 (2.1%) were from poor, middle class and higher economic group respectively. In this series 14 (14.4%) were diabetic and 13 (13.4%) were hypertensive.

Common presenting symptoms were abdominal pain in 60 (61.4%), ascites in 39 (40.2%), anorexia in 29 (29.9%), odema in 20 (20.6%), respiratory distress in 17 (17.52%), lump in abdomen in 12 (12.37%), jaundice in 10 (10.3%) and feature of decompensated cirrhosis in 7 (7.21%).

In this series 16 patients (16.94%) were previously known to have been suffering from chronic hepatitis. In this group 33 (34.02%) patients had hepatitis B surface antigen positive (among 52 patients who were investigated for hepatitis surface antigen.)

Only 17 patients were investigated for hepatitis C virus two (11.76%) were found to be positive.

Ultrasonography (USG) showed coarse or brighter parenchyma (features of CLD) 59 cases (60.83%) with or without space occupying lesion (SOL). Single space occupying lesion (sSOL) in 41 (42.27%) and multiple space occupying lesion (mSOL) in three cases (3.1%). Sonologically coarse heterogenous parenchyma was found in 21 (21.64%) cases. Ascites, portal vein thrombosis, splenomegaly and cholelithiasiswere found in 54 (55.67%), 30 (30.92%), 40 (41.23%) and 5 (5.155) respectively.

Endoscopic examination showed oesophagealvarices in 22 (33.33%), Fundal varices in 2 (3.03%) and peptic ulcer disease in 4 (6.06%) out of 66 cases undergoing investigation.

Alpha-feto protein was upto 250ng/dl in 13 (13.4%), 250-520ng/dl in 15 (15.5%) cases and above 520 in 69 (71.2%). HCC was found more common among age more than 50years group (57; 58.8%). Fine needle aspiration cytology (CT guided) was done in 31 cases (31.96%) with cytological confirmation.

Diagnosis was done on the basis of history of chronic liver disease, clinical findings, imaging reports, viral markers, alpha-feto protein level, FNAC findings singly or in combination.

Table-I. a Epidemological profile

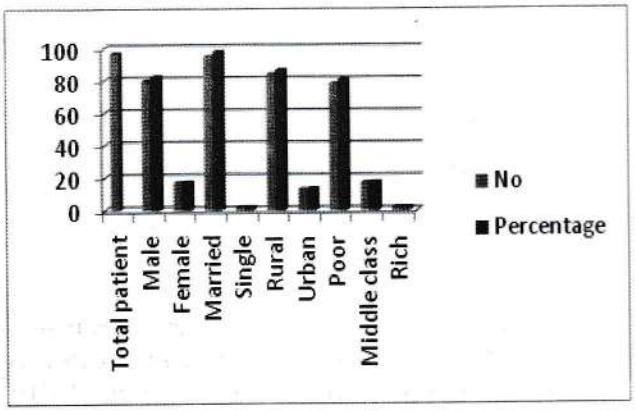

Table-I.b Epidemological profile (Age)

	No	Percentage
Total patient	97	
Age		
Range	24-82	
Mean	53.59	
Median	55	
upto30 yrs	7	7.22
31-50 yrs	33	34.02
51 yrs and above	57	58.76

Table-I.c Epidemologicalprofile(Literacy)

	No	Percentage
Total patient	97	
Literacy		
Illiterate	54	55.67
Primary	31	31.96
Secondary and above	11	11.34

Table-II Clinical symptoms

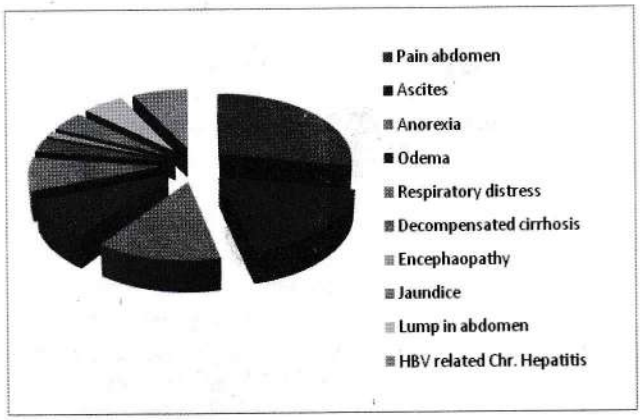

Table-III Viral markers

		No	Percentage
Total patient		97	
HBsAg	Positive	33	34.02
	Negative	19	19.59
	Not done	45	46.39
Anti-HCV	Positive	2	2.06
	Negative	15	15.46
	Not done	80	82.47

Table-IV Alphafetoprotein

		No	Percentage
Total patient		97	
Alpha-feto Protein	values(ng/dl)		
	250	13	13.40
	250-520	15	15.46
	520	69	71.13

Discussion

Incidence of HCC in Sylhet Division is about 0.6%-1.36% of liver diseases[4]. Incidence of HCC increases with age. In our case series more than 50% patients were from above 50 years age group. It is consistent with reports from India where HCC is more common in5th and 6th decade[6,7]. HCC is uncommon before 40 in western countries[8]. But some parts of china[9] and Africa[10], incidence of HCC is higher in early age group (30 yrs to 40 yrs) and associated with higher incidence of HBV infection.

In our study incidence of HCC is about five times higher among males than that of female. Other reports from all over the world also shows male predominance.[2,3,6,7]

Common symptoms of patients in our series are abdominal pain, ascites, odema, and anorexia which are consistent with reports from India[7,11]. In our study from Bangladesh also found abdominal pain as common presenting symptoms[12].

In this series more than two third patients had parenchymal change of chronic liver disease with or without focal lesion. It is similar to reports from India[6,7]. But one report from India[11] did not found under lying cirrhotic change in 15% of cases. In our series incidence of HCC without cirrhotic change was almost similar(17.5%). In our study hepatitis B surface was confirmed in about one third patients, where almost half of patients were investigated. Again investigation for hepatitis C virus was not done in most of cases. So any comment regarding viral aetiologly could be made. But it is to mention that reports from India and other Asian countries show higher incidence of HBV infection in HCC patients[6,9].

In our study alpha fetoprotein was more than 520ng/dl in 71% patients which is higher than Indian reports[6,7]. But the difference could not be explained. In our series ascites was found in more than half of patients which is more than two times higher than report from China[13]. Our sample size is smaller which might influenced this findings. Portal vein thrombus was found in about 30.9% which is slightly lower than other report[14]. Most of our patients are from lower socio-economic group which is consistent with Canadian report[15]. In our series, incidence ofHCC was higher among rural people which is consistent with Chinese report.[16,17] In our series most of patients had lower educationalbackground which is consistent with Chinese report[17].

Conclusion

HCC is common among males and people of older age group. Lower economic status could be an associated factor. Alpha fetoprotein rises in most of the cases.

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ORIGINAL ARTICLE

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Clinicopathological Study of Ovarian Neoplasm in a Tertiary Care Hospital

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Abstract

Ovaries are the female reproductive glands, concerned for germ cell maturation, release and hormonal function. Ovaries might have inflammatory or neoplastic diseases. Ovarian cancers are lately diagnosed and that is why prognosis is poor. Histopathological study of different ovarian tumors would generate epidemiological data for early treatment. Histopathological examinations of 189 ovarian samples were enrolled for this study. Benign lesions were in majority cases (82.5%) followed by malignant tumor (15.9%) and border line tumor (1.6%). The malignant cases were mostly reported from 40 to 50 years of age group that is female menopausal part of life. Most of the tumor was arisen from surface epithelium (75%). The national and international data were found more or less agreeing with our data in terms of age, histopathological findings & tumor varieties. The outcome of this study might help the concerned in managing the patients of ovarian lesion.

[OMTAJ 2019;18(2)]

Introduction

The pair of ovaries is the female reproductive glands or gonads which are concerned for germ cell maturation, storage and its release and steroidogenesis. The ovaries are intraperitoneal structures[1]. Like other body organs ovaries also suffer from various diseases. Infectious salpingitis is often associated with acute or chronic inflammatory process of the ovary.[2] Primary inflammations of the ovary or oophoritis are not very common. Autoimmune oophoritis occurs on rare occasions and may lead to infertility. But the most common lesions encountered in the ovary are functional or benign cysts and tumors[3]. Ovarian tumors are life threatening not only because of their anatomical locations, but also they may remain unnoticed for long period of time. Other than some benign lesions, ovaries are also a primary site for cancer[4].

Ovarian cancer is the sixth most commonly occurring gynecologic malignancies and the 7th leading cause of cancer deaths in women worldwide[5]. These secretory glands are also a lucrative site to get metastatic or secondary deposits from other abdominal cancers. There were nearly 300,000 new cases of ovarian cancer in 2018[6]. It is estimated that about 1 in 70 women have a life time risk of developing ovarian cancer[7].

Ovarian cancers are somewhat account for the disproportionate number of deaths from cancer of the female genital tract, because in most cases cancer spread beyond the ovary before the time of diagnosis[3]. Despite the new chemotherapeutic treatment modalities poor prognosis is observed in case of ovarian cancer in contrast to other malignancies. This poor prognosis has usually been attributed to the fact that at the time of diagnosis about 70.0% of ovarian cancers have already been widespread intraperitoneal metastases and five years survival is only 28.0%[8]. Extensive medical research is still underway to determine the precise etiology of ovarian tumor. Positive family history, nulliparity, smoking, obesity and fertility drugs are among those various risk factors found to be associated with ovarian cancers[9]. There is some good number of diagnostic tools including serum cancer markers, aspiration cytology or FNAC, ultrasonography with proper clinical correlation might help for a better

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diagnosis. But dilemma may arise for which histopathological examination is the ultimate gold standard. Besides, molecular genetics study is reckoned in as the improved method for screening of ovarian tumor[5].

Bangladesh is one of the most densely populated country in the world, and significant portion of the population are still remaining unaware about health care facilities. Commonly women suffer more misfortune due to any health-related complication and the fatal outcome. This research was designed to elucidate the epidemiology of various ovarian tumors in patients in this region.

Materials and Methods

This observational descriptive study was carried out in the Department of Pathology at Sylhet MAG Osmani Medical College, Sylhet from July 2017 to June 2019 for a period of two (2) years. This medical college is attached with a large tertiary care hospital, which delivers health services to large number of patients. Our study population represented by the community of a greater portion of Sylhet region. Non-probability convenient sampling technique was applied to select 189 patient for this study who were admitted in the Department of Obstetrics and Gynaecology with ovarian lesions. The tissue samples were sent from the clinically diagnosed patients of ovarian tumor to the department of pathology for routine histopathological examination. Prior conducting this research, permission from ethical committee was duly taken and the participants were properly informed. After reaching in the department the tissue specimens were immediately preserved in 10% formalin. Gross examination were done and then multiple sections taken. The specimens were processed in automated tissue processor. After that paraffin embedded sections of 3 to 5 micron thick size were isolated. Fixation in the slide followed by haematoxylin and eosin staining was done meticulously with precaution. Microscopic examinations were done. The various histopathological findings were noted for analysis.

Relevant socio demographic data were also recorded. Afterward these data were analyzed by SPSS software to draw the outcome.

Results

The youngest patient was of 13 years and the oldest one was of 85 years of age with a mean age of 39 years (±16.54). The participant's age groups are closure to each other in terms of frequency or percent

Age group	Frequency	Percent
11-20	32	16.9
21-30	38	20.1
31-40	36	19.0
41-50	42	22.2
51-60	25	13.2
61-70	12	6.3
>71	4	2.1
Total	189	100.0

Table 1: Distribution of Participants according to age group

Maximum number (n=93, 49.2%) of the participants are from the lower socio-economic condition, while lowest number of participants are from the upper class (n=17, 9%)

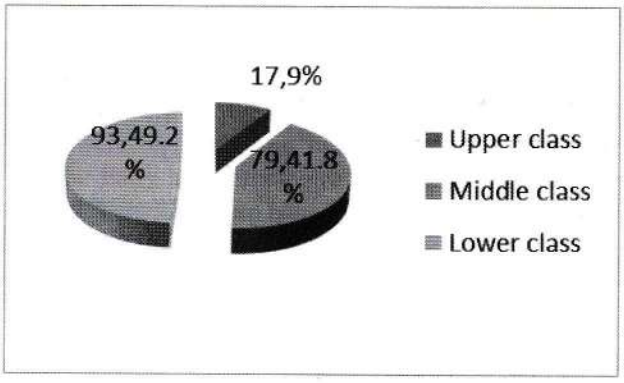

Fig I: Pie chart showing distribution of socioeconomic status

The characteristics of the lesions according to histopathological examination of the ovarian tumors revealed that 82.5% has got benign lesion with 15.9% having malignant.

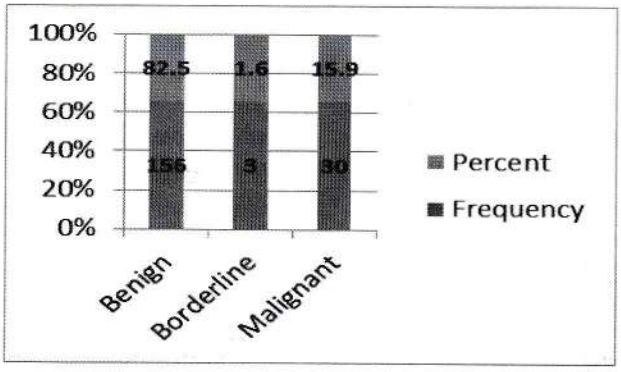

Fig II: Bar diagram showing distribution of neoplasm

Our observation yields that the 41 to 50 years age group has highest incidence of malignant ovarian tumor and second highest benign lesions.

Age group	Type of neoplasm		
	Benign	Borderline	Malignant
11-20	29	1	2
21-30	34	1	3
31-40	28	1	7
41-50	32	0	10
51-60	22	0	3
61-70	8	0	4
Ã71	3	0	1
Total	156	3	30

Table II: Ovarian neoplasm according to age group

The following table showed that serous cystadenoma was the top (33.3%) of all the varieties of neoplasm, which was closely followed by mucinous cystadenoma (27%) and teratoma (21.2%).

All the serous cystadenoma, mucinous cystadenoma, teratoma & Fibroma were of benign lesion. Either Papillary Serous or mucinous Cystadenocarcinoma were malignant. Endometroid Carcinoma, Granulosa Cell Tumor, Clear cell carcinoma, Dysgerminoma, Immature Malignant Teratoma & Malignant mixed mullerian tumor were also malignant tumor originated from ovary.

Variety of neoplasm	Frequency	Percent
Serous cystadenoma	63	33.3
Mucinous cystadenoma	51	27.0
Teratoma	40	21.2
Papillary serous cystadenocarcinoma	15	7.9
Mucinous cystadenocarcinoma	6	3.2
Endometroid carcinoma	2	1.1
Granulosa cell tumor	3	1.6
Clear cell carcinoma	1	0.5
Borderline mucinous	1	0.5
Borderline serous	2	1.1
Fibroma	2	1.1
Dysgerminoma	1	0.5
Immature malignant teratoma	1	0.5
Malignant mixed mullerian tumor	1	0.5

Table III: varieties of ovarian neoplasm.

Among the 189 patient samples, the highest numbers of cases are found to be originated from ovarian surface epithelium (75%), followed by germ cell tumor (22%) & sex chord stromal tumor (3%).

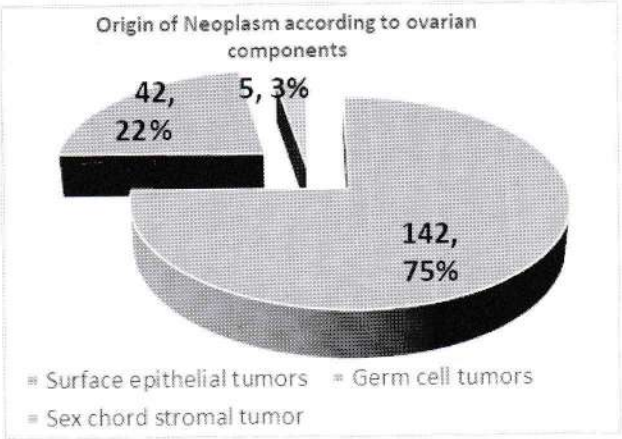

Fig III: Pie chart showing distribution of neoplasms according to ovarian components

Discussion

This observational descriptive research work enrolled 189 patients with clinically suspected ovarian patient by non-probability convenient sampling technique. We found the youngest patient was of 13 years and the oldest one was of 85 years of age with a mean age of 39 years ($sd_{\pm}16.54$). The participants age groups are closure to each other in terms of frequency or percentage which were observed as, 32 participants from 11-20 years age group, 38 from 21-30 years age group 36 from 31-40 years age group and 42 from 41-50 years age group. This observation was agreeing with the findings of different national and international studies. Swamy GG et al in India, documented that the youngest patient was of 12 years of age while the oldest was 70 years in their study of 120 cases[4]. In a Bangladeshi study on histopathological evaluation of ovarian tumor done by Deeba F et al, the mean age was found 40.6 years (ranged from 13 to 63 years) in 28 patients[8].

Manoja V et al showed the youngest participant was of 12 years of age and the oldest one was a 75 year old female in their study population (n=120) with majority of the cases (29.2%) were in the age group of 31-40 years, followed by 21-30 years age group (25%) and 41-50 years age group (18.3%)[10]. In Pakistan Khan MA showed the mean age was 29.58 years (sd± 11.49). The age range was 3-65 years, where 8 patients from below 15 years,

maximum patients (n=58) from age group 15 - 30 years[11].

Maximum number (n=93, 49.2%) of the participants are from the lower socio-economic condition, while lowest number of participants are from the upper class (n=17, 9%)

By histopathological examination of the specimens we found that 82.5% were benign lesion with 15.9% malignant lesion and only 1.6% was borderline lesion. Among the 189 patient samples, the highest number of cases are found to be originated from ovarian surface epithelium in maximum cases (75%) followed by germ cell (22%) and then sex chord cell (3%). A cross tabulation was drawn and our observation yields that the 41 to 50 years age group has highest incidence of malignant ovarian tumors and second most highest benign lesions. Swamy GG et al showed in their study that 71.6% were benign, 25.0% were malignant and 3.0% were borderline tumors. They also observed that histologically, surface epithelial tumors were the commonest (61.6%) followed by germ cell tumor (21.7%)[4]. Sarangan A observed in their 100 ovarian tumour specimens comprised of 88% benign tumours, 8% were malignant and 4% borderline; and as tumor component, surface epithelial tumors (80%) constitute the most prominent type followed by germ cell tumors[7]. Khan MA showed in their histopathological study of 95 ovarian specimens that 78.9% were benign, 1.1% were borderline and 20% were malignant, among which of them 72.6% were epithelial tumors, 23.2% were germ cell and 4.2% were sex cord stromal tumors[11]. All these outcomes were found to be similar with our study.

Histopathological study in our research revealed that serous cystadenoma was the top (33.3%) of all the varieties of neoplasm, which was closely followed by mucinous cystadenoma (27%) and teratoma (21.2%). All the serous cystadenoma, mucinous cystadenoma, teratoma & fibroma were of benign lesions. Either papillary serous or mucinous cystadenocarcinoma were malignant. Endometroid carcinoma, granulosa cell tumor, clear cell carcinoma, dysgerminoma, immature malignant teratoma & malignant mixed mullerian tumors were also malignant. Swamy GG found that the most common benign tumor was serous cystadenoma in 49 cases (40.8%). The most common malignant ovarian tumors were granulosa cell tumor and endometrioid carcinoma[4]. Deba F et al included only 28 malignant type lesion of ovary and their histopathological observation found that 16 (57.1%) cases were serous cystadenocarcinoma, 5 (17.9%) cases were mucinous cystadenocarcinoma, 1 (3.6%) case was ovarian choriocarcinoma, 1 (3.6%) case was endometrioid carcinoma, 2 (7.1%) cases were dysgerminoma and 2 (7.1%) cases were adenocarcinoma[8]. Khan MA showed among their 95 cases, serous tumors were the most common (49.5%), followed by mucinous (16.8%), teratoma (15.8%), dysgerminoma (4.2%), mixed epithelial tumor (3.2%), and some few numbers of endometroid, granulosa cell tumors, germ cell tumors mixed sex chord stromal tumors (1.1%) and fibromas[11]. However almost all those observation of ovarian lesions were found benign in maximum cases but there were chances of malignant transformation for borderline cases.

Conclusion

This study was designed for identifying the pattern of ovarian tumors prevalent in this part of our country. Patient from middle class or lower socio-economic were still remain the sufferer. Benign neoplastic lesions were observed the most common than that of malignant neoplastic lesions. Surface epithelial tumors were the leading type, followed by germ cell tumors among the histological types of neoplastic lesions. The malignant cases were reported from the peri or post-menopausal women. Early histopathological diagnosis of any type of tumor lesion could help patient for treatment intervention and thereby increasing the rate of survival.

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ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 18 Number 2

Correlation of Plasma Homocysteine with Severity and Extent of Coronary Artery Disease

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Abstract

Elevated total plasma homocysteine (tHcy) levels constitute a risk factor for coronary artery disease (CAD). A possible relationship was investigated between plasma homocysteine level and angiographic severity and extent of coronary artery disease.This study was to see thecorrelation of plasma homocysteine with severity and extent of coronary artery disease. This cross-sectional analytical study was conducted in the Department of Cardiology, Sylhet MAG Osmani Medical College Hospital, Sylhet between July 2011 and June 2013.One hundred adult patients undergoing coronary angiography were included. Total homocysteine was measured and coronary angiography was done in all patients. The mean age of the patients 50.6 ± 9.1 (range,30-70) years and 67.0% patients were in the age group of 41 to 60 years with a male-female ratio of 15.7: 1. The CADs were ST-elevation MI (43.0%), non-ST-elevation MI (21.0%), unstable angina (13.0%) and chronic stable angina (23.0%). A significant positive correlation was observed between homocysteine level and number of disease coronary artery (r=0.501; p<0.001) and Friesinger score (r=0.436; p<0.001). Plasma homocysteine level is positively correlated with angiographic severity and extent of coronary artery disease.

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Introduction

Atherosclerosis and its most common manifestation, coronary artery disease (CAD), are common causes of morbidity and mortality worldwide. By the year 2020, CAD will hold the first leading causes of disability in list of the World Health Organization.[1] It has been suggested that only one half to two thirds of risk for atherosclerotic vascular disease can be explained by classic risk factors.[2] Other risk factors that have come under scrutiny for their potential contribution include estrogen deficiency, lipoprotein (a), plasma fibrinogen, plasminogen-activator inhibitor type I, endogenous tissue plasminogen activator (tPA), C-reactive protein and homocysteine.[3]

Over the past several years, there has been evidence indicating that a moderate elevation of total plasma homocysteine (tHcy) level is a risk factor for coronary artery disease (CAD).[4] According to American Heart Association (AHA) Nutrition Committee, plasma concentrations of fasting homocysteine between 5 and 15μmol/L are considered normal. Elevated homocysteine levels are referred to as hyperhomocysteinemia [16] μmol/L or above.[5] The atherogenic mechanism of homocysteine-induced vascular damage is still not clearly understood. Some of the suggested mechanisms are the damaging effects of tHcy on endothelium, platelets, coagulation factors, and smooth muscle of the vessel wall, and oxidative modification of the LDL-cholesterol.[6,7]

Elevated levels of tHcy may stimulate proliferation of vascular smooth muscle cells and impair endothelium function. The interaction of homocysteine and endothelial cells may also increase thrombogenicity.[8]

A number of studies were reported implicating elevated plasma total homocysteine levels with disease associations, hospitalization episodes and mortality and morbidity for CAD.[9-11]A positive relationship between homocysteine and risk of myocardial infarction was seen in a large prospective community study from Norway.[12] Schnyder et al.[8]found that tHcy together with age and gender, is a strong predictor of the severity of coronary artery disease. Mirhoseini et al.[13] found a positive correlation between plasma homocysteine level and vessel score (r = 0.35; p=0.002) and extent score (r = 0.46; p =0.002).

Though works have been done in Bangladesh to evaluate hyperhomocysteinaemia as a risk factor for CHD, no angiographic correlation with total plasma homocysteine level has yet been done to determine severity of CAD. With this back ground, the present study was undertaken to find out the relationship between plasma total homocysteine and grading of coronary artery disease.

Materials and Methods

A cross-sectional analytical study was conducted in the Department of Cardiology, Sylhet MAG Osmani Medical College Hospital, Sylhet during the period from July 2011 to June 2013. All adult patients undergoing coronary angiography for coronary artery disease (STEMI, NSTEMI, UA and CSA) were invited to participate in the study. Exclusion Criteria were prior coronary revascularization procedures either CABG or angioplasty or coronary stenting, congenital heart disease, valvular heart disease, cardiomyopathy, renal insufficiency, liver dysfunction, hypothyroidism, malignancies, connective tissue disease, pregnancy, concurrent use of drugs like methotrexate, phenytoin, carbamazapine, metformins, fibrates, thiazide diuretics, trimethoprim, levodopa and multivitamins.

A questionnaire covering demographic data and major risk factors for CAD like age, gender, family history, smoking, dyslipideemia, hypertension, and diabetes mellitus were recorded.

Plasma homocysteine level measurement: After a 12-hour fast 10 ml venous blood was drawn by disposable syringe in supine position on the day of coronary angiography and was collected in a cleaned test tube containing anticoagulant. It was placed in an ice cold box. The sample was centrifuged within one hour at 4000 rpm for five minutes. The plasma was collected and kept at -70°C until analysis. Total homocysteine was measured by Abbott AxSYM system based on Fluorescence Polarization Immunoassay (FPIA) principle.

Coronary Angiography

Diagnostic coronary angiography was performed via the trans-femoral approach using standard techniques. Significant stenosis of left anterior descending (LAD), right coronary artery (RCA) and left circumflex coronary artery (LCX) if there was ?70% stenosis; while of left main coronary artery (LMCA) if there was ?50% stenosis.[14]

Angiographic severity of coronary artery disease was assessed by vessels score,[15] and Friesinger score.[16] Vessel score was based on the number of vessels involved and ranged from 0 to 3. Left main coronary artery stenosis was scored as 1 vessel disease.[15]

Data was analyzed using SPSS (Statistical package for social sciences) 16 version. A probability (p) value of < 0.05 was considered statistically significant.

Informed consent was obtained from each patient and approval of the study protocol was obtained from the Ethics Committee of Sylhet MAG Osmani Medical College.

Results

Age of the patients ranged from 30 to 70 years with the mean age of 50.6 ± 9.1 years and 67.0% patients were in the age group of 41 to 60 years (Figure-1).Among the total 100 patients, 94.0% of patients were male and 6.0% of patients were female with a ratio of 15.7: 1.

ST-elevation MI was found in 43.0%, non-ST-elevation MI in 21.0% patients, unstable angina in 13.0% and chronic stable angina in 23.0% of patients.

A significant positive correlation was found between homocysteine level and number of disease vessel ($r=0.501$; $p<0.001$) (Figure-3).

A significant positive correlation was also observed between homocysteine level and Friesinger score ($r=0.436$; $p<0.001$) (Figure-4).

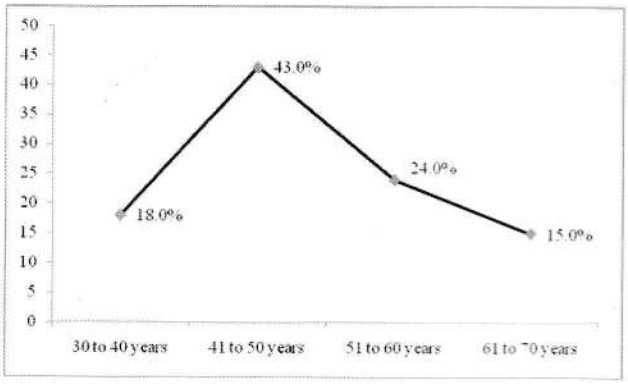

Figure-1. Distribution of patients by age (n=100)

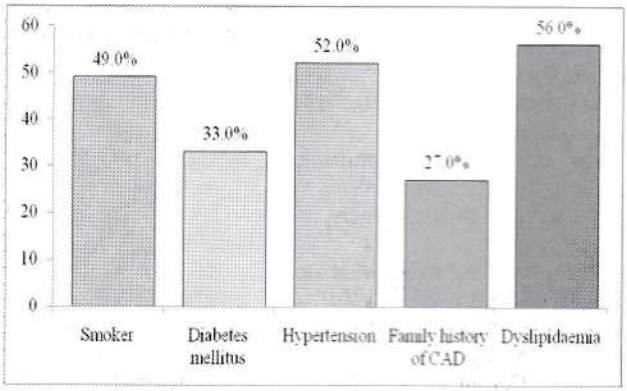

Figure-2. Distribution of patients according to risk factors of CAD (n=100)

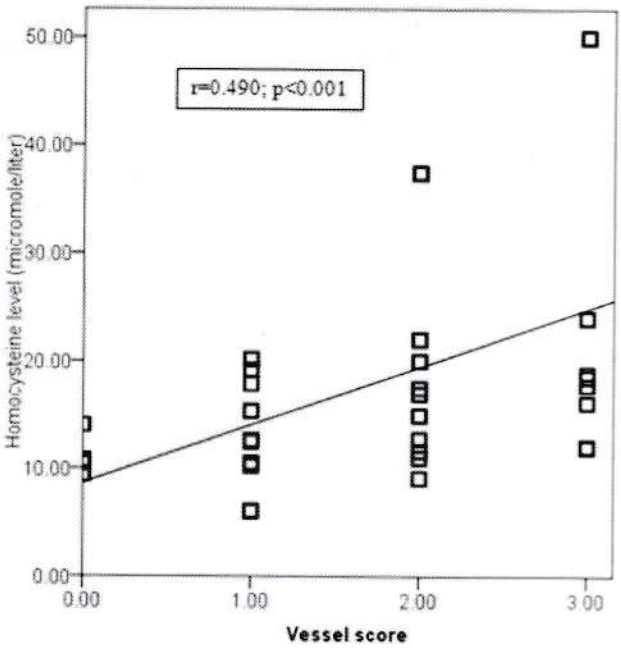

Figure-3: Scatter diagram showing correlation between homocysteine level and number of disease vessel involvement (n=100)

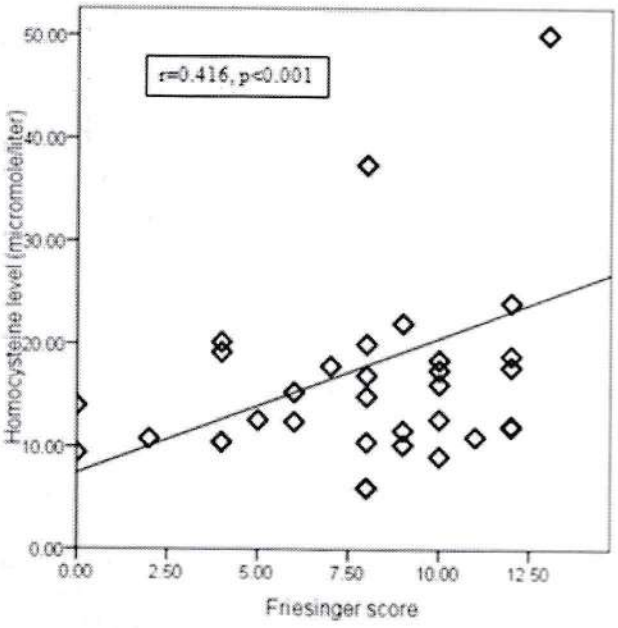

Figure-4: Scatter diagram showing correlation between homocysteine level and Friesinger score (n=100)

Discussion

There is a growing recognition that high level of homocysteine is associated with heart disease.[17]The mechanism by which high tHcy levels lead to CAD remains unclear. The suggested mechanisms may be the damaging effects of tHcy on endothelium, platelets, coagulation factors, and smooth muscle of the vessel wall, and oxidative modification of the LDL-cholesterol.[18]

In this study the age of the patients ranged from 30 to 70 years with the mean age of 50.6 (SD 9.1) years. This result was concordant with several other studies.[12,18,19] But several other studies reported higher mean age in their patients of CAD.[13] While Alam, et al.[20] reported the lower mean age of their patients with acute myocardial infarction.

This study also showed that 43.0% of patients were in the age group of 41 to 50 years, 24.0% of patients were in the age group of 51 to 60 years, 18.0% of patients were in the age group of 30 to 40 years and 15.0% of patients were in the age group of 61 to 70 years. Nearly similar result was reported in several studies.[21,22]

In the present study94.0% patients were male and 6.0% of patients were female with a ratio of 15.7: 1. Several studies also supported this result.[12,13,18-21]

In the current study 49.0% of patients were smoker. Different studies showed 28.5- 90.2% of smoker among their CAD patients.[19,20,23,24]

In our study 33.0% of patients were diabetics. This result was supported by Alam, et al.[20] that 34% of their CAD patients were diabetics. Several other studiesalso supported this results that 19.6-42.7% of their CAD patients were diabetics.[19,23-25]

In this study 52.0% of patients were hypertensive. This result was similar to the study of others.[19,20,23-25]

In the current study 27.0% of patients had family history of CAD. This result was correlated with others.[23-25]

In the present study ST-elevation MI was found in 43.0% of patients, non-ST-elevation MI in 21.0% of patients, unstable angina in 13.0% and chronic stable angina in 23.0% of patients. This result was supported by the study of Kabir, et al.[23] that stable angina in 18% unstable angina in 36% and MI in 46% of their series of CAD patients

In this study dyslipidaemia was found in 56.0% of patients. Other studies showed dyslipidaemia in 35.1-48.5% of patients with CAD.[19,20,23,24]

In this series no significant vessel involvement was in 12.0%, single vessel disease in 29.0%, double vessel disease in 31.0% and triple vessel disease in 28.0% of cases. Kazemi, et al.[15] reported that single vessel disease

in 22.3%, double vessel disease in 21.8% and triple vessel disease in 23.4% and no vessel disease in 32.5% of their patients underwent coronary angiogram. Kabir et al.[23] found no vessel disease in 5.0%, single vessel disease in 30.0%, double vessel disease in 40.0% and triple vessel disease in 25.0% of cases.

In this study there was a significant positive correlation between homocysteine level and severity of CAD measured by number of disease vessel ($r=0.501$; $p<0.001$); and Friesinger score ($r=0.436$; $p<0.001$). Kazemi et al.[15] and Mirhoseini et al.[13] found a positive correlation between plasma homocysteine level and severity of CAD($r=0.246$; $p=0.000$ and $r=0.35$; $p=0.002$ respectively).

Conclusion

Plasma homocysteine level is positively correlated with angiographic extent and severity of coronary artery disease. However a further study involving multicentre large number of participants is warranted.

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ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 18 Number 2

Clinical and Epidemiological Characterization of Psoriasis: A Hospital Based Study

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Abstract

To evaluate the epidemiology and clinical characteristics of patients with psoriasis this cross-sectional study was conducted in the department of Dermatology and Venereology, Sylhet MAG Osmani Medical college Hospital, Sylhet between November 2011 and April 2012. Seventy-two clinically diagnosed cases of psoriasis were included. The mean age of onset and at presentation was 32.2 ± 14.6 years (range, 11-63 years) and 38.7 ± 14.9 years (11-70 years) respectively. Male to female was 1.5:1. Family history of was present in 18.6% of patients. Initial site of involvement was scalp (45.7%) followed by leg (31.4%). The most common types psoriasis was plaque type (82.9%) followed by guttate type (8.6%). Nail changes were found in 61.4% of cases, most commonly nail pitting (41.4%) followed by subungual hyperkeratosis (24.3%). Psoriatic arthritis was found in 10.0% of cases. In conclusion, the present epidemiology and clinical characteristics of psoriatic patients are comparable to international and previous national patterns.

[OMTAJ 2019;18(2)]

Introduction

Psoriasis is a chronic, inflammatory systemic disease typically characterized by erythematous, scaly patches, or plaques on the skin resulting from hyperproliferation of epidermal keratinocytes[1]. The disorder affects approximately 1-3% of the world population[2].

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The cause of the disease remains unknown. It is a genetic skin disorder probably initiated by hyperactivity of the triggered state of the local Cutaneous innate immunity as exemplified by abundant TNF-alpha activity due to overreaction or reduced stimulus threshold in response to an as yet unknown trigger.[3]

Psoriasis can also affect nails and joints. Early onset of the disease is usually associated with more severe course. Sociodemographic psoriasis studies show many parameters like gender, family history, age of onset, clinical type, joint and nail involvement.[4]

It is not a life-threatening disease but psoriatic lesions can cause pain, itching, bleeding and in some even arthritis. In many cases, patient with psoriasis are unable to carry out their daily activities. They suffer from emotional perception, sexual relationship and career choices.[5]

A number of studies to determine the epidemiology of psoriasis have been carried out in different parts of the world.[6-9] But there little known about the socio-demographic characteristics and clinical types of psoriasis in our country.[10] By imposing methodologic control and a numerate approach, socio-demographic characteristics and clinical types of psoriasis can offer a major contribution to understand psoriasis.

In order to investigate further the traits of psoriasis, there is a trend toward national and international collaborative projects involving large-scale networks of nvestigators from various disciplines. So, this study is aimed to evaluate the clinical and epidemiological characterization of psoriasis in our country. This study will reflect the socio-demographic characteristics and clinical aspects of psoriasis and highlights some of the needs for further investigation into specific areas of the disease.

Materials and Methods

This cross-sectional study was conducted in the department of Dermatology and Venereology, Sylhet MAG Osmani Medical college Hospital, Sylhet during the period between November 2011 and April 2012. Seventy-two clinically diagnosed cases of psoriasis

attending the Department of Dermatology and Venereology, Sylhet MAG Osmani Medical college Hospital, Sylhet were included.

Informed written consent was obtained from the patients after full explanation of the details of the disease process and the purpose of the study.

Each and every patient was examined after thorough history from patient and physical examination; a clinically diagnosed case of psoriasis were made and confirmed by consultant dermatologist. If any suspicion, the diagnosis of psoriasis was confirmed by biopsy and histopathological examination.

The data collection sheet was filed. The information included the age, age of onset, sex, occupation and socioeconomic status. Other information including family history of psoriasis, history of trauma, history of recent infections, stressful life events and other potentially predisposing factors associated with onset or exacerbation of psoriasis like drug intake, seasonal changes, sunlight exposure, pregnancy, and smoking; height, weight and BMI were recorded.

Patients were classified according to the clinical pattern of the disease, presence or absence of nail involvement and psoriatic arthropathy at the time of initial examination and any associated disease conditions.

Results

The mean age of the patients at presentation was 38.7 ± 14.9 years (11-70 years). The age of the patients at presentation was shown in table-I.

The mean age of onset was 32.2 ± 14.6 years (range, 11-63 years). Males were preponderance with a ratio of male to female was 1.5:1. Most of the patients were from lower economic class [51 (72.8%)], followed by middle class [16 (22.9%)] and 3 (4.3%) patients were from upper class of socioeconomic status. House wife was the most common occupation [21 (30.0%)], followed by service [13 (18.6%)], student [12 (17.1%)], farmer [11 (15.7%)], day labourer [6 (8.6%)], business [5 (7.1%)] and others [2 (2.9%)].

Residential status was urban in 38 (54.3%) and rural in 32 (45.7%) patients. Family history of psoriasis was present in 13 (18.6%) and negative in 57 (81.4%) patients . Regarding the initial site of involvement, scalp was involved in 32 (45.7%) followed by leg 22 (31.4%), others 7 (10.0%), arms 6 (8.6%), sole 2 (2.9%) and 1 (1.4%).

The most common types psoriasis was plaque type (82.9%), followed by guttate type (8.6%), erythrodermic pattern (7.1%) cases and localized pustular psoriasis (1.4%).

Nail changes were found in 43 (61.4%) cases and 27 (38.6%) case had no nail changes. Psoriatic arthritis was found in 7 (10.0%) cases and 63 (90.0%) case had no joint involvement.

Table-I

Socio-demographic features	Frequency	Percentage
Age at presentation		
11-20 years	9	12.9
21-30 years	16	22.9
31-40 years	17	24.3
41-50 years	14	20.0
51-60 years	10	14.3
>60 years	4	5.7
Age at presentation		
11-20 years	16	22.9
21-30 years	22	31.4
31-40 years	14	20.0
41-50 years	7	10.0
51-60 years	9	12.9
>60 years	2	2.9
Sex		
Male	42	60.0
Female	28	40.0
Socioeconomic status		
Rich class	3	4.3
Middle class	16	22.9
Lower class	51	72.8
Residential status		
Urban	38	54.3
Rural	32	45.7
Occupation		
Student	12	17.1
House wife	21	30.0
Service	13	18.6
Business	5	7.1
Farmer	11	15.7
Day labour	6	8.6
Others	2	2.9

Table-II Distribution of patients according to site of initial involvement (n=70)

Site of initial involvement	Frequency	Percentage
Scalp	32	45.7
Legs	22	31.4
Arms	6	8.6
Palm	1	1.4
Sole	2	2.9
Others	7	10.0
Total	70	100.0

Table-III Distribution of patients by clinical types of psoriasis (n-70)

Clinical types	Frequency	Percentage
Plaque psoriasis	58	82.9%
Guttate type psoriasis	6	8.6%
Erythrodermic psoriasis	5	7.1
Localized pustular psoriasis	1	1.4%.

Table-IV Different types of nail changes (n=70)

Types of nail changes	Frequency	Percentage
Nail pitting	29	41.4
Nail thickening	8	11.4
Onycholysis	6	8.6
Oil spot	1	1.4
Longitudinal ridges	10	14.3
Subungual hyperkeratosis	17	24.3
Opaque nail	3	4.3
Nail discolouration	13	18.6
Beaus line	4	5.7
No nail change	27	38.6

Total number exceeds 43 due to multiple nail changes in some of the patients

Table-VI Distribution of patients by type of joint involvement (n=7)

Type of arthritis	Frequency	Percentage
Asymmetric oligoarthritic	5	71.4
Arthritis in distal interphalangeal joints	1	14.3
Symmetric polyarthritis	1	14.3
Arthritis mutilans	0	0.0
Spondylitis	0	0.0
Total	7	100.0

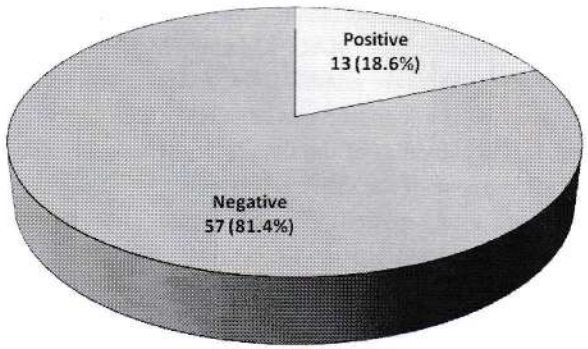

Figure-1 Distribution of the patients according to family history of psoriasis (n=70)

Discussion

Psoriasis can be present at any age and had been reported at birth and older people of advanced age of 108.11-14 In this study it was also revealed that the disease had started at a wide range of ages from 11 to 70 years. The mean age of the patients in the present study was 38.7 ± 14.9 years, which was supported by some studies.[14,15]

The current study showed that the mean age of onset was mean age of 32.2 ± 14.6 years (range of ages from 11 to 63 years). Several studies supported this result.[8,16,17]

The present study revealed that 31.4% had age at presentation was between 21 to 30 years. This result was consistent with the studies of others.[6,8]

The study also revealed that 74.3% had age of onset between 11 to 40 years. This result was supported by Allen et al.[18] (70%) and Lanley et al.[11] (75%).

There is remaining controversy regarding psoriasis gender preponderance and it lies between no difference,[19] to male preponderance,[7,10,14,20,22] and female preponderance.[8,13,23] The current study supported the opinion of male preponderance with male to female ratio of 1.5.:1.

Residential status of the patients in the current study was urban in 38 (54.3%) and rural in 32 (45.7%) patients. This result was supported by Al-Ashow and Al-Neem,23 that 76.6% of their patients were form urban areas, 16.6% patients were from rural areas and 7.8% were from areas of recent urbanization.

The current study revealed a positive family history of psoriasis in 18.6% of cases. Lower rate of positive family history of psoriasis was reported in the study of Islam et al.[17] (15.7%), Ferrándiz et al.[24] (10%) and Fatanie et al.[22] (8.7%). But higher rate of positive family history of psoriasis was reported in the study of Ferrándiz et al.[16] (40.7%), Farber et al.[8] (36%), and Al-Ashow and Al-Neem,[23] (34.4%)

This study showed that vast majority of cases (82.9%) had plaque type of psoriasis followed by guttate type (8.6%), erythrodermic pattern (7.1%) cases and localized pustular psoriasis (1.4%). This result was nearly supported by some other findings.[6,7,10,16,22,23] Regarding the initial site of involvement the present study showed that scalp was involved in 42.2% cases followed by leg (38.2%). This result was supported by several studies.[6,7,23] But this result was differed from Kumar et al.9 and Fatanie et al.[22] where the initial sites of involvement were lower extremity.

The current study showed that 61.4% patients had shown some degree of nail changes. It was supported by Kaur et al.[6] (62.2%), Tekin et al.[4] (62.1%), Islam et al.[10] (61.8%), Ahmed et. al.[25] (60%) and Kurtovic et al.[26] (58%).

But differed from Kundakci et al.[13] (16%), Kumar et al.[9] (31%), and Ferrándiz et al.[14] (39.8%), Al-Ashow and Al-Neem,[23] (19.5%). The nail changes in this study were nail pitting (41.4%), subungual hyperkeratosis (24.3%), nail discolouration (18.6%), longitudinal ridges (14.3%), nail thickening (11.4%), onycholysis (8.6%), Beaus line (5.7%), opaque nail (4.3%) and Oil spot (1.4%). This result was supported by several studies.[6,9,10,23]

The present study revealed that joints were involved in 10.0% patients. This result was consistent with Kaur et al.[6] supported this where they had found that 10.24% developed psoriatic arthritis. But it was differed from Kundakci et al.[13] (1.5%), Kawada et al.[7] (1%), and Kumar et al.[9] (1.1%). Among the patients with psoriatic arthritis asymmetric oligoarthritis were found in 71.4% followed by arthritis in distal interphalangeal joints in 14.3% and symmetric polyarthritis in 14.3%. This was nearly concordance with James et al.[27] where they had reported asymmetric oligoarthritis in 70%, arthritis in distal interphalangeal joints in 16%, symmetric polyarthritis in 15% spondylitis in 5% and arthritis mutilans in 5%.

This study was not without limitations. Firstly this study was conducted in a single tertiary hospital only. Secondly sample size was small. Thirdly it was a cross-sectional study.

Conclusion

Based on these result and subsequent discussion with other literature it is clear that the findings of the present clinical and epidemiological characterization of psoriasis in our psoriatic patients are comparable to international and previous national patterns. Further studies are needed in order to obtain the real characteristics of psoriasis and to detail these noteworthy findings in relation to patients with psoriasis in our country.

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ORIGINAL ARTICLE

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Delivery Practices in Urban Slums of Dhaka City

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Abstract

The development of urban areas allowed women to receive more care and treatment. However, maternal indicators are generally worse in the slums than in urban non-slum area. It is therefore crucial to address maternal health of the urban slum dwellers in Bangladesh.The study was conductto assess the delivery practices in urban slums of Dhaka city. This cross-sectional study was carried out in Korail and Ershadnogor slums of Dhaka city among thepurposively selected 325 married women who had delivered a child within last 3 years. This study found that 51.4% women delivered their last child at home. Among the deliveries 73.2% were normal deliveries and 25.2% were by cesarean section. 71.1% received antenatal checkup and about 62.5% took TT vaccine during their pregnancy period. Razor blade was used for cutting umbilical cord in the 78.7% cases who delivered at home. There were significant association with educational (p=0.025) and occupational status (p=0.006) of the husband; andaverage monthly family income (P<0.001)with place of last delivery. A significant association within age at first delivery and place of delivery (p=0.001)also revealed. There is need to educate pregnant mothers and family members on the importance of antenatal checkup and motivate to undergo institutional deliveries.

[OMTAJ 2019;18(2)]

Introduction

Pregnancy and childbirth are normal physiological process among women of reproductive age group (15-49years). Worldwide, about 140 million women give birth every year.[1] Globally, one women die in every two minutes due to pregnancy and child births related complications.[2] Among all maternal deaths 99% occur in developing countries and one-third of these deaths occur in South Asia.[1] The new Sustainable Development Goals (SDG), also known as the Global Goals, call for bringing the maternal mortality ratio down to 70 deaths per 100,000 live births by 2030. To achieve this target need to ensure all women have access of contraceptive methods to avoid unwanted pregnancy, provide all pregnant women with skilled and respectful care in a safe environment.[2]

Maternal health is one of the priority agenda in the health sector in Bangladesh. According to the Bangladesh Maternal Mortality Survey,maternal mortality ratio (MMR) declined from 322 in 2001 to 196 per 100,000 live births in 2016[3]; this rate is remained almost unchanged in Bangladesh since 2010.

Majority of deliveries still take place at home, which is almost 62%, and more than 56% deliveries are assisted by Traditional Birth Attendants (TBA) or relatives while medically trained personnel conduct only 42% of all births, both at home and in facilities at the national level.[4] In Bangladesh, almost three in every four (74 %) women received at least one antenatal care (ANC) visit from a medically trained provider.[3]

Bangladesh, a developing country and most densely populated countries in the world has been facing rapid urbanization. About one third of the urban population lives in slums. Maternal indicators are generally worse in the slum than urban non slum area.[5]

Home delivery is most common among the women in slums. Facility delivery is lowest in slums (37%). Very few home deliveries are attended by medically trained provider.[6]

The deliveries which take place at home and are assisted by TBAs often performed in unsafe and unhygienic conditions resulting in increased risk of maternal and child morbidity and mortality.Factors that influence worse maternal health in urban slum area low socio-economic condition, low decision making power of women, the influences of family or community elder, low educational level, lack of awareness and inadequate skilled antenatal care facilities.[7] It is therefore, crucial to address maternal health problems in slum areas of Bangladesh.

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Materials and Methods

A slum community based cross-sectional study was carried out in Korail and Ershadnogor slums of Dhaka city, Bangladesh from January, 2018 to December, 2018 among the 325 married women who had delivered a child within last 3 years.The study was done to assess the delivery practices in urban slums of Dhaka. Respondents were interviewed by using a semi-structured questionnaire through face to face interview and the respondents were selected by purposive sampling method. Descriptive and inferential statistics were used in analyzing the data by IBM SPSS software version 25 and represented by tables and charts.

Results

Table I.depicts the distribution of the respondents by their socio-economic characteristics. Among respondents (n=325),most of the respondents (36.3%) were in the age group of 21-25 years andmean age ofthem were 24.70 (SD ±5.22) years.Educational status of respondents,34.7% completed up to primary followed by29.5%were illiterateand among the respondent's husband, 36% completed up to secondary followed by 26.5% were illiterate.Among the respondents, more than half (65.8%) were housewife ad remaining were indifferent types of occupation and among their husband, 34.5% were service holder and the rest of them were involved in other different type of occupation More than half (68%) lived in nuclear families and 32% in joint family. Average monthly family incomeshad 5,000-10,000 BDT of the majority (43.1%)respondents and mean average monthly family incomes of the respondents were 13632.92 (SD± 6172.87) BDT.

Regarding age at marriage, more than half (69.8%) were in the age group of 15-19, followed by 23.7% and 6.5% were in the age group 10-14 and 20-27 years; and among the respondents by their age at first delivery 62.5% were in the age group 17-21, 28.3% and 9.2% were in 12-16 and 22-34 years respectively and mean age of respondents during first delivery were 18.20 (SD±2.80) years. Table II. shows the distribution of respondents by their antenatal care (ANC) information. Majority (71.7%) received antenatal checkup; and among those who have received ANC half of them (49.8%) took it more than 4 times, 16.3% received four times and 33.9% received less than 4 times. Most of the respondents (62.5%) took TT-Vaccine during their antenatal period; and among those who received TT-vaccine above half (65.5%) received two doses and 34.5% one dose.

Table I: Socio-demographic characteristics of the of respondents (n=325)

	Frequency	Percentage
Age group		
16-20	86	26.5
21-25	118	36.3
26-30	79	24.3
31-35	35	10.8
36-40	7	2.2
Mean±SD=24.70±5.22		
Educational status of respondent's husband		
Illiterate	86	26.5
Upto Primary	95	29.3
Upto Secondary	117	36.0
Higher Secondary& above	27	8.3
Occupational status of respondent's husband		
Day laborer	24	7.4
Driver	57	17.5
Rickshaw puller	53	16.3
Businessman	57	17.5
Service holder	112	34.5
Others	22	6.8
Family type		
Nuclear	221	68
Joint	104	32
Average monthly family income (BDT)		
5000-10000	140	43.1
10000-15000	129	39.7
15000-30000	56	17.2
Mean±SD= 13632.92±6172.87		

Table II: Obstetric &Antenatalinformation of the respondents

	Frequency	Percentage
Age at marriage (years) (n=325)		
10-14	77	23.7
15-19	227	69.8
20-27	21	6.5
Mean±SD= 16.02±2.34 years		
Age at first delivery (years) (n=325)		
12-16	92	28.3
17-21	203	62.5
22-34	30	9.2
Mean±SD= 18.20±2.80 years		
Antenatal checkup (n=325)		
Yes	233	71.7
No	92	28.3
Numbers of the ANC has taken (n=233)		
<4 Times	79	33.9
4 Times	38	16.3
>4 Times	116	49.8
TT Vaccine (n=325)		
Yes	203	62.5
No	122	37.5
Dose of TT vaccine (n=203)		
One dose	70	34.5
Two doses	133	65.5

Table III. shows the practices regarding delivery among the respondents. Majority (73.2%) delivered their last child by normal vaginal delivery. Regarding the place of the last delivery, half of them (51.4%) delivered at home, 35.4% delivered their baby at different types of government and private hospital, 12.6% at different NGO clinics and only 0.6% delivered at others place that was on the way to hospital. Among the normal deliveries, the umbilical cord, and majority (78.7%) used razor blade.

31.3% were attended by untrained dais, 14.4% by trained dais and 18.9% by doctors. Regarding the last normal deliveries at home, 55.7% were taking place on the mud, 22.8% on straw floor and 21.6% on bed; and for cutting cutting the umbilical cord, and majority (78.7%) used razor blade.

Table III: Practices regardinglast delivery

	Frequency	Percentage
Mode of last delivery (n=325)		
Normal delivery	238	73.2
C-section	82	25.2
Assisted vaginal delivery	5	1.5
Place of last delivery (n=325)		
Hospital	115	35.4
Home	167	51.4
NGO clinic	41	12.6
Others	2	0.6
Birth attendant during last normal delivery(n=243)		
Doctor	46	18.9
Nurse	30	12.3
Trained dais	35	14.4
Untrained dais	76	31.3
Family member	48	19.8
Herself	8	3.3
Place of last delivery at home (n=167)		
On mud	93	55.7
Straw floor	38	22.8
Bed	36	21.6
Instruments used to cut the umbilical cord (n=169)		
Razor blade	133	78.7
Surgical blade	31	18.3
Scissors	5	3.0

One- fifth (22.6%) respondents felt pressure on the abdomen with knee or other objects during the period of delivery.Figure I. portrays the distribution of the respondents by removal of placenta. Table IV. showssignificant statistical association was found between the place of delivery and husband's educational status (p=0.025), husband's occupational status (p=0.006) and average monthly family income of the respondents (p<0.001). Table V. shows the significant association between age at first delivery and place of delivery (p=0.001) of the respondents.

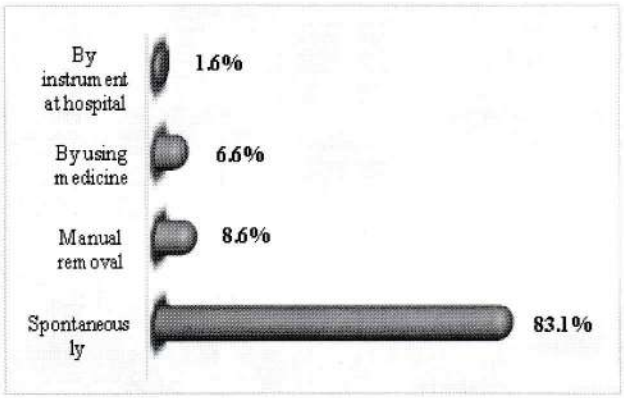

Figure I: Mode of delivery by removal of placenta (n=243)

Table IV: Association of socio-demographic characteristics and place of last delivery

	Place of last delivery			p-value
	Health facilities	Home	Total	
Educational status of respondent's husband				
Illiterate	36 (41.9)	50 (58.1)	86	
Up to primary	42 (44.2)	53 (55.8)	95	0.025
Uptosecondary	58 (49.6)	59 (50.4)	117	
Higher secondary & above	20 (74.1)	7 (25.9)	27	
Occupational status of respondent's husband				
Driver	25 (43.9)	32 (56.1)	57	
Rickshaw puller	15 (28.3)	38 (71.7)	53	0.006
Businessman	29 (50.9)	28 (49.1)	52	
Service holder	66 (58.9)	46 (41.1)	112	
Others	21 (45.7)	25 (54.3)	46	
Average monthly family income (BDT)				
5,000-10,000	60 (38.5)	80 (47.3)	140	
10,000-15,000	55 (35.3)	74 (43.8)	129	<0.001
15000-30,000	41 (26.3)	15 (8.9)	56	

Table V: Association of age at first delivery and place of last delivery (n=325)

Age at first delivery (years)	Place of last delivery			p-value
	Health facilities	Home	Total	
12-16	40 (43.5)	52 (56.5)	92	
17-21	92 (45.3)	111 (54.7)	203	0.001
22-34	24 (80.0)	6 (20.0)	30	

Discussion

Maternal health service has a potentially critical role to play in the improvement of reproductive health. It has been well established that access to skilled assistance and well-equipped health facilities during delivery care in the maternal health service can reduce maternal mortality and morbidity and improve the outcome of pregnancy. Despite the availability of health facilities in Dhaka, Bangladesh, a large proportion of women in slum areas deliver at home and report delivery related complications and postpartum morbidity.[8]

In this study, the mean age of the respondent was 24.70±5.22 years ranged 21-25 years. A study in Bangalore, India among rural women state that the mean age of the mothers was 25 years.[9] Educational status of the respondents and their husbands found 29.5% and 26.5% were illiterate.The present study revealed that husband's education had a significant association with place of last delivery. In a study conducted in Nepal showed that low maternal education is one of the reasons for delivery at home in Nepal.[10] Occupation of the respondents, majority (65.8%) were housewives and their husbands 34.5%were service holder anda significant association found between husband's occupation and place of last delivery. A study among women in rural India found that no association of women's occupation with maternal health care services use which is similar to this study.[11]Most of the respondents (68%) came from nuclear family which is opposite of this study conducted in rural area of north Karantaka, India state that 60.3% participants were living in joint family.[12]Mean of the average monthly family incomeof the respondent was 13632.92±6172.869 BDT and there was a significant association within average monthly family income and place of last delivery.A study in Bangladesh reported that monthly family income was significant only when it was more than 10,000 BDT/month.[13]

This study revealed that the mean age at first delivery of the respondent was 18.20±2.80 years and found a significant association with age at first delivery and place of last delivery. A study in North West Ethiopia in 2014

shows the mean age at first delivery was 20.52 (±2.99) years.[14]Majority (73.2%) delivered their last child by normal vaginal delivery and 25.2% by C-sectionwhich is higher from the study in Dhaka has reported 53.9% delivery was C-section and 46.1% delivered normally.[15]More than half (55.7%) of the home deliveries were conducted on mud, 22.8%were on straw floor and 21.6% were taking place on the bed. A study from rural Nepal has reported that more than half of thedeliveries were conducted onthe painted floor with cow dung and some with soil[16] and in Uttar Pradesh of India found that the floor was properly washed in only 3.1% of deliveries.[17]In our study, it was reported that 78.7% used razor blade, 18.3% used surgical blade and only 3% used scissors to cut the umbilical cord after delivery of their baby at home. The findings of this study are similar to the study in Nepal.[16]

Conclusion

The proper care during delivery is important for the well-being of the mother and her child. Deliveries at home by unskilled birth attendants are still common in the slum areas of Dhaka city. Skilled birth attendance or utilization of health facilities for childbirths should be improved in these slums. The results of the study showed that the use of the antenatal checkup services later increases the use of institutional delivery and skilled attendance during the period of delivery.Improving maternity care facilities, the quality of maternity target, plan, develop and deliver maternal health services to the urban slum women of Dhaka city.

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ORIGINAL ARTICLE

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Prevalence of Ocular Morbidity among Patient attending Shaheed Shamsuddin Ahmed Hospital, Sylhet

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Abstract

To evaluate recent changes of ocular morbidity in Sylhet,Bangladesh and to identify different outcomes of ocular morbidities in Sylhet District.A retrospective study was carried out of documents of outdoor registrar of Shaheed Shamsuddin Ahmed Hospital which is located in the Centre of Sylhet city corporation, Bangladesh from 1st Jan2018 to 31st Decof 2018. Result of this study was included patients attending at outdoorof this hospital, among them were female and males.Allergic conjunctivitis was found the most common ocular morbidity estimating 24.86%,followed bycataract,refractiveerror,headache, dryeye syndrome, infective conjunctivitis, viral keratitis, chronic dacryocystitis, Internalhordeolum, Ocular foreign body,Pterygium were most common ocular morbidities. This study gives mere distribution of disease pattern existing in our locality and give our attention to encounter the burden

[OMTAJ 2019;18(2)]

Introduction

Ocular diseases affect every individual in this world, with the only difference being in the pattern of occurrence of disease depending on age, gender, region, and climatic conditions. The pattern of eye diseases and causes of blindness in developing and developed countries and often in different communities' vary[1]

Globally, eye diseases are considered as one of the major contributors of nonfatal disabling conditions. In Bangladesh, 1.5% of adults are blind and 21.6% have low vision9. Therefore, this paper aimed to identify the hospital-based prevalence and associated risk factors of eye diseases among dwellers of Sylhet city.

Bangladesh is one of the high disease burden countries in the world from ocular morbidity with tremendously low cataract surgery rates (CSR) per million populations per year. It is estimated that the prevalence of blindness in Bangladesh is 1.53% among the population aged 30 years and older[2]

Bangladesh is a developing country where health service faces challenges to tackle the disease burden.Ophthalmology is one of the important specialties in hospital service.Small number of ophthalmologist and small number of eye care service providing organization are facing tough challenges. So blindness and different ocular morbidity is a one of major problems in Bangladesh. Shaheed Shamsuddin Ahmed Hospital is a district hospital of Sylhet which is fully equipped with arefraction unit, slit lamp biomicroscope and well equipped operating theatre. Hospital is running since 1992, and providing considerable eye care service to the locality.

Conditions Like cataract, refractive errors, low vision, trachoma, onchocerciasis and vitamin A deficiency&other causes of childhood blindness were determined to be responsible for 75% of all blindness worldwide[2]

There is a need for provision and implementation of programs by the government following the guidelines and strategies of Vision 2020 to provide good refraction services, low cost and good quality frames and lenses to people. Increasing the awareness of people in the communities through health education about the need to correct their refractive error will help in reducing the burden of blindness or visual impairment from this disorder.

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Cataract is the most important cause of avoidable blindness worldwide and reducing the burden of blindness from cataract is one of the priorities of Vision 2020, thus one of the implementation of the recommendations and strategies of Vision 2020 will help. The aim of this study is to determine the pattern of eye diseases that comes at the Shaheed Shamsuddin Ahmed Hospital and to compare the findings with other previous studies in the same environment. It is hoped that this study will show the trend of ocular morbidities in our environment and help to provide basic data for planning and provision of adequate eye care services, appropriate treatment and intervention for these diseases.

Materials and Methods

A retrospective study was carried out at the eye department of Shaheed Shamsuddin Ahmed Hospital from 1st Jan 2018 to 31st Dec 2018. A total number of 7568 patients were examined. This is a retrospective review of 7568 patients who had attended the OPD of dept. of Ophthalmology, Shaheed Shamsuddin Ahmed Hospital over a period of 12 months.The needed information's were obtained from patientsmedical records. The data analyzed were: name, age, sex, registration number, ophthalmic history, visual acuity, examination of eye movements, and anterior and posterior ocular segments.Visual acuity was evaluated using the Snellen's chart for the literate and "E" chart for the illiterate and refraction was done accordingly, anterior segment was examined by slit lamp biomicroscopy, posterior segment by ophthalmoscope. Schiotz tonometer for measuring intraocular pressure, schirmer test for dryeye management, syringing for chronic dacryo cystitis, cycloplegic refraction was done for pediatric group.

Results

A total of 7568 patients were received in eye unit during the period of twelve months starting 1st Jan 2018 .Of them 3467 (45.80%) were male while 4101 (54.20%) were female with mean age of 35.47 (range 0.5 to 88 years). Majority portion (74.24.9%) of the study population was in 16-60 years age group. There were 45.80% of males and the proportion of females was 54.20%. The most common ocular morbidity was allergic conjunctivitis seen in 1881 (24.85%), followed by cataract seen in 1161 (15.34%) and refractive error seen in 723 (9.55%) subjects. Headache 697 (9.21%), Infective conjunctivitis 522 (6.90%), Dryeye391 (5.17%), Chalazion 251 (3.32%), Internal hordeolum 247 (3.26%), Chonicdacryocystitis 244 (3.22%),Viral keratitis 232 (3.06%), Pterygium 201 (2.66%), Ocular injury 186 (2.46%), Corneal ulcer 150 (1.98%), Blepheritis 139 (1.84%), Stye 138 (1.82%), Glaucoma 104 (1.37%), Diabetic retinopathy 69 (0.91%), Corneal opacity 61 (0.81%), Strabismous 56 (0.74%), Uveitis 43 (0.57%), Aphakia 20 (0.26%), Night blindness 17 (0.22%), Optic atrophy 14 (0.19%), Retinal detachment 11 (0.15%), Papillitis 05 (0.07%), Endophthalmitis 03 (0.04%), Ectropion, Entropion & Others 02 (0.03%).

Table 1: Age distribution of patient.

Age in Years	No of Patient	Percentage
0-15	1151	15.21
16-30	17779	23.50
31-45	1417	18.73
46-60	2425	32.05
>60	796	10.51
Total	7568	100

Table 2: Sex distribution of patient.

Age in Years	No of male	Percentage	No of Female	Percentage
0-15	523	6.91	628	8.30
16-30	814	10.75	975	12.75
31-45	744	9.83	673	8.90
46-60	1035	13.68	1390	18.37
>60	351	4.63	445	5.88
Total	3467	45.80	4101	54.20

Table 3: pattern of ocular diseases.

Disease	No of patients	Percentage
Allergic conjunctivitis	1881	24.85
Cataract	1161	15.34
Refractive error	723	9.55
Headache	697	9.21
Infective conjunctivitis	522	6.90
Dry eye	391	5.17
Chalazion	251	3.32
Internalhordeolum	247	3.26
Chronic dacryocystitis	244	3.22
Viral Keratitis	232	3.06
Pterygium	201	2.66
Ocular injury	186	2.46
Corneal ulcer	150	1.98
Others	682	9.02
Total	7568	100

Discussion

The study shows that females (54.20%) had more eye problems than males (45.8%). This could be due to easy access of the hospital which enables them to seekmedical help without being dependent on their spouses or family members. Similar result of female preponderance was seen in the Survey executed by Brac University, Bangladesh.[3] which have showed that the female participant was 68.8%inrural areas there was easy access to eye care services. Female preponderance was also seen in re Gandaki Zone.[4] Similar results were obtained in Lumbini Zone and Chetwan district of Nepal wherewomen constituted 52% and 53% of the total enumerated and examined population respectively.[5] This is different from most hospital based studies where there is male preponderance.[6]

Maximum number of patients belonged to age group of 30-60 years in OPD. Earlier study done by Brac University showed maximum population was between 18 to 40 years.These findings show that common eye diseases are usually not sex linked but may be linked with age.6Aging affects the stability of tear film which is important for clear vision and comfort of the eyes. Tear instability causes dry eye which is prone for allergy as well as infection.[2] In our study allergic conjunctivitis (24.85%) was found to be the most common disease among distribution of diseases treated in OPD due to hot and dry environment, dust and environmental pollution. This results were correlated with the result of Hasib MI7.

Allergic conjunctivitis is one of the most common inflammatory disorders of anterior chamber of the eye, which has been considered the epidemics of the twenty-first century[7].

Allergic conjunctivitis was the most common ocular morbidity accounting followed by cataract 15.34%), cataract is one of the leading cause of preventable blindness in Bangladesh. The prevalence rate was below than the prevalence rate of the study done by BRAC University Bangladesh which was 24.5%.[3] This low level was probably due to more facility prevail in Sylhet such as one government medical college,four private medical college.Several potential NGO's are there. They take part in cataract surgery in collaboration with National Eye Care Project.[9]

Other causes of visual impairment were refractive error (9.55%), Optic atrophy (o.19%) and corneal opacities (0.81%). Retinaldetachment (0.15%). Refractive error was the most common ocular morbidity accounting 9.55%,Headache[9]. 21% one of common of morbidity facing our ophthalmology unit.In a study done in Ethopia, trachoma was found to be the leading cause of ocular morbidity (33.7%) followed by refractive error (6.3%)[10] and study done in Nigeria, Allergic conjunctivitis was the most common ocular disease seen in 32.9%, followed by cataract (14.7%), ocular injuries (12.8%) and refractive errors (9.9%).[11]

Infective Conjunctivitis(6.90%) was found as the fifth most prevalent eye diseases among our study population.Viral keratitis(3.06%) one of newly rising health problem.Pterygium (2.66%), chalazion(3.32%), stye (1.82%), ectropion/entropion& others (0.02%),viral keratitis (3.06%), dry eyes (5.17%) and corneal opacities (0.81%).

Conclusion

Our study provides hospital based data on the prevalence of clinically diagnosed eye diseases among the population attending in this hospital of Sylhet city. The high prevalence of allergic conjunctivitis, refractive error, cataract, and visual impairment suggests the importance of provision for eye care services to this group of people. In Bangladesh, ophthalmologists provide treatment for different eye illnesses at hospital settings, while BRAC and few other organizations provide eye care at community settings. Basic eye care including screening of the refractive errors can be implemented at the primary level by the communityhealth workers at an affordable cost.

There should also be community awareness program to promote the information on importance of early eye care to prevent long term consequences. Large population based longitudinalstudies also needed to identify other behavioral, environmental and genetic risk factors that might be unique for Bangladeshi populationwhich will be beneficial to get solutions and reducing the risk. People should get awareness about the eye care services and appropriate treatment. From the government side and health practitioners should take responsibility in reducing this ocular morbidity.

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ORIGINAL ARTICLE

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Incidence & Distribution Pattern of Skeletal Metastasis Detected by Tc-99M Bone Scintigraphy among Breast Cancer Patients attending at INMAS, Sylhet

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Abstract

Breast cancer is the most common cancer in women both in the developed and less developed world. Bone scintigraphy (BS) using Tc-99m (technetium 99m methylene-diphosphonate) is considered the most sensitive method of detecting skeletal metastases. The objective of thisstudy was to evaluate the incidence & distribution of skeletal metastases in breast cancer patients by using Tc-99m MDP bone scan. A retrospective study was conducted on 271consecutive female breast carcinoma patients referred for bone scan to Institute of Nuclear Medicine and Allied Sciences, Sylhet from January 2017 to December 2018. Out of 271 patients, 226 patients (83.40%) had normal bone scan and 45 patients (16.60%) were positive for skeletal metastases. Out of28 (62.20%) patients had multiple sites (two or more) and 17 (37.80%) patients had solitary site of bony involvement.Highest number of skeletal metastases was noted in rib (66.70%). Other sites of metastases were in spine (64.40%), pelvis (26.70%), extremities (31.10%), sternum (11.10%) and skull bone (20.00%). Our results indicate that incidence of skeletal metastatic was 16.6% in which multiple sites involvement more than solitary lesion and rib were more frequent site of involvement. However, the clinical data and pattern of bone scan findings help the physician to narrow the diagnostic differentials.

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Introduction

Women with breast cancer are vulnerable to develop metastatic diseases during the presentation or follow up. Bone represents the first site of metastasis for 26% to 50% of patients with metastatic breast cancer[1,2]. It has been used routinely in higher-risk cancer patients, especially in breast, prostate and lung cancers, which are known for their high incidence rate of bone metastases[3-5]. Severe complications will present following bone metastases in breast cancer patients such as pathological fractures, severe pain, bone instability, spinal cord compression and hypercalcemia. These will reduce the quality of patient's life. Therefore, early detection and diagnosis of bone metastasis in patients with breast cancer is helpful for the treatment6.Bone scan is a traditionally sensitive and efficientmethod for initial evaluation and follow-up of bone metastases. Published sensitivity and specificity rates of bone scan for diagnosis have varied,with sensitivity ranging from 62% to 100% and specificity from 78% to100%. The aim of this study was to evaluate the incidence and pattern of skeletal metastases in breast cancer patients by using Tc-99m MDP bone scan.

Materials and Methods

A retrospective study was conducted on 271 consecutive female breast carcinoma patients irrespective of clinical stage, menopausal status and pre operative/postmastectomy status, referred for bone scan to Institute of Nuclear Medicine and Allied Sciences, Sylhet from January 2017 to December 2018. The mean age of the patients was 46.1 ± 10.5 years (mean ± SD) with range from 23 to 85 years. Patient's clinical records and bone scan reports were reviewed retrospectively. In our institute we used SPECT (single photon emission computed tomography) digital dual head gamma camera(e-cam series, Siemens from Germany) with a low-energy high resolution parallel-hole collimator. Bone scan was performed by an intravenous bolus injection of 20m Ci Tc-99m. Bone phaseimages were taken at three hours after injection of the radiotracer and the scan time was about 30

minutes for a whole-body scan. Whole bodyscan in anterior and posterior projections were obtained. All scans were interpreted for metastatic deposits by two nuclear medicine physicians.Number of colonies obtained was multiplied by 1000 to obtain the colony forming units (CFU/ml). A cut off point of 103 and 105 colony forming unit (CFU/ml) for symptomatic male and female patients respectively were considered as positive culture. Data were processed manually and analyzed with the help of SPSS (Statistical package for social sciences) Version 21.0. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated for each of the methods (microscopic pyuria detection and dip-stick LET and NT) using standard formulae.

Results

Table-I shows the distribution of patients according to age group. 12 (4.4%) patients were in the age group of 19 to 29 years, 55 (20.3%) patients were in the age group 30 to 39 years, 100 (36.9%) patients were in the age group 40 to 49 years, 73 (26.9%) patients were in the age group 50 to 59 years, 26 (9.6%) patients were in the age group 60 to 69 years and 5 (1.8%) were the age of 70 years or more.

Table-I: Distribution of breast cancer patients according to age group (n=271)

Age Group	Frequency	Percentage
19-29	12	4.4%
30-39	55	20.3%
40-49	100	36.9%
50-59	73	26.9%
60-69	26	9.6%
70	5	1.8%

Out of 271 patients, 226 patients (83.40%) had either normal bone scan or negative for skeletal secondaries and45 patients (16.60%) were positive for skeletal metastases (Figure-1).

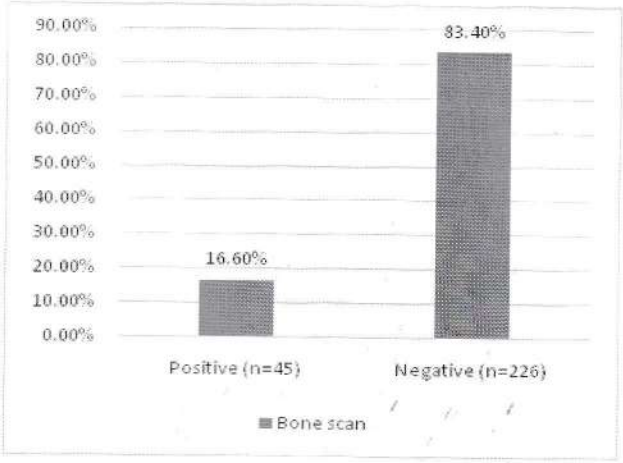

Figure-1: Incidence of skeletal metastases of breast cancer(n=271)

Out of 45 patients with positive bone scan 28 (62.20%) patients had multiple sites (two or more) and 17 (37.80%) patients had solitary site of bony involvement (Figure-2). Table-II shows the distribution of skeletal metastases of breast cancer according to age group. Lowest prevalence, 2 (4.4%) in patients were in the age group of 19 to 29 years and highest 16 (35.6%) in patients were in the age group of 40 to 49 years.

Table-II: Distribution of skeletal metastases of breast cancer according to age group (n=45)

Age Group	Frequency	Percentage
19-29	2	4.4%
30-39	7	15.6%
40-49	16	35.6%
50-59	10	22.2%
60-69	8	17.8%
70	2	4.4%

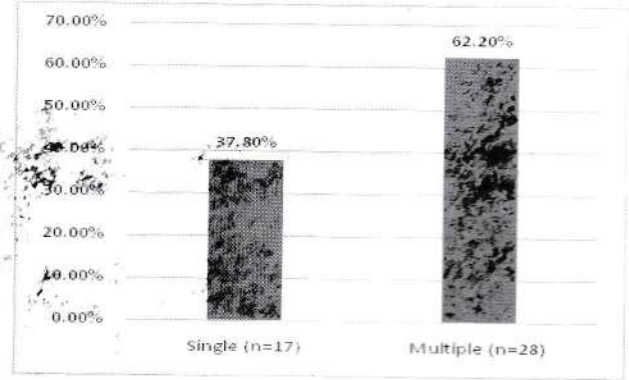

Figure-2: Incidence of skeletal metastases for breast cancer according to number of bones sites involvement(n=45)

Among 45 positive bone scan patients, highest number of skeletal metastases was noted in rib (66.70%). Other sites of metastases were in spine (64.40%), pelvis (26.70%), extremities (31.10%), sternum (11.10%) and skull bone (20.00%) (Figure-3).

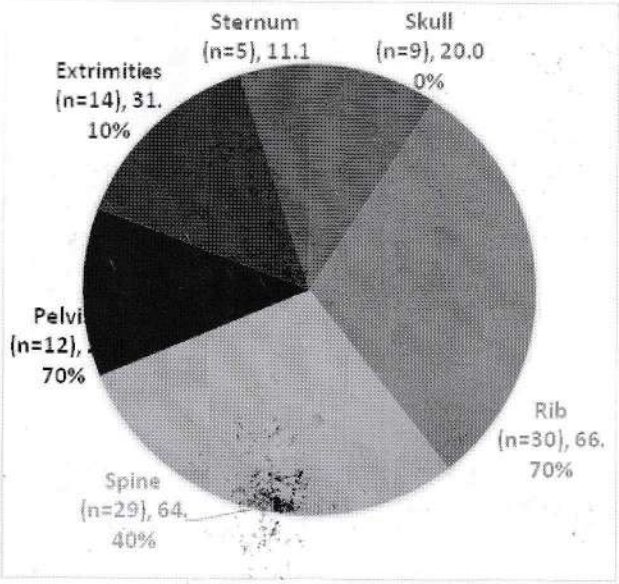

Figure-3: Frequency of anatomical distribution of skeletal metastases in breast cancer patients

Discussion

Bone scintigraphy, using methylene diphosphonates labeled with Tc-99m, is generally considered as a sensitive method for detecting osteolytic or osteoblastic bone metastases on whole-body images that can be obtained at reasonable cost. Compared to other modalities, bone scan is characteristic by its high sensitivity, easy accessibility, and providing whole-body imaging of bonemetabolism[7].The usual appearance of skeletal metastases on bone scan is focal hot spot; however, rarely focal cold defects are also noted. It is more frequently used than the other modalities, and breast cancer patients get benefit from a routine baseline bone scan and a regular follow-up[8].

Bone consists of cortical, trabecular, and marrow components. Cortical bone is compact and has canals containing vessels, which represents 80% of skeletal volume. A thin layer of compact bone surrounds trabecular bone, also known as cancellous or spongy bone, which encompasses the bone marrow. Most of the red marrow is located in axial bones (e.g., vertebrae, pelvis, proximal femora); whereas fat marrow is found in appendicular bones (e.g., long bones). Constant bone remodeling involves maintaining a dynamic balance between osteoclast and osteoblast activity, and both cell types can be active at the same time - that explains how bone metastases can present as osteolytic (bone resorption), osteoblastic (bone formation), or mixed lesions. In many cases, osteolytic and osteoblastic changes occur simultaneously. Up to half of all bone metastases from breast cancer tend to show osteolytic changes[9].

Skeletal metastases of breast cancer will mainly occur from hematogenous dissemination. Breast carcinoma cells can easily migrate to neighboring ribs and spinal vertebrae via Batson venous plexus, and spread to the sternum via the para sternal lymph nodes[10]. In our study, out of 271 patients, 226 patients (83.40%)had normal bone scan and 45 patients (16.6%) had abnormal bone scan attributable for metastatic tumor. MS Afzal et al.[11] found positive bone scan in 38% patients out of 465 breast cancer patients.Kotb MH et al.[12]found positive bone scan in 18.2% patients out of 450.Hosen et al.[13] found 26.8% patients was asymptomatic for skeletal metastases in breastcancer patients.

In present study, out of 45 patients with positive bone scan 28 (62.2%) patients had multiple sites (two or more) and 17 (6.3%) patients had solitary site of bony involvement. In a study of comparison between solitary and multiple skeletal metastatic lesions of breast cancer patients by M. Koizumi et al.[14] found that out of 703 patients with metastatic bone lesions, 289 (41%) had a solitary bone lesions and 414 (59%) had multiple bone lesions at the time ofdiagnosis. Hosen et al.13found that out of 160 consecutive studied breast cancer patients, 79% were having multiple metastatic lesions.

Among 45 positive bone scan patients, highest number of skeletal metastases was noted in rib (66.70%), which differ from other studies. It may be due to different spreading pathways. At early stages breast cancer may directly include the nearby ribs or may spread to the ribs via the aorta following metastasis to lung. Other sites of metastases were in spine(64.40%), pelvis (26.70%), extremities (31.10%), sternum(11.10%) and skull bone (20.00%). MS Afzal et al.[11]found highest number of bony lesions were in spine(84.5%) most common in thoracolumbar, followed by ribs (55.5%), pelvis (37.3%) most frequent in iliac bone),skull(32%), scapula (27.3%), sternum (26.4%), femur(19.1%), hummers (14.5%), clavicle (3.6%) and tibia(0.9%). In another study of patients with breast cancer conducted by Hosenet al.[13], out of 135 positive bone scan patients, highest number of

skeletal metastases was noted in thoraco-lumbar spine (81.48%). Other sites of metastases were in other spine (22.96%), pelvis (54.81%), ribs (40.74%), sternum (16.30%), scapula (19.26%), upper extremities (28.15%), lower extremities (36.30%), skull bone (12.60%).

Conclusion

Incidence of skeletal metastases in breast cancer patients was 16.60% in which multiplesites involvement more than solitary lesion. Rib was the most common site of involvement in our study. The pattern of bone scan findings might help the physician to narrow the diagnostic differentials in case of diagnosis and treatment planning of the patients.

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ORIGINAL ARTICLE

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Profile of Colonic Polyps in a North-Eastern Bangladeshi Population

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Abstract

In Western countries, approximately 70% of colonic polyps are adenomatous in nature. The prevalence of adenomas roughly parallels the risk of colorectal malignancies. In Southern Indian adults, most colonic polyps are adenomatous and are in the left colon. But no such study is available in our country. This study was done at Sylhet M.A.G Osmani Medical College Hospital and Jalalabad Ragib Rabeya Medical College Hospital, Sylhet from 2012 to 2014. During this period, 150 polypectomy was done. Out of them, only convenient 40 adult patients were selected for this study. For each patient, age, indication for colonoscopy, morphological details and histology of the polyps were recorded prospectively. Mean age of the patients with polyps was 33.4±19.6 (range 5-70) years. 32 (80%) patients were male. 15 (37.5%) polyps were inflammatory, 12 (30%) polyps were hyperplastic, 7 (17.5%) were adenomatous and of 6 (15%) were juvenile polyps. 80% polyps were in left colon. In conclusion, inflammatory and hyperplastic polyps are predominant histologic type in our serises and most of the polyps are located in the left colon.

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Introduction

The frequency of colonic polyps varies widely among different populations. Colorectal polyps are extremely common in western countries; they are found in >30% of autopsies performed in people aged >60 year.[1,2] The main importance of polyps is their well recognized relationship to colorectal cancer.[3]

Approximately 70% of polyps removed at colonoscopy are adenomas.[4] Hyperplastic, juvenile and inflammatory polyps are the other common forms. The prevalence of adenomas in the western population roughly parallels the risk of colorectal malignancies.[5] There are few studies about colonic polyps from South East Asia.[6,7,8,9] Podder et al[6] reported that juvenile polyps are predominant in children, that these are located in the rectosigmoid region. Kumar et al[7] found that juvenile polyps are the most common histologic type in both children and adults. In a study from a tertiary referral center in northern India, 17 adenomas were detected in 824 colonoscopic examinations.[8] In Southern Indian adults, most colonic polyps are adenomatous and are in the left colon.[9] But no such study is available in our country. With this background the study was designed to see the profile of colonic polyps in the north east part of Bangladesh.

Materials and Methods

This cross sectional study was done at the gastroenterology department of Sylhet M.A.G Osmani medical college Hospital and Jalalabad Ragib Rabeya medical college Hospital, Sylhet from 2012 to 2014. During this period, 150 polypectomy was done. Out of them, only convenient 40 patients were selected for this study. Any patient with incomplete colonoscopy was excluded from this study. Polyethylene glycol was used for bowel preparation of the patient before Colonoscopy. Most of the Colonoscopy were performed without sedation but some patients were consciously sedated by giving them 2-5 mg of midazolam and/or 30-50mg of pethidine intravenously. After cleaning and washing with standard liquid disinfectant, Olympus CV-150 (Olympus Corp. Tokyo, Japan) video scopes were used. For each patient, age, indication for Colonoscopy, morphological details and histology of the polyps were recorded.

Data was analyzed using SPSS version 21.0 (IBM Corp., Armonk, NY). Mean and standard deviation (SD) was calculated for continuous variables such as age. Frequencies and percentages were calculated for categorical variables including gender, location and outcome.

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Results

Mean age of the patients of colonic polyps was 33.4±19.6 (range 5-70) years. 32 (80.%) patients were male. Indication for colonoscopy was hematochezia in 22 (55%), lower abdominal pain in 10 (25%), altered bowel habit in 4 (10%), loose motion in 2 (5%), follow up after colorectal cancer surgery in 1 (2.5%) and screening for CRC with family history of colorectal cancer in 1 (2.5%) patient. Mean age of the patients with inflammatory, hyperplastic, adenomatous and Juvenile polyps was 32.5 (19.7) (range 15-68), 37.3 (10.6) (range 22-53) and 51.2 (16.1) (range 22-60) and 6.8 (1.7) (range 5-10) respectively. The male, female ratio for patients with different types of polyps was 4:1, 5:1, 5:2 and 5:1 respectively. Single polyp was seen in 26 (65%) cases, two or more polyps are seen in 13 (32.5%) cases and more than 100 polyps are seen in 1 (2.5) cases. 20 (50%) polyps were <1cm in size and 20 (50%) polyps were ?1cm in size. Pedunculated polyps were found in 19 (47.5%), sessile polyps in 15 (37.5%). Both sessile and pedunculated polyps were found in 6 (15%) cases.

In histology, 15 (37.5%) polyps were inflammatory, 12 (30%) polyps were hyperplastic, 7 (17.5%) were adenomatous and of 6 (15%) were juvenile polyps. Of 7 adenomatous polyps 5 (71.4%) were tubular, 1 (14.2%) was tubulovillous and 1 (14.2%) was villous with mild dysplasia.

Table I: Sex distribution of patients with colonic polyps.

Sex	Number of patient	Percentage
Male	32	80%
Female	8	20%
Total	40	100%

Table II: Indication of colonoscopy.

Indication	Number of patient (%)
Per rectal bleeding	22 (55%)
Lower abdominal pain	10 (25%)
Altered bowel habit	4 (10%)
Loose motion	2 (5%)
Follow up after colorectal cancer surgery	1 (2.5%)
Screening for CRC	1 (2.5%)

Table III: Location and histologic types of polyps.

Location	Histologic types				Total
	A	H	J	I	
Rectum	2	5	3	5	15
Sigmoid colon	2	4	3	7	16
Descending colon	0	0	0	1	1
Transverse colon	0	3	0	1	4
Caecum & ascending colon	2	0	0	0	2
Throughout the colon	1	0	0	1	2
Total	7	12	6	15	40

A: adenomatous, H: hyperplastic, J: juvenile, I: inflammatory

Table IV: Distribution of patients according to morphological types of polyps

Types of polyps	No. of patients	Percentage
Sessile	15	37.5%
Pedunculated	19	47.5%
Both sessile and pedunculated	6	15%
Total	40	100%

Table V: Distribution of patients according to size of polyps

Size of polyps	No. of patients	Percentage
<1 cm	20	50%
1 -2 cm	10	25%
>2 cm	10	25%

Table VI: Histological types of adenomatous polyps and their relationship with degree of dysplasia

Histolosic type	Degree of dysplasia		
	Nil	Mild	Severe
Tubular	5 (100%)	0	0
Tubulo villous	1 (100%)	0	0
Villous	0	1 (100%)	0

Percent values are row percentages

Discussion

In our study, adenomatous polyps were common in advanced age, which is consistent with a study from Iran.[10] Our study is also consistent with Iranian study regarding association of polyp with male sex and the most prevalent symptom.

In our study, a majority of polyps were inflammatory and hyperplastic. India is considered a low prevalence region for colonic adenoma and colorectal malignancy.[11,12] Adenomatous polyps were the predominant type in Iran and western countries[4,13]. Hyperplastic polyps are the dominant type in Thailand[14]. In south Indian population, the major histologic type was adenomatous polyps[9]. In our series, most of the polyps were located in the left colon which is consistent with report from southern India[9].

In our series, the frequency of tubular, tubulovillous and villous histology was 71.5%, 14.3% and 14.3% respectively. In South Indian population, the frequency of tubular, tubulovillous and villous histology was 62%, 24% and 14%[9]. In western reports, tubular adenoma accounted for 80% to 86%, tubulovillous for 8% to 16% and villous adenoma for 3% to 6% of adenomatous polyps[4,15].

Conclusion

Inflammatory and hyperplastic polyps are predominant histologic type in our study and most of the polyps are located in the left colon.

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ORIGINAL ARTICLE

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Role of Subcutaneous Closed Suction Drain in Reducing Surgical Site Infections after Emergency Laparotomy in Class IV Surgical Wound

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Abstract

Wounds and their management are fundamental in surgical practice. Laparotomies in class-IV surgical wound carry a higher risk of wound infection. Subcutaneous drains have been used to reduce the risk of infection. Aims and Objective: To compare incidence of surgical site infection (SSI) after eemergency laparotomies in class-IV surgical wounds with or without subcutaneous closed suction drains. Materials and Methods: This prospective and comparative study was conducted in the Department of Surgery, Sylhet MAG Osmani Medical College Hospital, Sylhet dung the period between January to December 2017. Sixty adult patients undergoing midline laparotomy for emergency abdominal surgery with dirty-contaminated class-IV wounds were selected and were divided into Group I where subcutaneous closed suction drain was placed and group II where no subcutaneous drain used. Results: SSI was reported in 4 (13.3%) cases in group I and 11 (36.7%) cases in group-II. Surgical site infection was significantly reduced in group-I compared to Group-II (RR=0.266 (95% CI=0.073-0.964; p=0.039]. Use of a subcutaneous closed suction drain results in significant reduction in wound infection. It should be used in all cases of class-IV (dirty-contaminated) surgical wounds after closure of sheath.

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Introduction

Surgical site infections (SSI) defined as infection occurring up to 30 days after surgery (or, up to one year after surgery in patients receiving implants).[1] Development of a SSI has a large impact on mortality and morbidity as well as healthcare costs, patient inconvenience and dissatisfaction.[2] Worldwide, SSIs are a challenging problem to surgeons and patients, particularly in heavy contamination. It is reported an incidence of 2% to 30%, or even higher, depending on the type of surgery and patient characteristics.[1,3,4]

Class IV surgical wound is defined as old traumatic wound with retained devitalised tissue; procedure with existing clinical infection (purulence already present in wound) or perforated viscera.[5] In cases of perforation peritonitis abdominal closure is challenging to surgeon as patients sometimes present late, bowel is oedematous and there is presence of pus in peritoneal cavity. There will be outpouring of fluid or pus from peritoneal cavity to surgical wound-subcutaneous tissue till infection is controlled, which can lead to wound infection and wound dehiscence. If the wound kept open then there is high risk for developing nosocomial infection.[6]

In class IV surgical wounds, the rate of Incisional Surgical Site Infection (Incisional SSI) is reported in more than 30% cases. Incisional surgical site infection causes delayed wound healing, high patient discomfort, bad cosmetic result, prolonged hospital stay and increased cost of treatment and high risk for developing incisional hernia later on.[7,8]

It has been postulated that the presence of haematoma, serous fluid, and dead space in surgical incisional wounds increases the risk of infection as this acts as a culture medium.[9,10] Subcutaneous drain helps to remove collections and elimination of dead space thus it may result in lowering rate of wound complications.[11,12] However, the use of postoperative subcutaneous wound drainage is not universally accepted. In addition drains may not be efficacious and cause discomfort and increased hospital stay on their own.[13]

The objective of this study was to compare the incidence of incisional surgical site infections in dirty-contaminated class-IV emergency abdominal surgical wounds with subcutaneous closed suction drains versus those in who subcutaneous drains are not used.

Materials and Methods

This prospective and comparative study was conducted in the Department of Surgery, Sylhet MAG Osmani Medical College Hospital, Sylhet dung the period between January to December 2017. Sixty adult patients undergoing midline laparotomy for emergency abdominal surgery with dirty-contaminated class-IV wounds in surgeries for perforated bowel repair, peritonitis, perforated gastric ulcer, appendicectomy with perforation were taken up. Cases with simultaneous medical diseases e.g. diabetes, arteriopathy, hepatic or renal conditions, severe anaemia, poor nutritional status, immunocompromised status, having malignancy, patients who died within 48 hours of surgery were excluded. They were divided in two groups. Group I (study group) includes patients where subcutaneous closed suction drain was placed and group II (control group) includes patients where no subcutaneous drain used.

In all 60 patients, were evaluated clinically and routine investigations were sent at the time of admission. All were given prophylactic antibiotic, Injection Ceftriaxone 1gm and injection Metronidazole 500mg/100ml iv was given at the time of induction. Injectable antibiotics were continued for 5 and 3 days respectively after surgery in their regular dosages, in both groups as required.

After tackling primary pathology abdominal closure was done in following manner; Wound was irrigated with normal saline (0.09%) adequately before closure every time. Standardized closure techniques for sheath and skin was closed with 2-0 monofilament vertical mattress interrupted sutures used at all times. There were no differences in the surgical procedures and closure, except that a suction drain was inserted along the entire length of the subcutaneous tissue. The exit of the drain was separated from the incisions. The suction drain was removed on postoperative day five.

SSI cases were diagnosed within 30 postoperative days by ICT according to the centers for disease control and prevention (CDC) criteria:

1) Purulent drainage with or without laboratory confirmation from the superficial incision

2) Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision

3) At least one of the following signs or symptoms of infection: Pain or tenderness, localized swelling, redness, or heat and superficial incision were deliberately opened by surgeon, unless the incision was culture-negative; and

4) Diagnosis of s-SSI by the surgeon or ICT.

All continuous variables were reported as mean ± SD and compared across groups using unpaired t test. All categorical variables were reported as frequency (%) compared across groups using Chi-square test for independence of attributes. Any p value<0.05 has been taken as significant. SPSS software version 22 has been used for the analysis.

This study was approved by ethics committee of Medical College, Kolkata, India. Informed consent was taken from all participants or their legal guardians before enrolment in this study.

Results

The mean age (Mean ± SD) of the patients was 35.70 ± 13.46 years (range 18 to 60 years) in Group-I and was 30.57 ± 9.91 years (range 18 to 55 years) in Group-II. There was no significant different of mean age between two groups (t=1.682; p=0.098) (Table-I). In Group-I, 16 (53.3%) patients were between 21 to 40 years whereas 18 (60.0%) patients were in same age group in group-II; difference between two groups was not significant (p=0.121) (Table-I).

In group-I, 23 (76.7%) cases were male whereas in group-II 19 (63.3%) cases were male; difference between two groups was not significant (χ^2=1.270; p=0.260) (Table-I).Types of operation was almost similar in both groups (p=0.575) (Table-II).

Table-III showed that surgical site infection developed in 4 (13.3%) patients in group-I and 11 (36.7%) patients in group-II. Development of surgical site infection was significantly reduced in group-I compared to Group-II (RR=0.266 (95% CI=0.073-0.964;χ^2=4.356; p=0.039].

Table I. Distribution of the participants according to baseline characteristics

Baseline characteristics		Group-I (n=30)	Group-II (n=30)	p-value
Age				
	Mean ± SD	35.70 ± 13.46	30.57 ± 9.91	†p=0.098
	20 years	5 (16.7%)	5 (16.7%)	
	21-30 years	8 (26.7%)	15 (50.0%)	*p=0.121
	31-40 years	8 (26.7%)	3 (10.0%)	
	41-50 years	4 (13.3%)	6 (20.0%)	
	51-60 years	5 (16.7%)	1 (3.3%)	
Sex				
	Male	23 (76.7%)	19 (63.3%)	*p=0.260
	Female	7 (23.3%)	11 (26.7%)	

*Chi-Square (χ^2) test and †unpaired t test. SD=Standard deviation.

Table II. Distribution of the patients according to type of operation

Type of operation	Study group		p-value
	Group-I (n=30)	Group-II (n=30)	
Duodenal ulcer perforation	9 (30.0%)	10 (33.3%)	*p=0.757
Traumatic Bowel Perforation	7 (23.3%)	4 (13.3%)	
Ileal perforation	5 (16.7%)	5 (16.7%)	
Burst appendix	4 (13.3%)	7 (23.3%)	
Appendicular abscess	2 (6.7%)	3 (10.0%)	
Gastric ulcer perforation	3 (10.0%)	1 (3.3%)	
Total	30 (100.0%)	30 (100.0%)	

*Fisher Exact test. SD=Standard deviation

Table III. Distribution of the patients according to development of surgical site infection

Surgical site infection	Study group		Risk Ratio (95% CI)	p-value
	Group-I (n=30)	Group-II (n=30)		
Develop	4 (13.3%)	11 (36.7%)	0.266 (0.073-0.964)	*p=0.037
Not develop	26 (86.7%)	19 (63.3%)		
Total	30 (100.0%)	30 (100.0%)		

Chi-Square (χ^2) test was applied to analyse the data. RR=Risk ratio, CI=Confidence interval.

Discussion

Class IV surgical wound also called as dirty/infected wound, includes old traumatic wound with retained devitalised tissue, procedures with existing clinical infection or perforated viscera. Examples of class IV wounds includes perforated bowel repair, peritonitis, perforated gastric ulcer, appendicectomy with perforation, incision and drainage of perianal abscess etc. in general surgery.[5] Several approaches to preventing SSI such as perioperative high inspired oxygen therapy, wound protectors, timing of antimicrobial prophylaxis, and subcutaneous drains have been reported.[6]

In this study the mean age of the patients was 35.70 ± 13.46 years in drain group and was 30.57 ± 9.91 years in no drain group; difference was not significant (p=0.098). In drain group 16 (53.3%) patients were between 21 to 40 years whereas 18 (60.0%) patients were in same age group in no drain group; difference between two groups was not significant (p=0.121). This result almost similar to the study of Patel et al.[14]

In this study 23 (76.7%) cases were male in drain group 19 (63.3%) cases were male in no drain group; difference between two groups was not significant (p=0.260). This result correlated with several other studies.[14-16]

This study showed that surgical site infection developed in 4 (13.3%) patients in drain group and 11 (36.7%) patients in no drain group. Development of surgical site infection was significantly reduced in drain group compared to no drain group (RR=0.266 (95% CI=0.073-0.964; p=0.039]. This result correlated with several studies. Kumar et al.[16] found that the use of a subcutaneous closed suction vacuum drain resulted in statistically significant reduction in wound infection (58% vs. 16%) with a p value of < 0.01. Patel et al.[14] found that the incidence of surgical site infection in drain group was lower than the no drain group, which was statistically significant (p value 0.05). Gupta et al.[15] stated that incisional SSI in study group I (drain group) was reported in 2 patients (6.45%), whereas rate of Incisional SSI was very high, 16 patients (51.61%) among group II control group (no-drain group). Fujii et al. [12] included high risk patients, including emergency laparotomies, and patients with thick subcutaneous fat and the risk ratio showed a reduction in the SSI rate in the drain group (RR 0.37 (0.15-0.9)). But Kaya et al.[17] found rate of SSI was almost similar in drain and non drain group (5.7% and 9.9% respectively; p=0.116). On the other hand, Hellums et al.[18] in their meta-analysis suggested that prophylactic use of subcutaneous drainage did not prevent significant wound complications. The difference may be due to the condition of wound. Kaya et al.[17] and Hellums et al.18 reported SSI after elective abdominal operations and cesarean delivery respectively. But rate of SSI after contaminated (type-IV) abdominal operations was demonstrated in the present study.

This study was not without limitations. The limitations were (1) single centre study and (2) small sample size.

Conclusion

Subcutaneous drain significantly reduced surgical site infection laparotomies of class-IV (dirty-contaminated) surgical wounds after closure of sheath. Therefore subcutaneous drain should be used in all cases of class IV laparotomy wound.

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Prevalence of Obesity among Secondary School Children (11 -16 Years) in Sylhet Metropolitan Area, Bangladesh

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Abstract

Obesity and overweight in children and adolescents is an emerging public health concern alongside under-nutrition in low and middle income countries like Bangladesh. Obesity has been declared an epidemic in many high income countries. In low income countries, the coexistence of obesity and underweight makes the situation more grievous. To determine the prevalence of obesity among secondary school children.This cross sectional observational study was conducted on healthy secondary school children, aged 11 to 16 years who were randomly selected from systematic randomly selected schools at Sylhet Metropolitan area in Bangladesh between July 2017 and December 2017. After that researcher measured the height and weight then BMI was calculated for each selected student in the class. Weight was measured using a portable bathroom weighing standardized scale with 0.5 kg precision while wearing light clothes. Height was measured in centimeters using a stadiometer with 0.5 cm precision, while children standing straight without shoes, heels together, and child's heals, buttocks, shoulders and head touching the vertical surface with line of sight aligned horizontally. Overweight and obesity was defined according to WHO. Data were collected by using predesigned structured questionnaire.

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Introduction

Obesity is an important pediatric public health problem. It carries risk of complications in childhood and increased morbidity and mortality throughout adult life. Obesity is defined using the body mass index (BMI) which is an excellent proxy for more direct measurement of body fat.[1] BMI which is > +2 standard deviations (SD) and >+1 SD from the World Health Organization (WHO) growth reference median for persons aged 5-19 years fall in obesity and overweight range respectively.[2] Obesity is a consequence of an energy imbalance i.e. when energy intake exceeds energy expenditure over an extended period of time. Overweight and obesity have adverse metabolic effects on blood pressure, cholesterol and insulin resistance.Life threatening problems such as cardio-vascular diseases and type-2 diabetes etc are associated with overweight and obesity. Near about 85% of people with diabetes are type 2 and among them 90% are obese or overweight.[3]

Prevalence of obesity varies from country to country and by gender, age, and social class.[4] The prevalence of obesity and overweight among Bangladeshi school children of 6 to 15 years old found 3.5% and 9.5% respectively.[5] Other study in South East Asian countries showed the almost similar rate of obesity among school aged children.[6] Saudi children aged 6 to 18 years, the prevalence of obesity and overweight was around 5.38% and 11.62% of boys and 6.32% and 13.78% of girl respectively.[7] A study conducted amongst school children in Dhaka aged between 3 to 18 years of age, found 17.9% obese and 23.6% overweight children and adolescents,and more boys were both overweight and underweight compared to girls aged 6 to 15 years.[5,8] The prevalence of childhood overweight and obesity in the urban areas in Bangladesh has increased only in the last few years.[9]In Lebanon, prevalence of childhood obesity much higher in boys 7.5% than the girls 3.2% among 3 to 19 years old.[10] A study done in China found that overweight and obesity are multi-factorial disease and its development is the result of multiple interactions between genetic and environmental factors.[11] Factors contributing to the rising childhood obesity epidemic

include higher socioeconomic status, urban residence, dieting, decreased level of physical activity watching TV >2 hours, playing video games.[12-15]

In recent years, Sylhet Metropolitan area is being rapidly urbanized, gradually decreasing number of playgrounds, and easy access to devices of indoor games probably have led to less physical activity that may cause overweight and obesity problem among children. Therefore, this study was conducted to determine the prevalence of obesity among secondary school children at Sylhet Metropolitan area in Bangladesh.

Materials and Methods

This cross sectional observationalstudy was conducted on healthy secondary school children, aged 11 to 16 years at Sylhet Metropolitan area in Bangladesh between July 2017 and December 2017. Children with physical deformity and with chronic debilitating disease were excluded from the study.There are 27 geo-political wards in Sylhet Metropolitan area where 30 secondary schools are present. Ten schools were selected using systematic random sampling. From class sixth to tenth of each selected school was included in this study. Then 50 children from each school (10 from each class) was selected systematic random sampling to reach the required sample size of 500. Data were collected by using predesigned structured questionnaire. Student was asked to fill in the first part of the questionnaire at the classroom in the presence of the researcher. The first part included information about school name, class, age and gender. After that researchers measured the height, weight and BMI was calculated for each student in the class. The second part included information about mothers' and fathers' income, living area, family type, time spent on reading, playing outside, watching TV or computer and video games, number of daily meals and types of foods. Weight was measured using a portable standardized bathroom weighing scale with 0.5 kg precision while wearing light clothes. Height was measured in centimeters using a stadiometer with 0.5 cm precision, with the children standing straight without shoes, heels together, and child's heals, buttocks, shoulders and head touching the vertical surface with line of sight aligned horizontally. Obesity was defined according to WHO. After calculation of BMI Z -scores, all the children were divided into two groups. Obese children were included in Group I and non-obese children were in group II.

Statistical analysis of the data was performed using SPSS Version 22.0 software (SPSS Inc., Chicago, Illinois, USA). Obtained data were expressed in frequency, percentage, mean and standard deviation as applicable. Comparison between groups was done by Student's T-test and Z-test for continuous variables and Categorical data were analyzed by chi-square test. The level of significance was set p value <0.05.Written approval was taken from the concerned authority of secondary schools and informed written consent was taken from the parents before collecting data. Ethical clearance was taken from ethical Committee of Sylhet MAG Osmani Medical College to perform the study.

Results

A total number of 500 secondary school children were included in this study. Almost half (51.4%) population were female and more than half (58.0%) came from upper-middle-income family (Figure 1& 2).

Figure 1: Sex distribution of the study children

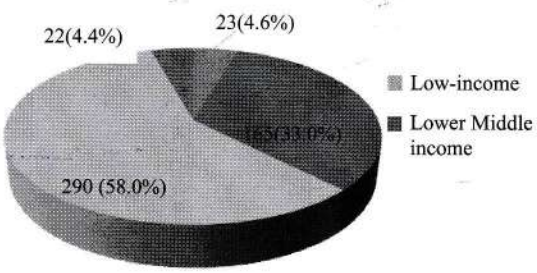

Figure 2: Socio-economic status of the study population

In this study, the mean age of male children's was found 13.3±1.6 year with ranged from 11-15 years and the mean age of female children was found 13.4±1.6 years with range from 11-15 years. The mean of male children's height was found 154.6±11.7 cm with ranged from 122-179 cm and the mean of female height was found 151.7±8.0 cm with ranged from 123-175 cm. The mean of male children's weight was found 44.9±12.8 kg with ranged from 21.5-91.5 kg and the mean of female children's weight was found 44.2±10.8 kg with ranged from 20.5-86.5 kg. The mean of male children's BMI was found 18.5±4.0 kg/m2 with ranged from 12.5-33.3 kg/m2

and the mean of female children' BMI was found 19.0±3.7 kg/m2 with ranged from 11.7-33.3 kg/m2. In this study, it was observed that BMI Z score >+2SD to ? + 3SD (Obesity) was found in 3.8% male and 2.8% female children (Table I). In this study, it was also observed that 6.6% children were obese and 93.4% children were non-obese (Fig III).

Table I: Distribution of the study population by BMI Z score (N=500)

BMI Z score	Male(n=243)		Female(n=257)	
	n	%	n	%
1SD to - 2SD (Normal weight)	150	30.0	185	37.0
> +1SD to + 2SD (Overweight)	33	6.6	27	5.4
> +2SD to + 3 SD (Obesity)	19	3.8	14	2.8
<-2SD to -3SD (Underweight)	41	8.2	31	6.2

Figure III: Prevalence of obesity of the study children

In this study, it was observed that almost two third (63.6%) obese children belonged to age 11-13 years in group I. The mean age was found 13.09±1.55 years in group I and 13.42±1.61 years in group II. The differencewas statistically not significant (p>0.05) between two groups. It was also observed that more than half (57.6%) population was male in group I and 224(48.0%) male children were in group II. The difference was statistically not significant (p>0.05) between two groups. It was observed that the mean height of male was found 154.42±8.88 cm with ranged from 145-173 cm in group I and 154.58±11.98 cm with ranged from 122-179 cm in group II and the mean height of female was found 150.86±9.24 cm with ranged from 135-168 cm in group I and 151.84±7.95 cm with ranged from 123-175 cm in group II. The difference was statistically not significant (p>0.05) between two groups. In this study, it was observed that the mean BMI of male children was found 27.66±2.95 kg/m2 with ranged from 22.97-33.29 kg/m2 in group I and 17.78±3.02 kg/m2 with ranged from 12.52-26.96 kg/m2 in group II and the mean BMI of female children was found 28.6±2.35 kg/m2 with ranged from 25.79-33.33 kg/m2 in group I and 18.46±2.99 kg/m2 with ranged from 11.74-26.75 kg/m2 in group II. The difference was statistically significant (p<0.05) between two groups (Table II).

Table II: Distribution of the obese and non-obese children by demographic profile (N=500)

	Group-I (n=33)		Group-II(n=467)		p value
	n	%	n	%	
Age (Years)					
11-13	21	63.6	232	49.6	
14-16	12	36.4	235	50.3	
Mean±SD	13.09±1.55		13.42±1.61		
Range (min,max)	11-16		11-16		0.255*
Gender					
Male	19	57.6	224	48.0	
Female	14	42.4	243	52.0	0.286#
Height (cm)					
Male					
Mean±SD	154.42±8.88		154.58±11.98		
Range(Min-max)	145-173		122-179		0.939*
Female					
Mean±SD	150.86±9.24		151.84±7.95		
Range(Min-max)	135-168		123-175		0.498*
BMI (kg/M^2)					
Male					
Mean±SD	27.66±2.95		17.78±3.02		
Range(Min-max)	22.97-33.29		12.52-26.96		0.001**
Female					
Mean±SD	28.6±2.35		18.46±2.99		
Range(Min-max)	25.79-33.33		11.74-26.75		0.001**

*not significant and **significant p value reached from unpaired t-test, #not significant p value reached from Chi square test,Group-I= Obese and Group-II= Non-obese

In this study, it was observed that majority (90.9%) of population belonged to nuclear family in group I and 366(78.4%) in group II. The difference was statistically not significant (p>0.05) between two groups.

In this study, it was observed that 27(81.8%) population came from urban in group I and 327(70.0%) in group II. The difference was statistically not significant (p>0.05) between two groups. In this study, it was observed that almost half (45.5%) children had upper-middle-income in group I and 275(58.9%) in group II.

The difference was statistically significant (p<0.05) between two groups. In this study, it was observed that more than half (57.6%) of population watched television/computer/video games belonged to >2hrs in group I and 38(8.1%) in group II. The difference was statistically significant (p<0.05)

between two groups. In this study, it was observed that almost half (48.5%) of population had 1-2hrs daily studying hours in group I and 108(23.1%) in group II. The difference was statistically significant (p<0.05) between two groups.

In this study, it was observed that majority (93.9%) of population had <1hr daily playing hours in group I and 206(44.1%) in group II. The difference was statistically significant (p<0.05) between two groups. In this study, it was observed that majority (90.9%) population transport to go to school had by bus/private car/rickshaw in group I and 201(43.0%) in group II.

The difference was statistically significant (p<0.05) between two groups. In this study, it was observed that more than three fourth (78.8%) population had taken junk fooddaily in group I and 185(39.7%) in group II.

The difference was statistically significant (p<0.05) between two groups. In this study, it was observed that all (100.0%) population had taken 3times daily main meal in group I and 465(99.57%) in group II. The difference was statistically not significant (p>0.05) between two groups (Table III).

Table III : Distribution of the obese (group I) and non-obese (Group II) children by risk factors (N=500)

	Group-I (n=33)		Group-II (n=467)		p value
	n	%	n	%	
Type of family					
Nuclear	30	90.9	366	78.4	0.086#
Joint	3	9.1	101	21.6	
Residential status					
Slam	1	3.0	13	2.8	
Urban	27	81.8	327	70.0	0.316#
Semi urban	5	15.2	127	27.2	
Family income Taka)					
Low-income	1	3.0	22	4.7	
Lower-middle-income	7	21.2	158	33.8	
Upper-middle-income	15	45.5	275	58.9	0.001##
Higher income	10	30.3	12	2.6	
Daily watching of television/computer /video games					
<1hr	7	21.2	195	41.8	
1-2hrs	7	21.2	234	50.1	0.001##
>2hrs	19	57.6	38	8.1	
Daily studying hours					
<1hr	3	9.1	4	40.9	
1-2hrs	16	48.5	108	23.1	0.001##
>3hrs	14	42.4	355	76.0	
Daily playing hours					
<1hr	31	93.9	206	44.1	
1-2hrs	2	6.1	255	54.6	0.001##
>2hrs	0	0.0	6	1.3	
Transport to school					
Walking	3	9.1	266	57.0	0.001##
By bus/private car/rickshaw	30	90.9	201	43.0	
Daily taking of junk food					
Yes	26	78.8	185	39.7	0.001##
No	7	21.2	281	60.3	
Daily main meal intake					
3times	33	100.0	465	99.57	
4times	0	0.0	2	0.43	0.706#
5times	0	0.0	0	0.0	

#not significant and ##significant, p value reached from Chi square test

Discussion

Overweight and obesity developed from multiple interactions between genetic and environmental factors.[11]In the present study, 53.5% male and 46.5% female children were found in the age group of 11-13 years. The mean age of male was found 13.3±1.6 years and the mean age of female was found 13.4±1.6 years. This result was supported by Bhuiyan et al. where the mean age of study respondents was 13.2±0.1 years in male and 13.1±0.1 years in female.[20] It was also observed that 52.7% male and 59.5% female children were belonged to 150-169 cm height. The mean height of male was found 154.6±11.7 cm and the mean height of female was found 151.7±8.0 cm. Andegiorgish et al.found that the mean height of male was 152±16.0 cm and mean height of female was 149±13 cm. which was also consistent with our study.[21]

In this study, 35.8% male and 37.4% female children were belonged to weight range of 41-50 kg. The mean weight of male was found 44.9±12.8 kg and the mean weight of female was found 44.2±10.8 kg. Andegiorgish et al. also found the mean weight of male was 47.52±17.52 kg and the mean weight of female was 43.68±13.43 kg, which was comparable with our current study.[21] It was also found that 76.1% male and 81.7% female population's BMI were found between 15 and 24 kg/m^2.[22] In male, mean BMI was found 18.5±4.0 kg/m^2 and in female, mean BMI was found 19.0±3.7 kg/m^2. A study by Khader et al. observed that mean boy's BMI was 18.4±11.0 kg/m^2 and mean girl's BMI was 18.0±10.6 kg/m^2.[22] Janssen et al. also showed that mean boy's BMI was 20.5±4.1 kg/m^2 and mean girl's BMI was 20.1±3.9 kg/m^2.[23] Both of two studies agreed with our current study.

In this current study, 58.0% children came from upper-middle-income family. An Indian study done by Sharmar et al. found that maximum 54.7% of children were also belonged to almost similar socioeconomic status class.[24]

In our study, it was found that the prevalence of obesity was 6.6%. Recently, a study conducted in Dhaka city among 5000 children was found 7.6% obese.[25] The prevalence of obesity of Saudi children from 6 to 18 year old was also around 6%.[7]Both of the studies were consistent with our study. In this current study, the mean age was found 13.09±1.55 years in group I and 13.42±1.61 years in group II. Nearly similar findings of Mo-suwan showed in his study where the mean age was found 10.02±1.6 years in obese group and the mean age was found 9.05±1.7 years in non-obese group which also correlated with our study($p>0.05$).27 It was also observed that 57.6% population was male in group I and 48.0% in group II. The difference was statistically not significant ($p>0.05$) between two groups. This similar finding was also found in a study by Bhuiyan et al.where 56.0% child was male in obese group and 53% child in non-obese group.[20]

In our current study, it was observed that more than half (57.6%) children were male among obese children. The difference was statistically not significant ($p>0.05$) between two obese groups (obese male children vs. obese female children). A similar observation was also found in a study conducted by Janssen et al.that there was more than half (60.15%) children were male among obese children.[23] It was also observed that the mean height of male was found 154.42±8.88 cm with ranged from 145-173 cm in group I and 154.58±11.98 cm with ranged from 122-179 cm in group II and the mean height of female was found 150.86±9.24 cm with ranged from 135-168 cm in group I and 151.84±7.95 cm with ranged from 123-175 cm in group II. The difference was statistically not significant ($p>0.05$) between two groups. Khader et al. also showed that the mean height of male was 137.2±10.7cm and the mean height of female was 136.6±11.9 cm.[22]

In this present study, it was observed that the mean BMI of male was found 27.66±2.95 kg/m^2 with ranged from 22.97-33.29 kg/m2 in group I and 17.78±3.02 kg/m^2 with ranged from 12.52-26.96 kg/m^2 in group II and the mean BMI of female was found 28.6±2.35 kg/m^2 with ranged from 25.79-33.33 kg/m^2 in group I and 18.46±2.99 kg/m2 with ranged from 11.74-26.75 kg/m^2 in group II. The difference was statistically significant ($p<0.05$) between two groups. Almost similarly results were observed by Bhuiyan et al. and there was mean BMI for obese children was 28.8±3.6 kg/m^2 and for non-obese children was18.5±2.4 kg/m^2 ($p<0.01$).[20]

It was also found that the male children's mean BMI was found 27.66±2.95 kg/m^2 with ranged from 22.97-33.29 kg/m^2 and the female children's mean BMI was found 28.6±2.35 kg/m^2 with ranged from 25.79-33.33 kg/m^2 in group I. The difference was statistically not significant ($p>0.05$) between two obese group of male and female children. There was scarcity of data to compare the findings.

In this study 90.9% population belonged to nuclear family in group I and 78.4% in group II. Type of family was not significantly ($p>0.05$) associated with obesity.

But Khader et al. found that nuclear family was significantly associated with overweight. This result did not agree with our observation.[22]It was also observed that 81.8% population came from urban area in group I and 70.0% in group II. Residential status was not significantly ($p>0.05$) associated with obesity. Khader et al. showed that about 60.0% of children were living in urban areas and 40.0% in rural areas as well as 6.1% were urban and 5.1% rural in obesity observed.[22]Residential status (living place like urban and rural areas) was not associated with obesity ($p=0.210$).A study by Wang Y also showed that obesity was more prevalent in urban areas in China but in rural areas in Russia.[28] This findings were consistent with the findings of our study.

In this present study, it was observed that 45.5% population had upper-middle-income in group I and 58.9% in group II. Nearly one third (30.3%) population had come from higher income family in group I and only 2.6% in group II. Obesity was significantly ($p<0.05$) associated with socioeconomic status. The relation between the prevalence of obesity and socio-economic status has been reviewed previously in China and Brazil where Brazilian adolescents in a high-income group were two to three times more liable to be obese than their lower-income counterparts.[29] On the other hand, Wang Y who compared data for children aged 6-18 years in Russia, and China found that high-income groups in Russia and China were more obese.[28] Almost similar findings of the above studies supported to our current study. In this study showed that 57.6% children in group I and 8.1% in group II watched television/computer/video games >2hrs daily. It was significantly ($p<0.05$) associated with daily watching of television/computer/video games. A study conducted among children in Iran reported an association between watching television and being overweight.[30] Another study in the US reported that watching television or videos for more than 2 hours a day increased the risk of being overweight in children.[15]Khader et al.mentioned in their study that obesity and overweight were found to be associated with watching TV for more than 2 h/day.[22]

In this current study, it was observed that 48.5% population had 1-2hrs daily studying hours in group I and 23.1% in group II. Obesity was significantly ($p<0.05$) associated with daily studying hours 1- 2 hours. A study by Khader et al. where the authors found study time <2 hours had 5.3% and >2 hours had 6.1% in obesity.[22]This result did not agree with our observation.It was also found that 93.9% population had <1hr daily playing hours in group I and 44.1% in group II. Obesity was significantly ($p<0.05$) associated with daily playing hours less than 1 hour. Bhuiyan et al. study suggested that having overweight parent and engaging in sedentary activities including watching television and playing computer games for more than 4 hours a day were potential risk factors for childhood overweight or obesity, whereas regular physical activity at home for at least 30 minutes seemed to be a protective factor.20 In this regards, Andegiorgish et al. and Khader et al. also observed similar association between obesity with daily playing hours.[21-22]

In our present study, it was found that 90.9% children in group I and 43.0% in group II had gone to and from school by bus/private car/rickshaw. Obesity was significantly ($p<0.05$) associated with mode of transport. Andegiorgish et al.showed that those who use motorized transportation to and from school were more overweight and obese than those traveling on foot or by bike. They also showed that 22.9% study children had motorized transport in normal weight group and 34.5% was in overweight group ($p<0.001$).[21]Khader et al.found that transport to school 4.7% walking, 4.5% by bus and 7.1% private car in obesity.($P=0.030$).[22]The result regarding transport to school was correlated with this current study.It was also observed that 78.8% children had taken junk food daily in group I and 39.7% in group II. Obesity was significantly ($p<0.05$) associated with daily taking of junk food. This similar observation was also obtained by Andegiorgish et al. in their study where overweight children consumed significantly and often use food services outside of the home, either fast-foods, restaurants or school cafeterias rather than their counterparts($p<0.001$) with normal weight, had 6.3% in normal weight group and 8.1% in overweight group.[21]

The present study was conducted at a very short time period in a small geographical area of Bangladesh and parenteral overweight and obesity was not considered. These were considered as limitations of the study. In conclusion, the prevalence of obesity (BMI>+2SD) among secondary school children was 6.6%. Most of them belonged to age 11-13 years and male predominant.Most of the obese children came from upper middle socio-economic class, increased spending time in daily watching of television/computer/video games but having decreased daily outdoor playing hours. Besides these, most of them used motor vehicle as their transport to school and consumed more junk foods. The rate of obesity is alarming among school aged children in Sylhet Metropolitan area. Therefore, school health education is essential for every school to motivate the children and parents to increase awareness regarding childhood obesity and its adverse effects.

Conclusion

The prevalence of obesity (BMI>+2SD) among secondary school children was 6.6%. Most of them belonged to age 11-13 years and male predominant. Most of the obese children came from upper middle socio-economic class and had increased spending time in daily watching of television/computer/video games. Beside these, most of them used motor vehicle as their transport to school and consumed junk foods.

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ORIGINAL ARTICLE

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Effectiveness of Topical and Peribulbar Anaesthesia in Phacoemulsification Surgery for Cataract: A Comparative Study

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Abstract

Peribulbar blockade is widely used for phacoemulsification surgery. The potential complications of this technique include central spread, globe perforation and retrobulbar haemorrhage. The efficacy of topical anesthesia for phacoemulsification surgery has been reported. The main advantages include immediate visual recovery, the lack of serious needle complications and fear for injection. The mean pain score during of anaesthesia was significantly lower in the topical anaesthesia than that of peribulbar anaesthesia group [0 (SD 0.0) vs 4.1 (SD 0.6); p<0.01]; but the mean pain score during phacoemulsification procedure was almost similar in both topical and peribulbar anaesthesia groups [0.7 (SD 0.5) vs 0.6 (SD 0.5); p>0.05].

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Introduction

Superiority of topical anaesthesia over peribulbar anaesthesia has been demonstrated in many studies.8 But patients experience more pain with topical anaesthesia as compared to peribulbar anaesthesia reported in other studies.[1] Due to these conflicting results and no previous study in Sylhet MAG Osmani Medical College Hospital, this study is designed to compare topical anaesthesia and peribulbar anaesthesia in phacoemulsification.

For over a century anaesthesia for cataract surgery has been performed by injecting local anaesthetics into the retrobulbar or peribulbar space. This has been associated with a whole array of complications such as accidental perforation of the globe, retinal vessel occlusion, retrobulbar haemorrhage, optic nerve injury, contralateral visual loss, retinal detachment, cardiopulmonary and respiratory arrest and grand mal seizures.These complications have spurred the search for alternate ways of providing anaesthesia in cataract surgery. Topical anaesthesia was proposed by Fichman (1996), as an alternative to the conventional technique of injecting local anaesthetic agents into the peribulbar or retrobulbar space. It led to faster visual recovery and higher patient satisfaction. Further advantages of topical anaesthesia include its ease of application, minimal to no discomfort on administration, rapid onset of anaesthesia and most importantly, the elimination of the potential risks associated with retrobulbar injections.[2]

To see effectiveness of topical anaesthesia and peribulbar anaesthesia in phacoemulsification.

To achieve the above general objective, the specific objectives were to measure pain score during administration of anaesthesia and during phacoemulsification procedure by visual analogue scale. List the number of complications.

Materials and Methods

This comparative cross-sectional study is done in Department of Ophthalmology, Sylhet M.A.G. Osmani Medical College Hospital, from July 2010 to June 2012. A total 80 cataract patient undergoing phacoemulsification was selected. Inclusion criteria were patients with cataract prepared for phacoemulsification surgery aged over 40 years irrespective of sex. Subjects with other ocular or systemic conditions requiring the regular use of analgesics; patients with dementia, deafness, eye-movement disorder, excessive anxiety, inability to understand the language of the surgeon, known hypersensitivity to any anaesthetic medication used in this study and un-cooperative patient; patients with complex anterior segment pathological features that might make the surgical procedure difficult including the extensive corneal opacification/corneal thinning, small pupil not dilating with mydriatic drops, old glaucoma surgery, pseudoexfoliation syndrome and zonular dehiscence were excluded. The patients were randomly divided into two groups each consisting 40 patients. Every odds number of patients was included in topical

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anaesthesia group and every even number of patients was included in peribulbar anaesthesia group. Oxybuprocaine 0.4% (Novocaine 0.4% eye drop; Opso Saline Ltd, Bangladesh) was used as an anaesthetic agent in patients of topical anaesthesia group; and an equal mixture of Lignocaine 2% injection (Jesocaine Injection 2%, Jayson Pharmaceuticals Ltd., Dhaka, Bangladesh) and 4% Bupivacaine (Ultracaine 4%, Jayson Pharmaceuticals Ltd, Dhaka, Bangladesh) and Hyaluronidase was used as an anaesthetic agent in patients of peribulbar anaesthesia group.

Immediately after the operation, pain experienced during anaesthetic administration and phacoemulsification procedure was assessed. A 0-10 cm visual analogue scale (VAS) was used to assess pain for patients of both groups. The patient was asked to put a cross on the 0-10 cm visual analogue scale.

Results

Eighty patients were equally randomized into the topical anaesthesis group [18 male and 22 female; mean age, 60.7 (SD 9.8) years'] and in peribulbar anaesthesia group [16 male and 24 female; mean age, 58.7 (SD 7.8) years.] Both groups were similar in age and sex (p>0.05 each).

In this study the age of patients ranged from 45 to 85 years with the mean age of 59.1 (SD 8.5) years whereas the mean age of the patients in peribulbar anaesthesia group was 58.7 (SD 7.8) years.

Table I. Distribution of the patients by age.

Age	Study group			p
	Group-A (n=40) Frequency (%)	Group-B (n=40) Frequency (%)	Total (n=80) Frequency (%)	
40-49 years	3 (7.5)	4 (10.0)	7 (8.8)	
50-59 years	17 (42.5)	19 (47.5)	36 (45.0)	
60-69 years	14 (35.0)	12 (30.0)	26 (32.5)	*p>0.05
70-79 years	4 (10.0)	3 (7.5)	7 (8.8)	
80-79 years	2 (5.0)	2 (5.0)	4 (5.0)	
Mean (SD)	60.7 (SD 9.8)	58.7 (SD 7.8)	59.1 (SD 8.5)	p>0.05

Significant *X^2=0.551; df=4 ^{t}Z=0.964

Distribution of the patients according to sex

Table-II showed the distribution of patients according to sex. Out of 80 patients 34 (42.5%) patients were male and 46 (57.5%) patients were female with male to female ratio of 1:1.35. There were 18 (45.0%) male and 22 (55.0%) female patients in the group-A; whereas 16 (40.0%) male and 24 (60.0%) female patients in group-B. The sex difference between the patients of group-A and group-B did not show any statistically significant difference (p>0.05).

Table II. Distribution of the patients according to sex

In the present study 34 (42.5%) patients were male and 46 (57.5%) patients were female with male to female ratio of 1:1.35.

Age	Study group			p
	Group-A (n=40) Frequency (%)	Group-B (n=40) Frequency (%)	Total (n=80) Frequency (%)	
Male	18 (45.0)	16 (40.0)	34 (42.5)	
Female	22 (55.)	24 (60. 0)	46 (57.5)	*p>0.05
Total	40 (100.0)	40 (100.0)	80 (100)	

Distribution of patients by operation time:

Table showed that the mean operation time in group-A and group-B did not differ between the groups [15.0 (SD 5.6) vs 14.9 (SD 3.5); Z=0.095; p>0.05].

Table-III. Distribution of patients by operation time.

Operation time in minute	Study group		p
	Group-A (n=40)	Group-B (n=40)	
Range	9-30	9-22	
Mean	15.0	14.9	*p>0.05
SD	±5.6	±3.5	

Significant *Z=0.095

Operation time: The time interval between administrations of anaesthesia to stromal hydration.

Distribution of patients by pain score during administration of anaesthesia.

Table showed that the mean pain score during administration of anaesthesia was significantly lower in the group-A that that of group-B [0 (SD 0.0) vs 4.1 (SD 0.6); Z= 42.905; p<0.01]. Table VI also showed that during administration of anaesthesia. During administration of anaesthesia, all patients [40 (100.0%)] experienced no pain in group-A; but 38 (95.0%) patients experienced moderate pain and 2 (5.0%) patients experienced mild pain in group-B. The pain grading during administration of anaesthesia was significantly lower in the group-A than group-B (X2=80.000; df=2; p<0.01).

Table-IV. Distribution of patients by pain score during administration of anaesthesia

Pain score	Study group		p
	Group-A (n=40) Frequency (%)	Group-B (n=40) Frequency (%)	
No pain (0)	40 (100.0)	0 (0.0)	
Mild pain (1-3)	0 (0.0)	2 (5.0)	p>0.01
Moderate (4-7)	0 (0.0)	38 (95.0)	
Mean (SD)	0 (SD 0.0)	4.1 (SD 0.6)	p<0.01

Significant *X2=80.000; df=2 Z=42.905

Pain score was measured by using 0-10 cm visual analogue scale

Distribution of patients by pain score during surgery:

Table showed that the mean pain score during phacoemulsification was almost similar in both group-A and group-B [0.7 (SD 0.5) vs 0.6 (SD 0.5); Z=0.931; p>0.05]. Table VII also showed that during surgery, pain score was mild in 12 (30.0%) and moderate in 28 (70.0%) patients of group-A; whereas pain score was mild in 16 (40.0%) and moderate in 24 (60.0%) patients of group-B. The pain score during surgery was statistically similar in both group (X2=0.789; df= 1; p>0.05).

Table-V. Distribution of patients by pain score during surgery

Pain score	Study group		p
	Group-A (n=40) Frequency (%)	Group-B (n=40) Frequency (%)	
No pain (0)	12 (30.0)	16 (40.0)	p>0.05
Mild pain (1-3)	28 (70.0)	24 (60.0)	
Mean (SD)	0.7 (SD 0.5)	0.6 (SD 0.5)	p<0.00

Significant Z=0.931

Pain score was measured by using 0-10 cm visual analogue scale

Distribution of patients by surgeon's intraoperative difficulty:

In group-A surgeon's intraoperative difficulty during surgery was no difficulty (grade-0) was 19 (47.5%), slightly difficult (grade 1) was 16 (40.0%) and moderately difficult (grade 1); while in group-B surgeon's intraoperative difficulty during surgery was no difficulty (grade 0) was 23 (57.5%) and slightly difficult (grade 1) was 17 (42.5%). The surgeon's intraoperative difficulty during surgery did not differed statistically significant (p>0.05). Distribution of patients by surgeons' intraoperative difficulty was shown in table-VIII.

Table-VI. Distribution of patients by surgeon's intraoperative difficulty.

Surgeon's difficulty	Study group		p value
	Group-A (n=40) Frequency (%)	Group-B (n=40) Frequency (%)	
No difficulty	19 (47.5)	23 (57.5)	*p>0.05
Slightly difficult	16 (40.0)	17 (42.5)	
Moderately difficult	5 (12.5)	0 (0.0)	
Difficult	0 (0.0)	0 (0.0)	
Extremely difficult	0 (0.0)	0 (0.0)	
Total	40 (100.0)	40 (100.0)	80 (100)

Significant *X2=5.411; df=2

Distribution of patients by immediate complications:

Table showed the distribution of patients by immediate complications Post operative complications such as chemosis [8 (20.0%) vs 27 (52.5%); X2=18.337; df= 1; p<0.05] and subconjunctival haemorrhage [11 (27.5%) vs 21 (52.5%); X2= 4.838; df=1; p<0.05] were significantly lower in group-A than that of Group-B but no difference in haematoma [0 (0.0%) vs 2 (5.0%); X2=2.051; df=1; p>0.05].

Table VII. Distribution of patients by immediate complications

Immediate complications	Study group		p
	Group-A (n=40) Frequency (%)	Group-B (n=40) Frequency (%)	
Chemosis	8 (20.0)	27 (67.5)	p>0.05
Subconjunctival haemorrhage	11 (27.5)	21 (52.5)	
Periorbital haemtoma	0 (0.0)	2 (5.0)	

Discussion

In this study the age of patients ranged from 45 to 85 years with the mean age of 59.1 (SD 8.5) years. Unal et al.3 (2006) supported these results that mean age of the patients was 64.92 (SD 10.23) years (range 43-91) years; whereas the mean age of the patients in peribulbar anaesthesia group was 58.7 (SD 7.8) years. The mean age of the patients in both groups was almost identical (p>0.05). In this regards Coelho4 (2005) found the mean age was 62.95 years in the topical anesthesia group (range 47 to 79 years) and 68.04 years (range 29 to 84 years) in the peribulbar anesthesia group.

In the present study 34 (42.5%) patients were male and 46 (57.5%) patients were female with male to female ratio of 1:1.35. This result was similar to the study of Unal3 (2006) that 44.3% of cataract patients were male and 55.7% patients were female. Naeem et al. (2007) also reported there was female preponderance of cataract patient.

In this study the mean operation time in topical anesthesia group and peribulbar anesthesia group did not differ between the groups [15.0 (SD 5.6) vs 14.9 (SD 3.5); p>0.05]. Coelho et al.4, (2005) supported this result that the mean surgical time was 23.1 minutes (SD 3.2) in the topical anaesthesia group and 20.0 (SD 3.0) minutes in the peribulbar anaesthesia group.5 Naeem et al., (2007) also found no significant difference in duration of surgery between topical anaesthesia group and peribulbar anaesthesia group.

The current study showed that the mean pain score during administration of anaesthesia was significantly lower in the topical anesthesia then that of peribulbar anaesthesia group [0 (SD 0.0) vs 4.1 (SD 0.6); p<0.01]. The current study also showed during administration of anaesthesia, all patients [40 (100.0%)] experienced no pain in topical anesthesia; but 38 (95.0%) patients experienced moderate pain and 2 (5.0%) patients experienced mild pain in peribulbar anaesthesia group. The pain grading during administration of anaesthesia was significantly lower in the topical anesthesia that paribulbar anaesthesia group (p<0.01). Coelho et al.4, (2005) found patients in the peribulbar anesthesia group reported significantly greater pain than patients in the topical anesthesia group (p=0.0056) which supported the present study. Johnson et al.6, (1998) also reported that administration of topical anaesthesia was significantly less painful than peribulbar anaesthesia (p=0.03).

This study showed that the mean pain score during phacoemulsification was almost similar in both topical and peribulbar anaesthesia groups [0.7 (SD 0.5) vs 0.6 (SD 0.5); Z=0.931; p>0.05]. Naeem et al.5, (2007) found similar analgesia during surgical procedure [0.56 (SD 0.64) vs 0.78 (SD 0.85); p<0.05]. This study also showed that during surgery, pain score was mild in 12 (30.0%) and moderate in 28 (70.0%) patients of topical anaesthesia groups; whereas pain score was mild in 16 (40.0%) and moderate in 24 (60.0%) patients of peribulbar anaesthesia group. The pain score during surgery was statistically similar in both group (p>0.05). Naeem et al.5, (2007) found similar result in their study that there was no statistically significant difference in pain during surgical procedure between topical and peribulbar anaesthesia groups (p=0.323). Similarly, Saunder and Jonas2, (2003) found the mean pain scores were 1.40 (SD 1.17) in the topical anaesthesia group and 1.36 (SD 1.26) in the peribulbar anaesthesia group. The difference in the mean pain scores between the two study groups was not statistically significant (p=0.54).

Similar equality between two techniques has been observed by many other investigators (Johnston et al.6, 1998; Jacobi et al.7 2000). Our results are contrary to the findings of Lindely, who found that patients experience more pain with topical anaesthesia as compared to peribulbar anaesthesia (Lindley-Jones et al.1, 2000).

In this study surgeon's intraoperative difficulty during surgery was no difficulty (grade-0) was 19 (47.5%), slightly difficult (grade 1) was 16 (40.0%) and moderately difficult (grade-2) in topical anaesthesia group; while in peribulbar anaesthesia group surgeon's intraoperative difficulty during surgery was no difficulty (grade-0) was 23 (57.5%) and slightly difficult (grade 1) was 17 (42.5%). The surgeon's intraoperative difficulty during surgery did not differed statistically significant (p>0.05). Naeem et al.5 2007) reported the ocular movements were quite marked in topical group and the difference was statistically significant, but mobility, is not a problem for experienced surgeons especially if the patients are also cooperative.

In the current study immediate post operative complications such as chemosis [8 (20.0%) vs 27 (52.5%); p<0.05] and subconjunctival haemorrhage [11 (27.5%) vs 21 (52.5%); p<0.05 were significantly lower in topical anesthesia than that of peribulbar anaesthesia group but no different in haematoma [0 (0.0%) vs 2 (5.0%); p>0.05]. Saunder and Jonas2, (2003) reported anaesthesia-related complications such as chemosis, periorbital haematoma and subconjunctival haemorrhage occurred only in the peribulbar anaesthesia group and not in the topical anaesthsia group. Roman and Auckin8, (1996) have demonstrated that overall, 62.2% patients preferred topical over peribulbar anaesthesia, citing lack of periocular injection as a reason (Jacobi et al.7, 2000). Similar superiority of topical anaesthesia over peribulbar anaesthesia has been demonstrated in many other studies (Maclean et al., 1997).

The results of the present investigation suggest that topical anaesthesia is more safe and effective than that of peribulbar anaesthesia for phacoemulsification surgery for cataract.

Conclusion

In this study that the mean pain score during administration of anaesthesia was significantly lower in the topical anesthesia than that of peribulbar anaesthesia group [0 (SD 0.0) vs 4.1 (SD 0.6); p<0.01]; but the mean pain score during phacoemulsification was almost similar in both topical and peribulbar anaesthesia groups [0.7 (SD 0.5) vs 0.6 (SD 0.5); p>0.05].

Peribulbar anaesthesia was significantly associated with chemosis [8 (20.0%) vs 27 (52.5%); p<0.05] and subconjunctival haemorrhage [11(27.5%) vs 21 (52.5%); p<0.05].

In conclusion, the present study suggests that topical anaesthesia is safe and effective as peribulbar anaesthesia for phacoemulsification.

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ORIGINAL ARTICLE

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Clinicopathological Study of Metastatic Neck Node in Upper Aero Digestive Squamous Cell Carcinoma

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Abstract

In the head and neck region, squamous cell carcinoma (SCC) is one of the most common neoplasm, which often originated from upper aerodigestive tract.The purpose of this study was designed to assess the Clinicopathologicalstatusof metastatic neck node in upper aerodigestive squamous cell carcinoma patients. However, for therapeutic and elective dissection of the neck, accurate histological assessment of the levels of involvement of cervical metastatic spread from different sites within theupper aerodigestive tract is paramount importance. This descriptive study was conducted at the department of Otolaryngology and Head-Neck surgery, SOMCHfrom 07/05/2017 to 06/11/2017. Total 100 patients were included and they were subjected to details history taking, physical examination and necessary investigations. The researcher conducted all of the interview and collected data were recorded into a case record form for each patients. Data analysis was done by SPSS 2. Of total, 100 study population,highest portion of SCC were originated from oral cavity (40%), larynx (22%), Oropharynx (18%), Hypopharynx (8%), Nasopharynx (6%), Nose & PNS (4%) and Cervical part of oesophagus (2%). SCC of oral cavity most commonly involved level II lymph nodes (40%) whereas Nasopharyngeal SCC revealed involvement of level II and III (50% each), Oropharynx most commonly level II (50%), Larynx level III (41.7%), Hypopharynx level II (66.7%).Moreover, this level of Lymph node involvement showed a significant difference in relation to area of involvement of SCC (p value 0.027). Distribution of metastatic neck node has clinical relevance inpatients with upper aerodigestive SCC.

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Introduction

Cancer of the head and neck arise in several places is curable if diagnose early. Unfortunately, patients often present with advanced disease that is incurable or requires aggressive treatment which leaves them functionally disable.

Majority of upper aerodigestive tract malignancies are squamous cell carcinoma, which is about more then 90%[1].The major risk factors for upper aerodigestive malignancy are tobacco smoking, alcohol consumption, chewing betel nuts, taking snuff, poor diet, EB virus, HPV. Squamous cell carcinoma of head and neck is one of the most common cancers worldwide with incidence 30 per 100000 population. It constitutes 4% of all cancers[1,2]

Most of upper aerodigestive cancers present with symptoms from primary site for example hoarseness of voice, difficulty in swallowing or pain in the ear. Enlargement of cervical lymph node as the first presenting feature is not uncommon, particularly with certain silent sites like tongue base, supraglottis and nasopharynx. In Bangladesh the cancers of larynx and hypopharynx comprises around 21% of all cancers[3].Cancers of oropharynx is the third most common head and neck cancer after oral cavity and larynx[4].

Patients suspected of having squamous cell carcinoma with metastatic neck nodes are most frequently assessed by clinical examination and investigations like fine needle aspiration cytology, ultrasound, and CT scan/MRI .[1,5,6]

After proper evaluation, we can stage the disease and planned for further management. This study was planned to see the presentation and frequency of metastatic neck disease of upper aerodigestive squamous cell carcinoma.

Materials and Methods

This hospital based descriptive study conductedin the department of Otolaryngology & Head-Neck Surgery, Sylhet MAG Osmani Medical College Hospital, Sylhet. Study period wassix months (07/05/2017 to 06/11/2017) . Includes all patients irrespective of their age and sex having unilateral or bilateral metastatic neck node with primary pathology in upper aerodigestive region.Patients with metastatic neck node with unknown primary, recurrence cases of head-neck carcinoma and after chemo-radiation were excluded.Non-randomized purposive sampling method was applied in this study.

Results

The status of the cervical lymph nodes in squamous cell carcinoma (SCC) of the upper aerodigestive tract (UADT) is the most important factor in the prognosis of squamous cell carcinoma. So, it is very important to see the pattern of involvement of different levels of cervical lymph nodes in squamous cell carcinoma of the upper aerodigestive tract. It is also important to consider the mode of surgery in a patient.With involvement of regional lymph nodes cure rates nearly halves.

Total 100 patients of upper aero-digestive squamous cell carcinoma were included in this study. Mean age of the patients was 55.46±14.95 years. Maximum age was 85 years and minimum age was 27 years. Among all patients majority were from age group 51 to 60 years (34%).

Majority of the patients were male (72%) and 28% were female in this study. Majority of the patients passed secondery school examination (30%), 24% completed higher secondary, 18% patients could attend primary only and 6% was able to achieve graduation. Among 100 patients 22% were illiterate. 46% patients were poor in this study. It was followed by 38% patients coming from middle class family and 16% coming from higher middle class and upper class family. 78% patients smoked and 22% never smoked. 85% consumed Pan Supari & Chewable Tobacco & 15% neverconsumed.

Majority of the patients of squamous cell carcinoma involving aero-digestive tract involved oral cavity (40%). The second highest involved was larynx (22%). Oropharynx was the third among other areas (18%).

Lymph node involvement was found in 48% of patients of upper aero-digestive tact squamous cell carcinoma. Squamous cell carcinoma(SCC) of oral portion of tongue and floor of mouth was associated with lymph node involvement in 60% and 66.7% of cases respectively. Involvement of lip was associated with lower percentage of lymph node involvement (33.3%). 62.5% of supraglottic SCC had regional lymph node involvement, 66.7% of SCC involving base of tongue had lymph node involvement. None of the distribution showed significant differences. (Table 1)

Table 1. Relationship of site of SCC with lymph node involvement (n=100)

Area	Site	Lymph node involvement		*p* value*
		Yes n (%)	No n (%)	
Oral cavity	Oral Tongue	12 (60%)	8 (40%)	
	Floor of mouth	4 (66.7%)	2 (33.3%)	
	Mandible	1 (25.0%)	3 (75.0%)	0.133
	Hard Palate	0	4 (100%)	
	Lip	2 (33.3%)	4 (66.7%)	
Oropharynx	Tonsil	4 (50%)	4 (50%)	
	Base of Tongue	4 (66.7%)	2 (33.3%)	0.212
	Posterior Wall	0	2 (100.0%)	
	Soft palate and uvula	0	2 (100.0%)	
Larynx	Supraglottis	10 (62.5%)	6 (37.5%)	0.221
	Glottis-transglottic	2 (33.3%)	4 (66.7%)	
Hypopharynx	Pyrioform fossa	2 (50%)	2 (50%)	0.264
	Postcricoid	0	2 (100%)	
	Posterior wall	0	2 (100%)	
Nose, paranasual sinuses and Nasopharynx	Nose and paranasal sinuses	2 (50%)	2 (50%)	0.598
	Nasopharynx	4 (66.7%)	2 (33.3%)	
Oesophagus	Cervical part	0	2 (100%)	NA

*x^2 test was used; % indicates percentage within sites of involvement.

Number of Lymph node involvement showed a significant difference in relation to area of involvement of SCC (p value 0.027). SCC of oral cavity most commonly involved level II lymph nodes (40%). Nasopharyngeal SCC revealed involvement of level II and III (50% each). Laryngeal SCC most frequently involved level III (41.7%) and oropharyngeal SCC involved level II (50%) more than other levels.

About 70.8% of patients (n=34) metastatic lymph node involvement was unilateral and 29.2% (n=13) it was bilateral.

Discussion

The single most important factor affecting prognosis for patients with squamous cell carcinoma of the upper aerodigestive tract is the stage of the disease at the time of initial diagnosis and treatment. Once dissemination to regional lymph nodes takes place, the probability of five year survival, regardless of the treatment rendered, reduces to nearly one-half of that seen in early staged patient. Thus,management of metastasis to the cervical lymph nodes is of paramount importance in treatment of patients with tumours of head and neck.

Majority portion of SCC patients were male (72%). The study done by Alves et al.7also found a male prevalence. They found 76% male in their study group. This higher frequency of male SCC patients could be linked to higher smoking tendency of male patient in the country8. In effect, this study found 78% patients were active smokers.

Majority of patients came from poor family background (46%). Distribution of several risk factors can explain the reason for this higher proportion in families from low socio-economic condition. Poor dental hygiene, smoking and taking tobacco with betel nuts are important factors for SCC.[9] Smoking 'biri' is easier for poor people because of low cost.10 On the other hand, people from lower economic abilities are more likely to have poor oral hygiene.[11]

Among patients of upper aero-digestive tract squamous cell carcinoma the present study found 40% cancer in the oral cavity, 22% in the larynx and 18% in the oropharynx. Shahet al.[12]reported a similar distribution in their study. They found 46% SCC in oral cavity, 19% in oropharynx and 22% in larynx. Distribution of other areas also showed similar distribution. Where`s,Cole et al [13]has slightly different distribution. In their study laryngeal SCC was higher than oral SCC. This could be due to the differences in the specimen supplied and type of surgery undergone.

Oral mobile part of the tongue was found to be mostly involved (20%), followed in second by supraglottic area of larynx (16%). All other areas show a nearly similar proportion of involvement. This corresponds with findings of other studies.7,9 Lindberget al.[14]reviewed 2044 patients with untreated SCC of the head and neck in order to define the incidence and topographic distribution of lymph node metastasis. He also reported a similar distribution of lymph node involvement in his patients. 48% patients in this study had involvement of lymph nodes.

Oral portion of tongue and floor of mouth was associated with lymph node involvement in respectively 60% and 66.7% of cases. Lymph node was also found in 62.5% of supraglottic SCC and 66.7% of base of the tongue SCC among others. None of the distribution showed significant differences. Alves7reported lymph node involvement in 71.9% of lateral/ventral tongue SCC and in 60% cases of dorsum of tongue involvement. This is similar to findings of present study. They also reported 73% cases of floor of the mouth carcinoma had lymph node involvement. Dr. Robert Lindberg reported a percentage distribution of nodal metastasis on the basis of staging. Similar to the present study he showed an average 35% involvement of lymph nodes in supraglottic laryngeal carcinoma.[14]

Level of lymph nodes involved shows a similar pattern with the report of Cole et al.[13]Level II and level III nodes were mostly involved in oral cavity cancers (40% and 30% respectively in this study). Cole also showed a higher level II and III involvement in oral cavity cancer. They recommended that in patients with a primary SCC in the oral cavity, levels I-III should be dissected. Dissection of level IV is controversial, but there is little extra morbidity in including level IV which would remove any potential 'skip' metastases. Level V does not need to be dissected unless involved clinically or at surgery.

Regarding cancer of the oropharynx mostly involved nodes were level II, III and IV (50%, 25% and 25% respectively).The present study found level II and level V involvements in cases of hypopharyngeal SCC (66.70% and 33.30% respectively).

Weber et al. found that in their patients levels I and V were involved in some supraglottic cancer.15 Findings of this study shows involvement of level II to V in laryngeal region SCCs (including supraglottic and transglottic areas). All patients who had level V involvement had positive nodes at other levels; therefore dissection of this level is recommended if nodes are present or found at surgery.

Conclusion

The distribution of metastases to the neck nodes has clinical relevance in patients with upper aerodigestivetract squamous cell carcinoma (SCC). In this study, squamous cell carcinoma involving aerodigestive tract predominantly originated from oral cavity, larynx and oropharynx. Neck node metastasis was found in forty-eight percentage cases with variable level of involvement. However, this findings should be used with caution and further larger study is needed to conclude this findings.

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ORIGINAL ARTICLE

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Experience of ^{13}C Urea Breath Test in Dyspeptic Patient in Sylhet Region

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Abstract

To see the prevalence of H. Pylori infection among dyspeptic patient. Out of 30 dyspeptic patients, 22(73.3%) male & 8(26.7%) female, mostly of 15-30(46.7%) years of age group. 13C urea breath test was positive in 9(30%) patients but negative in 21(70%) patients. Prevalence of H. pylori, as established cause of dyspepsia, is decreasing. Urea breath test, Helico bacter Pylori infection, Dyspepsia.

Introduction

Helicobacter pylori(H pylori) is a spiral gram negative urease producing bacterium , is associated with chronic gastritis, peptic ulcers, gastric adenocarcinoma and gastric mucosa associated lymphoid tissue lymphoma(MALT). It is a group 1carcinogen. It is associated with 70-90% causes of duodenal ulcer and 30-60% of gastric ulcer. Its eradication reduced ulcer recurrence to less than 10 % as compared to 70 % with acid suppression alone[1].

The urea breath test (UBT) is one of gold standard [2]non-invasive methods for detection of H. pylori infection. The test exploits the hydrolysis of orally administered urea by the enzyme urease, which H pylori produces in large quantities. Urea is hydrolysed to ammonia and carbon dioxide, which diffuses into the blood and is excreted by the lungs.Isotopically labelled CO2 can be detected in breath using various methods. Labelling urea with 13C is becoming increasingly popular because this non-radioactive isotope is innocuous and can be safely used in children and women of childbearing age. Breath samples can also be sent by post or courier to remote analysis centres. The test is easy to perform and can be repeated as often as required in the same patient[3].

The 13C-UBT can be used in many clinical settings because of its non-invasiveness, simplicity, and safety. Further more, the sensitivity and speci?city in untreated subjects are very high and range from 90 to 98% and from 92 to 100%, respectively.[4,5,6,7,8,9,10] With this background this study was designed to see the prevalence of H. pylori infection among patients presenting with dyspepsia without alarm features.

Materials and Methods

This study was done in the department of Gastroenterology , Sylhet MAG Osmani Medical College Hospital. Consecutive patient attending gastroenterology OPD with dyspepsia were enrolled. History was taken and clinical examinations were done to exclude alarm signs. Informed consent was taken from the patients.

Dyspeptic patients who are not getting antibiotic for 4 weeks and proton pump inhibitor and antihistamine for 1 week , were enrolled in this study. Study subject were fasted for more than 4 hours. Two breath samples were collected. One before the test kit ingestion in green capped collection tube and another one thirty minutes after test kit ingestion in yellow capped collection tube according to manufacturer instractions(Heli Kit-13C-Urea Breath test, Isodiagnostika, a division of Paladin Labs Inc, Canada). Breath samples were sent by courier to remote analysis centre, KNS Canada(BD), Dhaka and were analysesd by mass spectrometer.Evaluation criteria-Delta Over Baseline(DOB) within 30 minutes> 4.0 % considered as test positive.

Results

Total 30 patients, male 22(73.3%) and female 8(26.7%), age varying from 15-60 years (mean 33 years, SD 23) were included. Of them 9(30%) patients had UBT positive, with male dominance (5, 55.6%) and prevalence was higher (5, 55.6%) among 30-45 years age group.

Table-I: Shows the age distribution of patients(N-30)

Age	No. of patients	Percentage
15-30	14	46.7
30-45	11	36.7
>45	5	16.7
Total	30	100.1

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Table-II: Shows the sex distribution of patients(N-30)

Sex	No. of patients	Percentage
Male	22	73.3
Female	8	26.7
Total	30	100

Table-III: Shows the test positivity of patients(N-30)

UBT	No. of patients	Percentage
Positive	9	30
Negative	21	70
Total	30	100

Table-IV: Shows the test positivity among sex distribution (N-30)

UBT positive	No. of patients	Percentage
Male	5	55.6
Female	4	44.4
Total	9	100

Table -V: Shows the positivity among age distribution (N-30

UBT positive	No. of patients	Percentage
15-30	2	22.2
30-45	5	55.6
>45	2	22.2
Total	9	100

Discussion

Previous reports from our country shows higher prevalence of H. pylori infection(44.23%). But our study shows lower prevalence(30%) which is consistent with recent trend of declining of H. pylori infection worldwide including our country11. Improvement of hygiene may explain this scenario. In our study prevalence was found higher in 30-45 years age group, it is consistent with reports11by Munish Rastogi et al.

In our study, H. pylori infection is higher among male which is contrary with reports byIdo Eisdorfer12et al.

Sample size is small. Endoscopy and other relevant investigations were not done.

Conclusion

Prevalence of H. pylori, as established cause of dyspepsia, is decreasing.

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ORIGINAL ARTICLE

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Efficacy of Itraconazole in the Treatment of Pityriasis Versicolor

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Abstract

Despite the use of numerous newer therapeutic regimens, pityriasis versicolor has remained an enigma only because of recurrence and resistance of the yeast. Itraconazole is orally active azole of the triazole series has broad spectrum antifungal activity and effective in pityriasis versicolor.To find out the effectiveness of itraconazole in pityriasis versicolor. This open level clinical trial was conducted in the Department of Dermatology and Venereology, Sylhet MAG Osmani Medical college Hospital, Sylhet between January 2011 and December 2011. Fifty patients with pityriasis versicolor were included and were treated with itraconazole 200 mg/day orally once daily for 7 days; among them 47 completed the treatment. Mean age of the respondents was 28.15 ± 8.28 years (range, 18-50 years) and 42.6% were within 21 to 30 years age group. Males (66%) were predominant. The clinical success (cure plus improvement) was in 80.9% of patients at day 14 and was in 91.5% patients at 1 month. Mycological response at 14 day was eradication in 59.6% and persistent in 53.2% patients whereas at 1 month was eradication in 76.6% and persistent in 23.4% patients. Adverse effects were found in 12.8% patients. Itraconazole 200 mg daily for 7 days and fluconazole 400 mg single dose was equally effective and safe in the treatment of pityriasis versicolor.

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Introduction

Pityriasis versicolor, is a mild, chronic infection of the skin caused by Malassezia yeasts, and characterized by discrete or confluent, scaly, discoloured or depigmented areas, mainly on the upper trunk.[1] It is a common superficial fungal infection of the stratum corneum classically affecting young people around the pubertal time.[2,3]

Most patients require treatment as spontaneous remission is uncommon. Different treatment modalities, both topical and systemic are mentioned in the literature. Various topical agents have been used with limited success because of objectionable odour, messy and frequent application and for prolonged periods. Moreover, treatment with these topical agents is associated with high recurrence rates.[4]

Systemic agents used for treating pityriasis versicolor include itraconazole, ketoconazole, and fluconazole.[4,5] Although various imidozole derivatives such as ketoconazole and fluconazole have been used orally in the treatment of pityriasis versicolor in varying doses and regimes, systemic therapy has generally been reserved for the management of recalcitrant cases those with extensive involvement or those who did not responded to other topical monotherapies.[11]

Itraconazole is a triazole antimycotic agent with strong keratophilic and lipophilic properties. Similar to other azole antifungal agents, the mode of action of itraconazole involves inhibition of 14-?-demethylase, resulting in impaired sterol synthesis in fungal cell membranes. In vitro, itraconazole is active not only against yeasts such as Malassezia and Candida species but also against dermatophytes and nondermatophyte molds.[6]

When itraconazole is used to treat pityriasis versicolor, a suggested regimen is 200mg/d for 7 days, with a minimum cumulative dose of at least 1000mg being required for effective therapy.[7,8] This total dose-response differential is likely related to low levels of itraconazole in eccrine sweat.[9] Four weeks after the start of therapy with a regimen totaling at least 1000 mg, the clinical response was 87%.[8] In another study 89% of patients demonstrated negative microscopic evaluation at follow-up 4 weeks after therapy, compared to 6% in the placebo group.[10]

All this above mentioned studies were done in abroad. There was no published data regarding the role of itraconazole in the treatment of Pityriasis versicolor in our country. So, this study was designed to compare the effectiveness of itraconazole in the treatment of Pityriasis versicolor.

Materials and methods

This was a prospective open clinical trial. A total 50 patients with pityriasis versicolor aged between 18 to 60 years and both sexes confirmed by wood lamp and mycological examination on KOH attending the Department of Dermatology and Venereology, Sylhet MAG Osmani Medical college Hospital, Sylhet during the period between January 2011 and December 2011 were included. Pregnant and lactating women; known hypersensitivity to itraconazole; hepatic or renal diseases were excluded. Purposive sampling was done.

Informed written consent was obtained from the patients after full explanation of the details of the disease process, options of treatment, ultimate outcome, possible side effects and complications and chances of recurrences and above all the purpose of the study.

Each and every patient was evaluated thoroughly by history and clinical examination; a clinically diagnosed case of pityriasis versicolor were selected and confirmed by wood lights and mycological examination of skin scraping with 10.0% KOH.

The data collection sheet was filled. The information included the age, sex, occupation and socioeconomic status. Other information including pregnancy, lactation and; any topical and systemic drug intake for the treatment of this disease for last one month; any immunosuppression caused by disease or treatment, any known hypersensitivity to itraconazole were also taken.

Investigations such as liver function test, serum creatinine, wood lights and mycological examination of skin scraping with 10.0% KOH were done in all cases. All patients were treated with itraconazole 200 mg/day orally once daily for 7 days

Baseline characteristics	Frequency	Percentage
Age		
18-20 years	15	31.9
21-30 years	20	42.6
31-40 years	10	21.3
41-50 years	2	4.3
Sex		
Male	31	66.0
Female	16	44.0
Type of disease		
Hypopigmented	39	83.0
Hyperpigmented	8	17.0

Clinical signs and symptoms such as pruritus, hypo or hyperpigmentation, and desquamation were classified (0=none, 1=mild, 2=moderate, 3=severe) and assessed at the initial clinical examination (baseline) and at day 14 and day 30. Prior to commencement of therapy and during day 14 and 30 skin scraping specimens were examined microscopically for fungal mycelium after 10% KOH wet mounts and by Wood's lamp.

Clinical efficacy was categorized as cure (disappearance of all baseline signs and symptoms of infection); improvement (improvement in or partial disappearance); failure (no change or worsening); or relapse (improvement or cure followed by reappearance or worsening). Cure plus improvement was considered clinical success.

Mycological efficacy were categorized as eradication (complete disappearance of Malassezia furfur); persistence (positive microscopy at follow-up); or eradication with reinfection (complete disappearance at follow-up with subsequent reappearance of Malassezia furfur.11

In course of time 3 patients lost follow up and results were evaluated in 47 patients. Data were analysed with the help of SPSS (Statistical package for social sciences) 20 version. Quantitative data were presented as mean and standard deviation; whereas qualitative data were expressed as frequency and percentage.

Results

Out of all patients, 42.6% were within 21 to 30 years age group followed by 31.9% within 18 to 20 years, 21.3% between 31-40 years and 4.3% within 41 to 50 years age group. Mean age of the respondents was 28.15 ± 8.28 years (range, 18-50 years). Males were predominance with ratio of male to female of 1.94:1.

The duration of disease was 3.85 ± 2.61 months (range, 1.00 to 12.00 Months).

The clinical success (cure plus improvement) was in 38 (80.9%) patients at day 14 and was in 43 (91.5%) patients at 2 months (Table-).

Mycological response at 14 day was eradication in 19 (40.4%) and persistent in 28 (59.6%) patients whereas mycological response at 1 month was eradication in 36 (76.6%) and persistent in 11 (23.4%) patients (Table-III).

Adverse effects were found in 6 (12.8%) patients and the adverse effects were vertigo (3), nausea-vomiting (2) and diarrhoea (1).

Table-I Baseline characteristics of the patients (n=47)
Table-II Clinical response of the respondents

Clinical response	Frequency	Percentage
At 14 day		
Cure	13	27.7
Improvement	25	53.2
Failure	9	19.1
Clinical success	38	80.9
At one month		
Cure	34	72.4
Improvement	9	19.1
Failure	4	8.5
Clinical success	43	91.5

Table-III Mycological response of the respondents

Clinical success	Frequency	Percentage
At 14 day		
Eradication	19	40.4
Persistent	28	59.6
At one month		
Eradication	36	76.6
Persistent	11	23.4

Discussion

Pityriasis (Tinea) versicolor may be treated with topical or oral agents, with the latter being used especially when the disease is widespread or does not respond to topical measures. Systemic agents used for treating pityriasis versicolor include itraconazole, ketoconazole, and fluconazole.5,6

After an analysis of several studies using short course regimens of itraconazole, it was found that higher cure rates for tinea versicolor are obtained after a total dosage of at least 1000 mg.7,8,10,12 Patients treated with a total dosage below 1000 mg achieved a clinical response of 59%.8 With regimens totaling at least 1000 mg, the clinical response was 87%.8 This study was designed to evaluate the efficacy of treatment with itraconazole, 200mg once daily for 1 week in terms of clinical and mycological outcome of pityriasis versicolor.

In this study the mean age of the respondents was 28.15 ± 8.28 years (range, 18-50 years). This result was consistent with the study of Rad et al.13 which reported the mean age of the patients of pityraisis versicolor was 26.5 ± 8.5 years range (15-45 years). Yazdanpanah et al.14 also supported this result that the mean age of the patients was 30.07 ± 9.37 years. This study also revealed that 73.5% patients were within 18 to 30 years age group. These findings were almost similar to the study of Ghosh et al.15 which reported the age group 11 to 30 years constituted 70.0%of patients. In this regards Ahn et al.16 found 70.0% patients were between 18 to 29 years.

This study revealed that males (66%) were predominance with ratio of male to female of 1.94:1. This result was in accordance with several studies where male preponderance of pityriasis versicolor was reported.13,16-19 But female preponderance was reported in other study.3

In the present study morphologically of the disease was hypopigmented variety in 83% and hyperpigmented in 17% of patients. This result correlated with Rao et al.17 where they found that 75% patients showed hypopigmented variety and 8.30% showed hyperpigmented variety and 16.60% patients were of mixed variety.

This study the duration of disease was 3.85 ± 2.61 months (range, 1.00 to 12.00 Months). Rathi,20 supported this finding that the average duration of problem was five months (range, 2 month - 1 year). Kose,21 found that the duration of infection was 2.8 months (range, 1.2-6 months).

This study revealed clinically cured in 27.7%, improved in 53.2% and failure in 19.1% of patients with clinical success (cure plus improvement) was in 80.9% of patients at day 14. Montero-Gei et al.11 supported this result that clinical response at day 14 was cured in 20%, improved in 77% and failure in 3% of patients with the clinical success (cure plus improvement) was in 97% of patients. Kose,21 found that 74% showed a clinical response in patients treated with itraconazole 200mg twice daily.

In the present study clinically cured in 74.4%, improved in 19.1% and failure in 8.5% patients with clinical success (cure plus improvement) was in 90.5% of patients at 1 month of treatment. Montero-Gei et al.11 supported this result that clinical response at 1 month was cured in 73%, improved in 17% and failure in 10% of patients with the clinical success (cure plus improvement) was in 90% of patients.

In this study mycological response after 14 day of treatment was eradication in 40.4% and persistent in 59.6% of patients. Mohanty et al.19 found that KOH smear became negative in 60% of cases after the 2nd week of treatment. Montero-Gei et al.11 found eradication in 38% and persistent in 62% of patients at day 14. Kose,21 found that 80% showed a mycological response in patients treated with itraconazole 200mg twice daily.

This study showed mycological response after 1 month of treatment was eradication in 76.6% and persistent in

23.4% of patients. Mohanty et al.19 found that KOH smear became negative in 80% of cases after the 4th week of treatment. Montero-Gei et al.11 found eradication in 80% and persistent in 20% of patients. Faergemann et al.3 found mycological cure at 4th week of follow up was 92%.

Adverse effects recorded in this study were found in 12.8% patients and the adverse effects were vertigo (3), nausea-vomiting (2) and diarrhoea (1) and no need of discontinuation of treatment. Faergemann et al.3 found adverse events in 11% of cases of itraconazole treated patients. The most common adverse events during treatment were gastrointestinal tract complaints, which were reported by 4.0% of patients.

The excellent in vitro activity of itraconazole against Malassezia species and its high lipophilicity and accumulation in sebaceous glands,22 support the high efficacy rates recorded when patients were evaluated 4 weeks after the start of therapy.

Limitations of the study were (1) single centre study, (2) small sample size, (3) no control arm was taken and (4) fungal culture was not done in this study.

Conclusion

Itraconazole is effective in the treatment of pityriasis versicolor, with mycological cure in 76.6% of patients at 4 weeks of starting of therapy with acceptable safety profile.

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