ISSN 1992-2426

Osmani Medical Teachers Association Journal

Volume 8: Number 2
July 2009

Original Articles

Review article

Case report

Editorial

Teachers Association, Sylhet MAG Osmani Medical College, Sylhet, Bangladesh

Osmani Medical Teachers Association Journal

Teachers Association, Sylhet MAG Osmani Medical College

Executive Committee

President
Prof. Md. Abul Ahbab

Vice Presidents
Prof. Partha Sarathi Shome
Dr. A.Z.M. Shakhawat Hussain

General Secretary
Dr. Jamil Ahmed

Treasurer
Dr. Goutam Kumar Roy

Joint Secretary
Dr. Ishtiaque Ul Fattah

Organizing Secretary
Dr. Dilip Kumar Bhowmik

Members
Dr. Rukon Uddin Ahmed

Dr. M.A. Aziz Chowdhury

Dr. Sudhendu Bikash Das

Dr. Md. Muzammel Hussain

Dr. Najma Begum

Dr. Begum Lutfun Naher

Dr. Moniruzzaman Ahmed

Dr. Md. Enayet Hossain

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Tooth brushing practices among Bangladeshi urban adolescents

Md. Tafazzul Islam[1], Raja Latifah Raja Jallaludin[2], Marhazlinda Bt Jamaludin[3]

Abstract

A cross sectional study was done to investigate the adolescents aged 14-15 years old in secondary school children in Sylhet city for tooth cleaning practices and tooth brushing practices with respect to ownership/sharing of tooth brush, frequency of tooth brushing, use of fluoride toothpaste and previous exposure to oral hygiene instructions. A convenient sample of 751 respondents aged 14-15 year old from 6 secondary schools in Sylhet city were recruited for the study. Data collection was conducted by distributing self administered questionnaires among the children. Almost all respondents (95%) brushed their teeth using toothbrush and toothpaste and they owned a toothbrush (98%). Majority (70%) of the respondents brushed their teeth twice daily and used fluoridated tooth paste (53%). However, about half (42%) of the respondents were unaware whether their toothpaste contained fluoride. Most respondents (95%) learned how to clean their mouth and teeth from family members. Most adolescents in Sylhet city clean their teeth with tooth brush and toothpaste. However, many do not know about fluoride toothpaste. Families play an important role in the maintenance of oral hygiene.

[OMTAJ 2009; 8(2)]

Introduction

Oral diseases can be considered as a public health problem due to its high prevalence and significant social impact. Chronic oral disease typically leads to tooth loss, and in some cases has physical, emotional and economic impacts. These impacts lead in turn to reduced welfare and quality of life.[1]

Much of these impacts can be reduced as common oral diseases that inflict populations are largely preventable by adopting good oral hygiene practices besides controlling sugar intake.[2] Tooth brushing is a mechanical form by which plaque deposits can be eliminated if done properly. Tooth brushing is a lifelong preventive habit to maintain oral health. Daily tooth brushing has been the major irrevocable dental health education message for a long time given to both children and adult. In adolescents, regular tooth brushing is an integral part of general cleanliness behaviour as part of grooming rather than motives related to dental health.[3]

The adolescents group makes up 25%[4] of the total populations of Bangladesh. They are the future generation for a country. These adolescents in the near future will be the economically productive population; driving the economy of the country. Their health and oral health status will affect their quality of life and subsequently productivity.

Information on adolescent oral health practices will be useful to guide planning of oral health promotion strategies. However, such information is not available in Bangladesh. Thus, this study hopes to provide baseline information and act as a precursor for larger in-depth studies.

Materials and Methods

The study was based on a cross sectional study design and the time frame for data collection was two weeks. The target population for this study are all adolescents attending schools in Sylhet City. Sylhet Metropolitan area is the study area for the research. Periodontal diseases are the most common diseases in the country and are major public health problem.[5] All (26) secondary school students attending schools in Sylhet city comprised the study population. There are 20, 234 secondary school students in Sylhet city. School children aged 14-15 years were chosen for the study because

1. Dental Surgeon, M A G Osmani Medical College Hospital, Sylhet
2. Professor, Community Dentistry, University of Malaya, Kuala- Lumpur, Malaysia
3. Senior Lecturer of Informatics, University of Malaya, Kuala-Lumpur, Malaysia.

many children leave the school system at the age of 16 years. Six (6) schools were conveniently selected due to cost consideration in terms of time, money and manpower which were limited. All children who satisfy the inclusion criteria below were included. These are 14-15 years old secondary school students in Class VIII and Class IX who were willing to complete the questionnaire. To fulfil the objectives of the study, a self administered questionnaire was formulated in English and then translated into Bengali.

A pre test of the data collection tool was carried out prior to the actual study. A convenient sample of 50 respondents was selected from Class eight and nine (25 from each class) of BDR public high school located in Sylhet metropolitan area. The questionnaire was pre tested among the students for ease of understanding, sequential flow and clarity of questions and instructions. During this exercise the researcher was able to estimate the time taken to answer the questionnaire and to plan for the actual survey so as to ensure a smooth data collection during the actual survey. Average time to answer the questionnaire by the respondents was approximately 10 minutes.

The survey was conducted in the class room on a normal school day. The researcher visited each school where the questionnaires were distributed and collected immediately upon completion. Two assistants and all school teachers extended their support and co-operation and helped the researcher during data collection. The team moved from class to class to conduct the survey except in Shahjalal Jameya where they were not allowed to do so due to the schools time constraints. Here the teachers were given instructions to conduct the data collection. Data collection was completed within 10 days. All data collected were checked for completeness and coded. The raw data were entered into the computer using Statistical package of Social Science (SPSS) program version 16. Before analysis was performed, data were first cleaned by running the frequency distribution for each item. Any suspicious entry was verified with the data in the original questionnaire. Cross tabulation was performed on the related questions to check for accuracy in data entry. Analysis was done according to the specific objectives of the study. To fulfill the objectives of the study, only the descriptive analysis was performed. As all the variables were categorical, only the frequencies and percentages were derived to reflect the tooth cleaning practices and tooth brushing practices.

Results

Among the 751 respondents, there were about 10% more males than females. Two thirds were in Class 9 (the older children) and 80% have lived in Sylhet City more than 5 years. Four of these respondents did not answer the rest of the questionnaire and they were then dropped from further analysis; leaving 747 respondents.

Tooth cleaning practices

Table 1 describes the way the respondents clean their teeth.

Table 1: Tooth cleaning practices among the respondents (N=747)

Method of tooth cleaning	Frequency (n)	Percentage (%)
Tooth brush and toothpaste	710	95.0
Toothbrush and toothpowder	16	2.1
Toothpowder with finger	11	1.5
Miswak	8	1.1
Others	2	0.3
Total	747	100.0

Most of the respondents (95%) brush their teeth with toothpaste. Traditional way of cleaning teeth such as using toothpowder or chewing sticks called "miswak" accounts for only 5%.

Tooth brushing practices

Table 2 describes tooth brushing practices among the 726 respondents who reported cleaning their teeth with a toothbrush.

Table 2: Tooth brushing practices among the respondents (N=726)

Tooth brushing practices	Frequency (n)	Percentage %
Ownership/Sharing of tooth brush (N=726)		
Own brush	709	97.6
Share brush	15	2.0
No response	2	0.4
Total	726	100.0
Frequency of tooth brushing (N=726)		
Once daily	182	25.0
Twice daily	508	69.9
More than twice daily	36	5.1
Total	726	100.0

Use of fluoride toothpaste (N=726)	385	53.0
Yes	34	4.6
No	305	42.0
Don't know	2	0.4
No response		
Total	726	100.0

Among those who brush their teeth, almost all (98%) own a brush and do not share with others. Although, three quarters of the respondents brush their teeth at least twice daily, a quarter of them brush only once a day. Almost half of them were unaware of the fluoride content in their toothpaste whilst 53% reported they use fluoride toothpaste.

Previous exposure to oral hygiene instruction

Table 3 describes the respondents previous exposure to oral hygiene instruction.

Table 3: Previous exposure to oral hygiene instruction.

Previous exposure	Frequency n	Percentage %
Had been taught to clean teeth and mouth (N=747)		
Yes	566	75.8
No	63	8.4
Don't know	115	15.4
No response	3	0.4
Total	747	100.0
Name of persons who teach tooth cleaning (N=566)	536	94.7
Family	4	0.7
Teacher	16	2.8
Dentist	5	0.9
Doctor	5	0.9
Nurses/ others		
Total	566	100.0

All the respondents were asked if anyone had taught them to clean their teeth and mouth and 76% said they have and most (95%) were taught by family members.

Discussion

Oral hygiene practices

Tooth cleaning practices

This study found that almost all the adolescent school children (95%) who participated in the study, clean their teeth with tooth brush and toothpaste. More than 90% of adults aged 15 years and above in Malaysia brush their teeth with toothpaste.[6] Similarly, a very high proportion of adolescents (98%) brushed their teeth with toothbrush and tooth paste in Sweden, Norway and Switzerland.[7] Brushing teeth with toothpaste is common and has been reported in UK.[8] Cleaning teeth with toothbrush and toothpaste can be expected to be common practice among schoolchildren as oral health education in schools emphasises the use of these oral hygiene aids. Adolescents are also at an age where they are conscious of personal grooming and are concern about the appearance of their teeth and mouth odour.[9] In Sylhet City, toothbrush and toothpaste are easily available and the population, who have relatively better socio-economic status compared to the rural population, generally can afford toothbrushes and toothpastes. These factors will certainly boost the practice of brushing teeth with toothpaste provided facilities such as water supply is available. Inaccessibility to water supply may be a deterrent to brushing teeth frequently.

A very small proportion (1-2%) of the adolescents cleaned their teeth using traditional methods such as toothbrush or fingers with tooth powder and chewing sticks called "miswak". Miswak is derived from the Arak, Neem and other trees and is commonly used in Arab and Asian countries. It has been reported that the miswak contains medicinal properties and natural antiseptics that kill harmful micro-organisms in the mouth.[10] Nevertheless evidence to show the long term effects of tooth cleaning using tooth powder or miswak have not be conclusive.

Tooth brushing practices

Almost all the respondents had own their own toothbrush which might be due to good socio-economical status and their seriousness about hygiene.

A majority (70%) of the adolescents in this study brush their teeth twice in a day. Tooth brushing is the most reliable means of controlling plaque if done thoroughly at regular intervals[11] and brushing teeth twice a day has been the commonly accepted recommendation by most dentists to control bacterial plaque.[12]

The present study revealed that majority (70%) of the respondents among school children in Sylhet city reported performing the recommended practice of brushing teeth twice in a day. This indicates that tooth brushing has become a social norm among the adolescents and was performed routinely. However, it is also possible that some may not actually practice what they have reported.

In this study, a quarter (25%) of the adolescents who brush their teeth brush only once in a day while 70% brush twice daily. Generally, most adolescents in developed and developing countries brush their teeth although the evidences suggest that the frequency of tooth brushing varies from one country to another.[13-14] A study in Malaysia of adults aged 15 years and above

showed a low proportion (57%) of adults who brush their teeth twice daily. However, this study was conducted in 1992.[15]

The proportion of those who brush twice daily among adolescents in Sylhet city could be higher than the 70% found in this study because of the disparity in the proportion of males and females. The male: female ratio in this sample was 121:100 whilst the ratio in the population of Bangladesh was 105:100[16] meaning that males are over presented in this study. Studies[17] have shown that Girls brush their teeth more frequently compared to boys.

In adolescents, socio-economical status may affect tooth brushing practice and frequency as well as oral hygiene and gingival health. It is already well known that adolescents from higher socio-economical status brush their teeth more frequently than adolescents from lower socio-economical status.[18] This may explain for the relatively high proportion (70%) of urban adolescents in this study who reported brushing at least twice daily. It is also important to take note that 25% of the respondents brushed their teeth only once daily. Future studies should identify this group of adolescents so that oral health education messages on frequency of brushing can be intensified for them.

This study in Sylhet City also demonstrated that tooth brushing was more responsive to family rather than to the influences of dental personnel. Ninety five percent (95%) of the respondents in this study reported that they had learned how to clean their teeth and mouth from family members.

In primary socialization parents are role models to their young children and can exert strong influence on their primary health behaviour.[19-20] It is therefore important for oral health educators to target parents of very young children when trying to instil healthy behaviours such as tooth brushing as part of daily oral regime.

Furthermore, it is important to note that slightly more than half (53%) of the respondents in this study are aware that their toothpaste contain fluoride whilst 42% were completely unaware. This is probably due to the fact that the availability of fluoridated toothpaste at home is usually beyond the control of most adolescents but depends on parents. Adolescents can be the resource person in families with regards to health information. They should be trained to read and interpret labels and help families to make healthy decisions.

Students however should be informed about the beneficial effect of fluoride either through dental health education or by including it into the school curriculum. However, no widespread use of toothpaste containing fluoride was found in the present study. So, it is therefore extremely important to take necessary steps to emphasize the importance and benefit of the fluoride containing toothpaste.

Most adolescents in Sylhet city clean their teeth with tooth brush and toothpaste. However, many do not know about fluoride toothpaste. Families play an important role in the maintenance of oral hygiene.
Health education and health promotion should emphasize brushing at least twice daily using fluoride toothpaste. Adolescents should be encouraged to read labels and be aware of the contents of toothpaste and their effects. A similar future research to be conducted among urban and rural adolescents in Sylhet district using a random selection of schools. This future study should also include information on reasons for tooth cleaning and also a normative assessment of oral hygiene and oral health status.

References

1. Smyth E, Caamano F and Reveiro, PF. Oral Health Knowledge, Attitudes and Practice in 12 year old school children. Med Oral pathol 2007; 12: 1-2.
2. World Health Organization. Diet, Nutrition and the prevention of chronic dental diseases. Geneva, Switzerland, 2002.
3. Hodge HC, Holloway, PJ and Bell CR. Factors associated with tooth brushing behaviours in adolescents. Br Dent J 1982; 152: 49-51.
4. Khan M.S.H. and Rahman APMS. Baseline survey of Adolescent Reproductive HealthInterventions in Bangladesh. National Media Survey, 2002, BCCP and SMC, 2003: 14
5. Helderman WHVP, Joarder MAK and Begum A. Prevalence and Severity of periodontal diseases and dental caries in Bangladesh. International Dent J 1996; 46: 76-81.
6. Esa R, Razak IA, Jalalludin RL and Jaafar N. A Survey on Oral Hygiene Practices Among Malaysian Adolescents. Clinical Prevent Dent 1992; 14: 23-7.
7. Honkala E, Kannas L and Rise J. Oral heath habits of school children in 11 Eurropean countries. International Dent J 1990; 40: 211-7.
8. Jackson RJ, Newman HN, Smart GJ, Stokes E, Hogan J I, Brown C and Seres J. The Effects of a Supervised Tooth brushing Programme on the Caries Increment of Primary School Children, Initially Aged 5-6 Years. Caries Research 2005; 39: 108-15.

9. Hodge HC, Holloway, PJ and Bell CR. Factors associated with tooth brushing behaviours in adolescents. Br Dent J 1982; 152: 49-51.
10. Khan MGA. A Trusted Formula for Oral Hygiene. Pakistan Times, Pakistan 2008; P.1-2
11. Loe H. (2000). Oral Hygiene in the prevention of caries and periodontal disease, International Dent J *2000;* 50: 129-39.
12. Attin T and Hornecker E. Tooth brushing and oral health: how frequently and when should tooth brushing be performed. Oral Health Prev Dent 2005; 3: 135-40.
13. Eaton KA and Carlile JM. Tooth brushing behaviour in Europe: Opportunities for dental public health. International Dent J 2008; 58: 287-93.
14. Currie Eds. In: Gabainn SN and Godean E.. Inequalities in Young People's Health Health Behaviour in School Children (HSBC); International report from 2005/2006 survey 2008; WHO ISBN 97 892 890 7195 6PP:97-100.
15. Esa R, Razak IA, Jalalludin RL and Jaafar N. A Survey on Oral Hygiene Practices Among Malaysian Adolescents. Clinical Prevent Dent 1992; 14: 23-7
16. Statistical pocket book, Bangladesh http://www.bbs.gov.bd/dataindex/pb_wb_page.pdf. 2007. (Access date March, 2009).
17. Ainamo J and Parviainen K. Occurrence of plaque, gingivitis and caries as related to self-reported frequency of tooth brushing in fluoride areas of Finland. Community Dent Oral Epidemiol 2006; 7: 142-6.
18. Addy M, Dummer PMH, Hunter ML, Kingdon A. and Shaw WC. The effect of tooth brushing frequency, tooth brushing hand, sex and social class on the incidence of plaque, gingivitis, and pocketing in adolescents: a longitudinal cohort study. Community dental health 1990; **7**: 237-247.
19. Blinkhorn AS. Influence of social norms on tooth brushing in preschool children. Community Dent Oral Epidemiol 1978; 6: 222-6.
20. Hodge HC, Holloway, PJ and Bell CR. Factors associated with tooth brushing behaviours in adolescents. Br Dent J 1982; 152:49-51.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Aetiology and Antibiogram of Bacterial Wound Infection in Sylhet MAG Osmani Medical College Hospital

Md. Mosharof Hossain[1], Osul Ahmed Chowdhury[2], Muhammad Shamsher Ahmed[3], Lutfe Elahi Farooqi[1]. Goutam Kumar Roy[4]

Abstract

Wound infection is an important factor for delayed wound healing leading to increased hospital stay and treatment cost. The present study was carried out to find out the causative organisms of wound infections in Sylhet MAG Osmani Medical College Hospital and their antimicrobial resistance pattern. A total of 157 wound swabs were collected from patients attending surgical outdoor and inpatient departments and cultured in the Department of Microbiology of Sylhet MAG Osmani Medical College. Isolation, identification and susceptibility testing was done according to the standard protocol. Out of the 157 samples 52.2% yielded growths. *Staphylococcus aureus* was the commonest isolate (37.6%), Gram negative bacilli (Escherichia, Proteus and Klebsiella) accounted for 13.4% and only 1.3% of the culture showed mixed growth. Majority (53.7%) of these Staphylococcus were MRSA; most of them were resistant to penicillin (96.7%), amoxiclav (93.4%) cephalexin (67.2%) and erythromycin (60.6%). Resistance to ceftriaxone (71.4%) and nitrofurantoin (61.9%) was observed in Gram negative organisms also. The present study revealed that, organisms responsible for wound infection in SOMCH were resistant to many commonly used antibiotics. Susceptibility testing should be perfomed before starting treatment to reduce the spread of multiple drug resistant organisms in the community.

[OMTAJ 2009; 8(2)]

Introduction

Infectious diseases remain a major cause of morbidity and mortality in the developing countries including Bangladesh. Antimicrobial resistant bacteria are now creating a challenge to the clinicians and researchers. Emergence of resistant strains has become a major clinical concern globally.[1] It is also evident that wide and indiscriminate use of antibiotics kill the sensitive bacteria favouring the growth and survival of the resistant ones.[2] The tropical weather of Bangladesh facilitates the occurrence and spread of infections more rapidly.[3] Among different types of infectious diseases wound infections accounts for a large percentage of mortality and morbidity. Lack of proper knowledge and negligence about disease and its treatment, antimicrobial resistance to common pathogens has created a serious problem in the treatment of wound infections in our country.

Progressive bacterial colonization in the wounds by preexisting microorganisms either from surface or from depth often play a major role in the non healing or delayed healing of the wound.[4] Any wound creates the opportunity for the entrance of microorganisms by breaking the skin barrier. Microbes invade the skin and adjacent tissues easily when the protective barrier of the skin is breached by traumatic or surgical invasion. After that, they overcome the host immunity and a localized infection takes place.[5]

Wound infection is one of the most common causes leading to longer duration of hospital stay. It not only leads to immense suffering of the patients but also cause a significant increase in the treatment cost. Wound infections especially those following surgical procedures are also embarrassing for the healthcare providers as it has got a negative impact on their success stories. Identification of causative organisms and an idea about their sensitivity or resistance is of utmost importance to treat wound infections. In this article an endeavor is made to isolate organisms causing wound infections in a tertiary care hospital and to get a picture of their sensitivity pattern.

1. Assistant Professor of Microbiology, Sylhet MAG Osmani Medical College
2. Professor of Microbiology, Sylhet MAG Osmani Medical College
3. Assistant Professor of Microbiology National Institute of Kidney Disease & Urology, Dhaka.
4. Associate Professor of Medicine, Sylhet MAG Osmani Medical College

Materials and Methods

This study was carried out in the Department of Microbiology, Sylhet MAG Osmani Medical College and the surgical wards including orthopedic ward of Sylhet MAG Osmani Medical College Hospital. The study was approved by the ethical review committee of Sylhet MAG Osmani Medical College. Informed written consent was obtained from each participant. Pus or exudates from one hundred seventy two (172) samples were cultured in Blood agar (BA), MacConkey's (MAC) agar and Salt agar (SA) media following the standard protocol.[5] Gram staining was performed to see shape, arrangement & gram reaction. Bacterial isolates were subjected to antimicrobial susceptibility test (AST) by Kirby Bauer disc diffusion methods in Mueller-Hinton agar media.[6] The interpretation of sensitivity test was done according to NCCLS, 2001.[7]

Results

A total of 157 samples from various types of infected wound were collected and cultured for isolation of offending bacterial pathogen. Most (82%) of the samples were collected from male patients and rest (18%) were from female patients. Almost half of them (49.7%) were attending surgery OPD and another half (50.3%) were admitted in surgical wards. Majority (72%) of the wounds was non-operative and rest (28%) of them was operative wounds. Most (89%) of the patients received at least one dose of antibiotic therapy before collection of swabs, only 10% swabs were collected before an antibiotic course was started.

Table-I: Organisms Isolated from Wounds

Bacterial species	Number	Percentage
Staphylococcus aureus	59	72%
Escherichia coli	18	22%
Proteus spp.	2	2.4%
Klebsiella spp.	1	1.2%
Mixed growth	2	2.4%
Total	82	100 %

Among the 157 wound swabs cultured, positive cultures were obtained in 82 (52.2%) cases and rest 75 (47.8%) yielded no growth. Among the 82 positive cultures majority (72%) isolates were *Staphylococcus aureus* followed by *Escherichia coli* (22%). A few yielded growth of Proteus spp. (2.4%), Klebsiella spp.(1.2%). About 2.4% of the culture yielded mixed growth where one organism was *Staphylococcus aureus* (Table-I).

Table-II: Antibiotic sensitivity pattern of *Staph. aureus* isolates (n=61)

Antimicrobial agent	Sensitive n (%)	Intermediate n (%)	Resistant n (%)
Penicillin	2 (3.3%)	00	59 (96.7%)
Oxacillin	27 (44.3%)	00	34 (55.7%)
Amoxiclav	4 (6.6%)	00	57 (93.4%)
Cephalexin	13 (21.3%)	7 (11.5%)	41 (67.2%)
Ceftriaxone	25 (41.0%)	27 (44.3%)	9 (14.7 %)
Cefaclor	13 (21.3%)	13 (21.3%)	35 (57.8%)
Imipenam	59 (96.7%)	2 (3.3%)	00
Vancomycin	50 (82%)	00	11(18%)
Gentamycin	44 (72.1%)	1 (1.7%)	16 (26.2%)
Erythromycin	6 (9.8%)	18 (29.5%)	37 (60.7%)
Tetracycline	21 (34.4%)	3 (4.9%)	37 (60.7%)
Ciprofloxacin	41 (67.2%)	13 (21.3%)	7 (11.5%)
Co-trimoxazole	32 (52.5%)	3 (4.9%)	26 (42.6%)

Antibiotic sensitivity pattern of *Staphylococcus aureus* isolates and two mixed growth showed that, most of them were sensitive to imipenum (96.7%), vancomycin (81.9%) and gentamycin (72.1%). On the other hand, most of them were resistant to penicillin (96.7%) and amoxiclav (93.44%). A good number of the isolates also showed resistance to cephalexin (67.2%), erythromycin (60.6%) and tetracycline (60.6%). Intermediate susceptibility was observed for ceftriaxone (44.3%) and erythromycin (29.50%). Resistance to oxacillin was observed in 53.73% of *Staphylococcus aureus* isolates; those were termed as methicillin resistant *Staphylococcus aureus* (MRSA) (Table-II).

Table-III: Antibiotic sensitivity pattern of Gram negative isolates (n=21)

Antimicribial Agent	Sensitive	Resistant
Ceftriaxone	6 (28.6%)	15 (71.4%)
Gentamycin	11 (52.4%)	10 (47.6%)
Ampicillin	2 (9.5%)	19 (90.5%)
Ciprofloxacin	14 (66.7%)	7 (33.3%)

Co-trimoxazole	13 (61.9%)	8 (38.1%)
Nitrofurantoin	8 (38.1%)	13 (61.9%)

On the other hand majority of the isolated gram negative bacilli (Escherichia, Proteus and Klebsiella) were sensitive to ciprofloxacin (66.7%), co-trimoxazole (61.9%), and gentamycin (52.4%). However, majority of these isolates were resistant to ampicillin (90.5%), ceftriaxone (71.4%) and nitrofurantoin (61.9%) (Table-III).

Discussion

In the present study an attempt was made to explore the prevalence, pattern and progression of antimicrobial resistance among organisms frequently isolated from infected wounds in Sylhet MAG Osmani Medical College Hospital. Bacterial pathogens were isolated from 52.22% of the samples studied. The commonest isolate was *Staphylococcus aureus* (37.6%), gram negative bacilli (Escherichia, Proteus and Klebsiella) accounted for 13.4% and only 1.3% of the culture showed mixed growth.

In this study, the incidence of staphylococcus aureus is high as reported in a study conducted in Kolkata, India isolating 39.9% *Staphylococcus aureus* out of 171 cases of wound infection. However, isolation of other pathogens like *Escherichia coli* (26.1%) *Pseudomonas aeruginosa* (15.4%), Klebsiella (5.8%), Proteus (4.8%) etc. from surface swab culture are much higher.[8] Findings of the study was also in concordance with a Nigerian study showing *Staphylococcus aureus* was the predominant microorganism (37.8%).[9] But a different picture was seen in a Bangladeshi study conducted at NITOR with highest percentage of isolates being *Escherichia coli* 55.9%, followed by Pseudomonas spp. 52.9%, Proteus spp. 38.2%, and *Staphylococcus aureus* only 17.6%.[3]

The antibiotic sensitivity patterns of isolated *Staphylococcus aureus* revealed that, majority (55.7%) of them are MRSA. Prevalence of MRSA may differ between countries and institutions.[10] Although lower than that of NITOR study with 83.3% isolation,[3] we found a very high percentage of MRSA in this hospital. Our finding indicate that, MRSA is existing in the hospital premises which is alarming for the citizen of the community particularly in our country, where majority of the population even can not afford appropriate treatment.

A number of gram negative organisms were isolated, *Escherichia coli* being commonest. Nearly three-fourth of these isolates was resistant to ceftriaxone and nitrofurantoin. This finding is very important on the context of current practice of empirical use of antibiotics with no knowledge of susceptibility. All types of antibiotics especially third generation cephalosporins are being used widely with no or minimum indication. A large section of our population cannot afford the cost to complete the antibiotic therapy due to poverty. As a result of this indiscriminate and improper use of antibiotic, the common pathogens have become increasingly resistant to commonly used drugs. In addition to that, even some solvent people, make the treatment complicated by incomplete antibiotic therapy due to ignorance and negligence.

In conclusion, Wound infection contributes significantly to the cost, the morbidity, and the possible longer duration of hospital stay. It also has great influence on patients' outcome and overall resource utilization. Periodic culture surveillance of the causative organism is necessary to understand the prevalent strains of bacteria and their susceptibility. Judicious antibiotic therapy based on this knowledge is necessary to prevent the emergence of resistant bacteria and better management of wound infections.

References

1. Jones RN & Marshall SA. Antimicrobial activity of Cefepime tested against T: Bush group I beta-lactamase producing strains resistant to Ceftazidime. Diagn Microbiol Infct Dis 1994; 19: 33-8.
2. Moellering RC. Emerging resistance with gram positive aerobic infections. where do we go from here? Introduction: problems with antimicrobial resistance in gram positive cocci. Clin infect Dis 1998; 26: 1177-8
3. Jahan Y, Jahan F, Mamun KZ, Hossain MA, Shirin T, Sahman S, Gomes DJ. Emergence of methicilllin resistant Staphylococcus aureus (MRSA) associated with wound infections. Mymensingh Med J. 2004; 13 :76-81.
4. Arora S, Prabhakar H, Gara BB & Jindal N. Anaerobic Bacterial Flora of Wound Sepsis. J Indian Med Assoc 1990; 88 : 154-6.
5. Basak S, Dutta SK, Gupta S S, Ganguly CA, De R. Bacteriology of wound infection: Evaluation by surface Swab and Quantitative full thickness wound Biopsy culture. J Ind Med Asso 1992; 90: 33-4.
6. Brooks GF, Butel JS and Morse SA. Antimicrobial chemotherapy. In: Jawetz, Melnick and Adelberg. Medical Microbiology, 23rd ed. Boston: Lange. 2004; 166.

7. Bauer AW, Kirby WM, Sherris JC, Jurck M. Antibiotic susceptibility testing by a standard single disc method. Am J Clin Pathol 1996; 45: 493-6.
8. National Committee for Clinical Laboratory Standards. Performance standards for antimicrobial susceptibility testing. NCCLS approved standard M100- S 11. NCCLS. Pennsylvania, USA. 2001; 21: 48-52.
9. Basak S, Dutta SK, Gupta S, Ganguly AC, De R. Bacteriology of wound infection: evaluation by surface swab and quantitative full thickness wound biopsy culture. J Indian Med Assoc 1992; 90 : 33-4.
10. Akinjogunla OJ, Adegoke AA, Mboto CI, Chukwudebelu IC and Udokang IP. Bacteriology of automobile accident wounds infection. Inter J Medicine Med Sciences 2009; 1: 23-7.
11. 10. Christiana MJE and Vandenbroucke-Grauls. Management of methicillin resistant *Staphylococcus aureus* in the Nederlands. Reviews Med Microbiol 1998, 9: 109-16.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Correlation of Preoperative CEA with Dukes Stages in Colorectal Carcinoma.

Himangshu Bardhan[1], Amjad Hossain Khan[2], Shamim Akhter Mimi[3], Nibedita Das Pew[1]

Abstract

In this study, we investigated the correlation between preoperative serum tumour marker CEA and the Dukes stages in colorectal carcinomas. A strong correlation has been evident between preoperative CEA level and Dukes stages. The mean CEA level progressively increased with each Dukes category and the mean value for each of the four stages was significantly different.

In this study, 41 patients with histopathologically diagnosed colorectal cancer have been included. The mean CEA levels found according to the Dukes staging were as 2.78 ng/ml in stage A, 9.22 ng/ml in stage B, 17.24 ng/ml in stage C and 104.55 ng/ml in stage D. The CEA positive (cut off value 5 ng/ml) cases found were as 14.3% in stage A; 36.4% in stage B; 70.6% in stage C and 83.3% in stage D. Pearson correlation test has been done for the CEA mean levels and for the CEA positive cases with Dukes stages. The test was found significant. On the basis of the data presented, it has been concluded that preoperative CEA levels could be considered as a stratification parameter in clinical trials of the colorectal carcinoma cases. Thus preoperative CEA levels provide prognostic information before that obtained by conventional staging methods.

[OMTAJ 2009; 8(2)]

Introduction

Cancer affects large number of people worldwide and it has devastating effects on individual, family and society. Colorectal carcinomas represent one of the prime challenges in the medical profession. It is the third commonest cancer (after lung and breast) in the UK with more than 35,000 new cases diagnosed each year[1]. In the United States, it is by far the most common and most curable carcinoma of the gastrointestinal tract[2]. The incidence rates of colorectal carcinoma in Africa, South and Central Asia including India are 2 to 8 per 100,000 [3]. One major role, the pathologist plays, is the proper staging of colorectal cancer, which provides the clinician with important information regarding the patient's prognosis and the need for adjuvant therapy. For many years, pathologists have used the classic Dukes classification, which was devised in 1932. This system is used throughout the UK to determine prognosis and the necessity for postoperative chemotherapy[4]. In colon cancer, the levels correlate with the widely used Dukes staging system[5]. A raised preoperative CEA level has been shown to be associated with a poorer prognosis[6].

Material and Methods

The study has been carried out in the Department of Pathology, Sylhet MAG Osmani Medical College, during the period of July 2008 to June 2009. It was a cross sectional study. A total 45 patients of suspected colorectal carcinoma attending in the surgery department of Sylhet MAG Osmani medical college hospital and in private practices of Sylhet city has been included. With taking permission of the patient, relevant questions have been asked as per prescribed data sheet. Physical examination has been done. Investigations, specially X-ray, imaging and colonoscopic findings have been noted. Five ml. of blood from patient has been taken by sterile disposable syringe and sent for CEA estimation. After surgery (hemicolectomy / abdomino-perineal resection), operative findings are noted and the specimen has been collected for histopathology. When histopathology has been found compatible with colon/rectal carcinoma, the subject has been selected as case. Four cases were excluded from the study for non-fulfillment of the criteria for colorectal carcinoma histopathologically. So,

1. Lecturer, Department of Pathology, Sylhet M A G Osmani Medical College.
2. Professor, Department of Pathology, Sylhet M A G Osmani Medical College.
3. Assistant Professor, Department of Pathology, Sylhet M A G Osmani Medical College.

the net populations of the study finally were 41.The Dukes staging has been determined from X-ray, ultrasonography, operative findings, gross and histopathological findings of tumour and mesenteric lymph nodes as follows:

Stage A – involves the wall of the bowel only.

Stage B – extends through the bowel wall, no lymph node metastases.

Stage C - extends through the bowel wall, lymph node metastases.

Stage D – distant metastases.

Results

Of the total 41 cases of colorectal carcinoma, preoperative serum CEA values of all cases have been estimated. The lowest and highest level has been found 0.91 ng/ml and 189 ng/ml respectively. The mean (±SD) were 25.4 (±43). The mean values of serum CEA in stage-A, stage-B, stage-C and stage-D were 2.78 ng/ml, 9.22 ng/ml, 17.24 ng/ml, 104.55 ng/ml respectively. The elevated (cut off value 5 ng/ml) preoperative serum CEA levels have been observed in 14.3% cases of Dukes stage A, in 36.4% cases of Dukes stage B, in 70.6% cases of Dukes stage C and in 83.3% cases of Dukes stage D. The preoperative serum CEA has been increased with progressive Dukes stages. The results are shown in the following tables and in the chart.

Fig. I: Bar chart showing correlation of CEA means with Dukes stages.

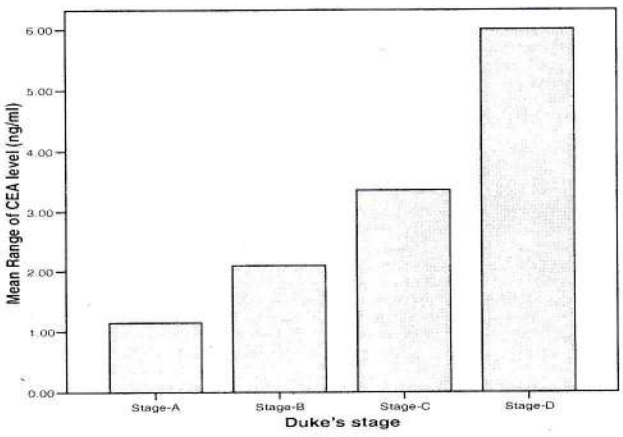


Table I: Correlation of CEA positive cases with Dukes stages.

Serum CEA (Cut off value)	Dukes stage							
	Stage A		Stage B		Stage C		Stage D	
	No.	%	No.	%	No.	%	No.	%
≤5ng/ml	6	85.7	7	63.6	5	29.4	1	16.7
>5ng/ml	1	**14.3**	4	**36.4**	12	**70.6**	5	**83.3**
Total	7	100	11	100	17	100	6	100

Pearson correlation test has been done to see the correlation of preoperative carcinoembryonic antigen with Dukes stages in colorectal carcinoma. Correlation was observed significant.

Discussion

The mean CEA levels found according to the Dukes staging were similar to the studies done by others. Dbouk, et al. observed in their study that the mean CEA level in non-metastatic colorectal carcinoma was 7.56 ng/ml and in metastatic colorectal carcinoma was 22.82 ng/ml [7]. Wolmark, et al. noted that the mean CEA progressively increased with each Dukes category. They found in their study that the mean preoperative CEA levels were 3.9 ng/ml in Dukes stage A, 9.3 ng/ml in Dukes stage B, 32.1 ng/ml in Dukes stage C and 251.0 ng/ml in Dukes stage D lesion [8].

The CEA positive (cut off value 5 ng/ml) cases were consistent with the studies done by others. Wang, et al. observed that the CEA positive cases were 25% in Dukes stage A, 50% in Dukes stage B, 55% in Dukes stage C and 83% in Dukes stage D lesion[9]. Duffy reported that the CEA positive cases were 3%, 25%, 45% and 65% in Dukes A, B, C and D stages respectively [10]. Whereas, Rustin reported that the CEA positive cases were 5%, 25%, 44% and 65% in Dukes A, B, C and D stages respectively. Ebrahimzadeh et al. did another study and found that the CEA positive cases were 13.2% in Dukes stage A, 21.5% in Dukes stage B, 41.4% in Dukes stage C and 55.1% in Dukes stage D lesion[11]. In our country, a study done by Sattar in Dhaka medical college hospital and reported that serum CEA raised with the advanced stage of the disease, such as it

was highest in stage D (100%), followed by stage C (92.31%) and stage B (30.56%)[12]. Booth, et al. reported the CEA estimation in the preoperative assessment of colorectal carcinoma as a useful guide to the presence of metastatic disease[13]. . Another study done by Joint national cancer institute of Canada/ American cancer society investigation and found that the preoperative CEA positive cases were 18% in Dukes A, 53% in Dukes B, 65% in Dukes C and 79% in Dukes D lesion[14]. From the above studies including the present study, it was found that the preoperative the mean values and the CEA positive cases were progressively increased with Dukes staging. There was a strong correlation between the tumour marker CEA and Dukes staging.

In conclusion, the most important prognostic indicator of colorectal carcinoma is the extent of the tumour at the time of diagnosis - the stage. Our observations are that the preoperative carcinoembryonic antigen definitely correlates well with Dukes stages and increases with progressive Dukes stages. The preoperative assessment of serum CEA level could be used to predict the stage of the disease before operation. As a result, the clinician can make a plan of treatment of the patient preoperatively and could be helpful for better management.

References

1. Dorundi S and Banerjea A. Colorectal cancer: early diagnosis and predisposing causes. Surgery J UK 2006; 24 : 131-6.
2. Rosai J. Rosai and Ackerman's surgical pathology. 9th ed., Missouri: Mosby 2004; 776-855.
3. Notani PN. Global variation in cancer incidence and mortality. Curr science 2001; 81 : 465-74.
4. Robertson K E and Levison D A. Pathology of tumours of the small and large intestine. Surgery J UK 2006; 24 : 126-30.
5. Kumar V, Abbas A K and Fausto N. Neoplasia. In: Robbins and Cotran. Pathologic basis of disease. 7th ed., Philadelphia: Elsevier Saunders 2005; 269-342.
6. Rustin GJS and Guppy AE. Tumour markers. In: Clinical surgery in general. 4th.ed., Edinburgh: Elsevier 2004; 302-9.
7. Dbouk HA, Tawil A, Nasr F, Kandakarjian L and Abou-Merhi R. Significance of CEA and VEGF as diagnostic markers of colorectal cancer in Lebanese patients. Open clin cancer J 2007; 1:1-5.
8. Wolmark N, Fisher B, Wieand HS, Henry R S, Lerner H, Legault-Poisson S, Deckers P J, Dimitrov N, Gordon P H, Jochimsen P and Oishi N. The prognostic significance of preoperative carcinoembryonic antigen levels in colorectal cancer, results from NSABP clinical trials. Annals surg 1984; 199 :375-81.
9. Wang WS, Lin J K, Chion TJ, Liu JH, Fan FS, Yen CC, Lin TC, Jiang JK, Yang SH, Wang HS and Chen PM. Preoperative carcinoembryonic antigen level as an independent prognostic factor in colorectal cancer: Taiwan experience. Japanese J clin oncol 2000; 30:1-15.
10. Duffy M J. Carcinoembryonic antigen as a marker for colorectal cancer: is it clinically useful? Clin chemistry 2001; 47: 624-30.
11. Ebrahimzadeh M E, Miri M R and Fattahi E. The prognostic value of preoperative serum CEA and CA 242 in patients with colorectal cancer. International med J 2005; 4: 8-13.
12. Sattar MM. Clinicopathologic study of colorectal carcinoma. Department of surgery, Dhaka medical college and hospital 2006.
13. Booth S N, Jamieson G C, King J P G, Leonard J, Oates G D and Dykes P W. Carcinoembryonic antigen in management of colorectal carcinoma. BMJ 1974; 26:183-7.
14. A joint national cancer institute of Canada/ American cancer society investigation: A collaborative study of a test for carcinoembryonic antigen in the sera of patients with carcinoma of the colon and rectum. CMA. J 1972; 107:25-33.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Experience of thyroid surgery in the department of ORL & HNS of Sylhet MAG Osmani Medical College Hospital- A retrospective study

Harunur Rashid[1], Nanda Kishore Sinha[2], Md. Zakir Hossain[3], Krishna Kanta Bhowmik[3]

Abstract

A total of 50 patients were operated for different form of thyroid surgery as lobectomy, hemithyroidectomy, subtotal, near-total, total thyroidectomy with or without neck dissection. The indications of thyroid surgeries were also different as solitary nodule, multinodular goitre, thyroid malignancy and diffuse goitre. We experienced different types of complications as recurrent laryngeal nerve injury, (uni/bilateral), haemorrhage, haematoma, post-operative hypocalcaemia, tracheal injury, wound infection etc. The aim of this study is to asses the thyroid surgery performances in our setting of otolaryngology department, SOMCH and to correlate these findings with other standard settings to identify our shortcomings and to correct them.

[OMTAJ 2009; 8(2)]

Introduction

Patients having thyroid swelling of different entity is a frequent finding in a ENT outdoor and ward. Almost all of them require surgery in an attempt to give them a complete and comprehensive management of their problem. Thyroid surgery can be approached from number of disciplines and subdisciplines. Within general surgery, operations can be performed by a general surgeon, a surgical oncologist, an endocrine surgeon or a head-neck surgeon. Within otolaryngology, surgery can be performed by either general otorhinolaryngologists or dedicated head-neck surgeons and all of these depends on the referral patterns of their colleagues, local endocrinologists and general practitioners. Thyroid surgery should be done by a specially trained surgeon, who have the expertise to manage the difficulty in managing thyroid malignancy, neck dissection, able to evaluate the vocal cords, parathyroid glands management and finally who fully understand the biology of the disease process and controversies relating to such issues as Hemi-vs-total thyroidectomy, and who can manage the different types of complications arising out of thyroid surgery[1].

1. Associate Professor, Department of torhinolaryngology & Head Neck Surgery Sylhet MAG Osmani Medical College, Sylhet.
2. Assistant Professor, Department of Otorhinolaryngology & Head Neck Surgery MAG Osmani Medical College, Sylhet.
3. Assistant Registrar, Department of Otorhinolaryngology & Head Neck Surgery, Sylhet MAG Osmani Medical College.

Materials & Methods

This is a retrospective observational study. The study was conducted in the department of Otorhinolaryngology & Head Neck Surgery (ORL & HNS)of Sylhet MAG Osmani Medical College Hospital over a period of eighteen months. In this study- All the thyroid surgeries were included. All cases had their final diagnosis with all required investigations and all were allowed by the department of anaesthesia to undergo thyroid surgery under General Anaesthesia.

All cases were randomly selected from operated patients in our department. These patients had not undergone previous thyroid operations. No other surgical procedures were performed at that time.

Procedure of surgery:

Several surgical procedures have been used in our department according to type, extension and need by the patient. The operation performed are lobectomy, hemithyroidectomy, subtotal & near total thyroidectomy and total thyroidectomy with or without neck node excision. The operations were done as following steps-

- Positioning & preparation of skin.
- Incision.
- Flap raising.
- Incision of investing layer of deep cervical fascia.
- Mobilization of gland.
- Identification of recurrent laryngeal nerve.
- Localization and preservation of parathyroid glands.
- Mobilization of upper and lower pole.

- Removal of gland.
- Haemostasis.
- Placement of negative pressure drainage.
- Closing the wound in layers.

Results

Results are shown in tabulated form below:

Table-I
Sex distribution (n=50)

Sex	No	%
Male	10	20%
Female	40	80%

Table-II
Age distribution

Age group (yrs)	No	%
10-20	2	4%
21-30	10	20%
31-40	16	32%
41-50	15	30%
51-60	5	10%
61-70	2	4%

Table-III
Indication of surgery

Indication	No	%
Solitary nodule	10	20%
Multinodular goitre	23	46%
Diffuse goitre	5	10%
Papillary carcinoma	10	20%
Follicular carcinoma	2	4%

Table-IV
Type of surgery (n=50)

Type	No	%
Lobectomy	10	20%
Hemithyroidectomy	20	40%
Subtotal thyroidectomy	7	14%
Near total thyroidectomy	3	6%
Total thyroidectomy	8	16%
Total thyroidectomy with neck dissection	2	4%

Table-V
Complications observed

Complication	No	%
Excessive haemorrhage	2	4%
Post-operative haematoma	3	6%
One sided RLN injury	2	4%
Bilateral RLN injury	1	2%
Post operative tetany	3	6%
Post operative infection of wound	2	4%
Injury to trachea	2	4%
Total complications	15	30%

Discussion

In one and half year period time 50 patients were undergone thyroid surgery in our department. All the patients were investigated according to thyroid profile and for general anaesthesia. Historically thyroid surgery has been the domain of the general surgeons. Otolaryngology became a designated speciality in 1948 and over the last 20 years more and more ENT surgeons have been undertaking thyroid surgery. The arguments for including otolaryngologists in the practice of thyroid surgery are that they have been treating head neck cancers and are often involved in multidisciplinary head & neck team work, airway management, voice assessment and the treatment of cervical lymph nodes[2]. In our thyroid surgeries- we faced some of complications as occurs usually after thyroid surgery. They are haemorrhage, injury to recurrent laryngeal nerve one or both side, injury to trachea and post operative transient hypocalcaemic tetany. We experienced a 50 year lady with bilateral recurrent laryngeal nerve palsy with immediate post operative stridor after extubation. We managed her with emergency tracheostomy. But after 2 weeks surprisingly one of the vocal cord starts moving and lastly we closed the tracheostome & patient could breath normally. Thyroid surgery for cancer patients were managed as per schedule. Patients have a right to informed consent and the surgeon performing the operation should take the consent, inform them of the haemorrhage, nerve palsy, voice change, bleeding, hypoparathyroidism and a skin scar and be in a position to provide them not only with their own figures but also those in the world literature.

In conclusion, 'Thyroid surgery- the domain of whom?' the answer is: It is not your background that is

important. It is your training and expertise together with the environment you work in, that the matter. It is our firm belief that otolaryngologists now have a substantial established role in the management of thyroid disease and will continue to contribute more and more to the management of this fascinating disease. Also it is likely in the future that ENT and general surgery will work together in multidisciplinary team and this can only improve the way we diagnose, stage and treat thyroid cancer[3].

References

1. Watkinson JC, Gaze MN and Wilson JA. Tumours of the thyroid and parathyroid glands. Stell and Maran's Head-Neck surgery, 4th ed. New York, Butterworth Heinemann, 2000; 461.
2. Ramsdan J and Watkinson JC. Scott-Brown's otorhinolaryngology, head-neck surgery; vol-2, 7th ed. 2008, New York, Edward Arnold. pp. 2702-10.
3. Schwartz A. Thyroid surgery: who should do it? How should it be done? Thyroid 2005; 15: 185-7.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Treatment of lower ureteric stone by extracorporeal shock wave lithotripsy (ESWL) - preliminary experience.

Promode Ranjan Singh[1], Pranashish Saha[2] and Md. Masudur Rahman Mollah[3]

Abstract

This prospective study was carried out in the department of Urology, Sylhet M.A.G. Osmani Medical College & Hospital, Sylhet from 01/07/07 to 31/07/09. A total of 88 cases of lower ureteric stones were selected for treatment with extracorporeal shock wave lithotripsy (ESWL) as per selection criteria. Pre ESWL evaluation was done for all patients which included total blood count, serum creatinine, fasting blood sugar and blood sugar 2 hours after breakfast, coagulation profile, routine urine examination and urine culture and sensitivity test, ultrasonography of kidney ureter and urinary bladder region with post void urine volume and intravenous urography (IVU) in all cases. Electrocardiography (ECG) and X-ray chest postero-anterior view were also done. Pre ESWL urine was sterile in all cases. ESWL monotherapy with Siemens Lithoskop (3rd generation) lithotripter was used to treat lower ureteric stone. Average number of shock was 3330; mean E-max was 3.8. All post ESWL complications were managed conservatively. Patients were followed up for three months. Statistical analysis was done using SPSS WIN 7.5.1 versions as well as manually. Probability (P) value <0.05 were considered as significant.

In this study 71.59% of patients were male and 28.41% were female and mean +/- SD of age were 35.25 + /-11.68. The stone size was 7-20mm (mean 11.23 +/-1.82 mm). The ratio of involvement of right to left ureter was 1:1.14(41:47). The post-ESWL loin pain, fever, haematuria and lower urinary tract symptoms (LUTS) were 62.5%, 8%, 70% and 34% respectively. The mean post procedure hospital stay was 1.42 +/- 0.62 days. In this study 5(5.68%) patents failed to clear stones after maximum of 3 sessions of ESWL. Of these 5 patients 3 cases were treated with Uretero-renoscopy and retrieval of stones with Dormia Basket and 2 cases required Uretero-renoscopy and intracorporeal pneumatic lithotripsy (URS+ICPL). The stone free rate was 94.32% after 3 months of follow-up.

The study revealed the effectiveness of extracorporeal shock wave lithotripsy (ESWL) in the treatment of lower ureteric stone

[OMTAJ 2009; 8(2)]

Introduction

Urolithiasis has been affecting humankind since antiquity with the earliest recorded example being detected in Egyptian mummies in 4800 B.C.[1] Urinary stone disease is a common urological problem throughout the world including Bangladesh.[1,2,3] Management of urological stone disease is a problem in both surgical and medical practice. Urinary stone management may be invasive i.e. open surgical treatment or least invasive ESWL therapy, minimal invasive percutaneous nephrolithotomy (PCNL) and uretero-renoscopy (URS) are in between the two extreme treatment options. Three months stone free rate were 91% after in situ ESWL and it is safe and effective for ureteric calculi not more than 1.5 cm in diameter. It neither affects female fertility nor has teratogenic risk. The non-invasive nature, requirement of minimal or no anesthesia and high level of patient acceptance have made ESWL a preferred treatment for the majority of symptomatic renal calculi requiring intervention.[4]

1. Assistant Professor, Department of Urology, Sylhet MAG. Osmani Medical College, Sylhet.
2. Assistant Professor (C.C) of Urology, Sylhet M.A.G. Osmani Medical College, Sylhet.
3. Indoor Medical Officer, Department of Surgery, Sylhet M.A.G. Osmani Medical College Hospital, Sylhet.

Materials and Methods

This is a prospective study carried out in the department of urology, Sylhet M.A.G. Osmani Medical College & Hospital, Sylhet. Patients attending the hospital were selected according to selection and exclusion criteria included in this study. A total of eighty eight patients with lower ureteric stones were treated with ESWL. The selection criteria were: a) stone less than or equal to 20 mm size, b) no distal obstruction, c) sterile urine and d) unilateral lower ureteric stone. The exclusion criteria were- bladder outflow obstruction, UTI, pregnant women, history of lower abdominal surgery, coagulation disorder and multiple ureteric stone and associated renal stone. Relevant ethical aspects were covered and an informed written consent was taken from each patient. Detailed history and findings of clinical examinations were recorded in a pre-designed form.

A pre-ESWL evaluation was done for all patients, which included total blood count, S. creatinine, fasting blood sugar and blood sugar 2 hours after breakfast, coagulation profile, routine urine examination and urine culture and sensitivity, USG of kidney ureter and bladder region with post void residue and intravenous urography (IVU). ECG and X-ray chest P/A view were also done. Pre-ESWL urine was sterile in all cases.

ESWL Procedure:

Patients were instructed to take mild laxative for a night with ultra carbon tablet. Stones below sacro-iliac joint down to urinary bladder were selected as lower ureteric stones. All the patients were overnight fasting and were given intravenous fluid with diclofenac sodium suppository half an hour prior to procedure. ESWL monotherapy with Siemens Lithoskop (3rd Generation) lithotripter was used to treat 88 lower ureteric calculi. Average number of shock wave was 3330 for all level with mean Emax 3.8. All patients were given intravenous analgesia and sedation and were under antibiotic cover during the procedure. The patients were discharged from the department day after the procedure if no post operative complications were noted. The patients were advised to come after 7 days with a plain x-ray KUB region 100% digital. A second, some times a third session of ESWL was given at one week interval if needed. If the stones were failed to be cleared off even after 3rd session of ESWL, the patients were observed up to 90 days to see total stone clearance. Statistical analysis was done using SPSS WIN 7.5.1 versions as well as manually. Probability value (P) < 0.05 was considered as significant.

Results

In this study 71.59% of patients were male and 28.41% were female and the mean +/- SD age were 35.25 +/- 11.68. The mean stone size in mm +/- SD was 11.23 +/- 1.82, minimum size 7mm and maximum size 20 mm. The ratio of involvement of right to left ureter 1:1.14. The post procedure loin pain, fever and haematuria, lower urinary tract symptoms LUTS) were 62.5%, 8%, 70% and 34% respectively. The mean post procedure hospital stay was 1.42+/-0.62 days. In this study 5(5.68%) failed to clear stones after maximum of 3 session of ESWL. Of this 5 patients 3 cases were treated with URS (ureterorenoscopy) and retrieval of stones with Dormia basket alone and 2 cases required ureterorenoscopy with intracorporeal pneumatic lithotripsy (URS+ICPL). The stone free rate was 94.32% three months after follow up.

Table-1:

Post procedure morbidity	Present	Absent
Loin pain	55 (62.5%)	33 (37.5%)
Fever	8 (7.04%)	80 (92.96%)
Haematuria	70 (61.60%)	30 (38.40%)
LUTS	34 (29.92)	54 (70.08%)

Table-II:

Stone No	Side		Average stone size	Re-treatment	Average shock	Mean KV	Clearance (%)
	Rt.	Lt.					
88	41	47	11.23	39.77%	3330	3.8	94.32

Discussion

Recently ESWL has been regarded as the first line treatment for most urinary stones requiring intervention therapy. Urinary stone disease is the third most common problem in urological practice. In Bangladesh it is more common in northern part of the country affecting predominantly male over female with a ratio of 3:1.[3] The objective of this study was to determine the effectiveness of treatment for lower ureteric stone by ESWL in the perspective of Bangladesh. So that maximum service can be given with minimum bed occupation time with minimum post operative complications. In this study there was no significant difference in age (P>0.05) in comparison with a few studies carried out in Bangladesh. [2, 5.] but the mean age in this study was lower than other

studies carried out in other studies[6, 7]. So, relatively younger patients develop stone diseases in Bangladesh. Dietary habit and hot weather might have some influence in formation of stones in urinary tract at an earlier age in our country. In this study, the male (63): female (25) was 2.52:1. This result agrees well with reports [6, 8] where it was between 1.3:1 to 2.3:1. On the contrary, the male to female ratio was reported 3.47:1 and 4.13:1 in other studies [5, 9]. There was no significant difference (P>0.05) of involved side of ureter and size of stones between the two groups in this study. The mean size of stone in this study was 11.23 mm which is larger than those in other study [10] where the size was reported to be 9.9mm. Though the pre procedure urine was sterile and prophylactic antibiotic was given to all patients, 29.92% patients developed LUTS and persisted for 3-5 days.

In this study post procedure loin pain was present only for 1-3 days. The post procedure haematuria was microscopic to macroscopic. All the patients with haematuria were managed conservatively. Post procedure fever was significantly less (P>0.001) which was 7.04%. The patients were declared stone free when a plain x-ray KUB 100% digital shows no radio opaque shadow. On post-procedure day 90, no stones were found in 94.32% of patients. In this study (5.68%) of patients failed to clear stones after maximum 3 sessions of ESWL. Of these 5 patients 3 patients were treated with URS plus retrieval of stone with Dormia basket alone and 2 patients required ureteroronoscopy plus intracorporeal pneumatic lithotripsy (retrieval rate 39.77%). In a study it was shown that 88.67% of lower ureteric stones were cleared by ESWL, rest were (11.33%) treated with ureteroronoscopy and open operation. Retreatment rate was 35.38%[10]. Recent report states that URS+ICPL can be performed for lower ureteric stone as an anaesthesia free day case procedure but post procedure hospital say is longer[11]. ESWL is done by anaesthesia free day care basis. Due to less hospital stay and less morbidity in ESWL, it is apparently more cost effective than other procedure.

In conclusion, after analysis of data it is found that ESWL is safer and effective method having minimum post procedure complications. As ESWL can be done as day case basis, it can help reduce the patient load in indoor department. Based on these observations it may be concluded that ESWL may be the first line of treatment option for lower ureteric stone in selected group of patients.

References

1. Menon. M. Parkar B.G. and Drach G.W (1998), urinary Lithiasis: Etiology, Diagnosis and medical management. In: Cambell's Urology, Philadelphia;W. B. Sanders Company, 1998; pp 2662-2666.
2. Islam MF. Monaf MA. Akhtar MH. Ureterorenoscopy for distal ureteric stone: our initial experience. Bangladesh J Urol 2000; 3:44-6.
3. Salam MA. Principle and Practice of Urology. 1st Edition. Dhaka, MAS Publication,. 2002. p 21.
4. Chen R. N. and Stream S. B. Extracorporeal shock wave lithotripsy for lower pole calculi: long term radiographic and clinical outcome. J Urol 1996; 156: 1572-6.
5. Wahab MA, Alamgir MH, Ahmed I, Islam K, treatment of renal and ureteric stones by ESWL. Bangladesh J Urol 1994; 5 : 34-6.
6. Bierkens AF, Hendrikx AJM, Rosette JJMCH, Stultiens GNM, Beerlage HP. Treatment of lower and mid ureteric calculi: Extracorporeal Shock wave Lithotripsy vs. laser ureteroscopy. A comparison of morbidity and cost effectiveness. British J Urol 1997; 81:31-5.
7. Randal SA, Rittenberg MH, Bagley DH. Ureteropyeloscopic Removal of Ureteric Calculi. J urol 1987; 393: 1180-3.
8. Anderson KR, Keetch DW, Alhala DM, et al. optional therapy for the distal ureteric stone: Lithotripsy vs. Ureteroscopy. J urol 1993; 149: 200.
9. Shameem IA, Islam K, Salam MA, Wahab MA.. Management of ureteric stones by in situ ESWL. Bangladesh J Urol 2001; 4: 15-6.
10. MS Islam, S. Jahan, KH Salim, M Hossin, AKMA Islam, SAMG Kibria. Treatment of lower ureteric stones by ESWL. Journal of Urology. Vol.-10. January 2007, No-1. Page: 5-8.
11. Segma JW. Ureteroscopy for lower ureteric stones. Urology 1993; 42: 33-5.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Acute Scrotum in Childhood: Madina Experience

Ruhul Amin A.Hassan[1], MIF. Khan[2], Tarig I. Hummaida[1] and Djamal OuSlimane[1]

Abstarct

Acute scrotum (AS) is a common urological problem for children in emergency room (ER). Differential diagnoses include a long list of medical and surgical entities. Amongst the spectrum of surgical causes, testicular torsion (TT), torsion of testicular appendages (TTA), epididymo-orchitis (EO) and incarcerated hernia (IIH) were the 4 most common causes of AS in the present series. TT is an organ saving emergency; salvage depends upon the number of twists and time in hours elapsed from the onset of symptoms to surgical intervention. TTA is a self-limiting problem that resolves without any sequelae. TT & TTA, most of the times, is difficult to differentiate clinically from each other. EO, on the other hand, is rare; warrants further urological workup to rule out any structural or functional abnormality. In this retrospective study, 65 cases of AS were admitted in the sole pediatric surgical center in the western region of the Kingdom of Saudi Arabia over a period of 5 years. Four most common causes mentioned constituted 78.5% of the total number of AS: more than 87% of patients were operated on emergent list. There was high incidence of operative treatment for TTA. Dictum of ER to OR (operating room) on suspicion of TT may have contributed to this higher number of operation in TTA.

[OMTAJ 2009; 8(2)]

Introduction

Acute scrotum (AS) in childhood is a common cause of surgical consultation in emergency room (ER). An incidence of 0.13% of total ER visits has been documented (1). Torsion testis (TT) stands on the top of the list as the "most serious entity" where time is the crucial factor during the management. Torsion of appendix testis or other appendages (TTA), although difficult to differentiate from TT in most of the time, is a self-limiting disease without any sequelae. In other extreme, epididymitis warrants further work up to rule out precipitating congenital urinary anomaly. Other differential diagnoses in this series were complicated inguinal hernia, acute hydrocele, acute idiopathic scrotal edema (AISE), scrotal trauma, Henoch-Schonlein purpura (HSP), tumor, barium orchitis etc.

1. Consultant Pediatric Surgeon, Madina Maternity & Children Hospital, Madina. K.S.A
2. Senior Registrar, Department of Pediatric Surgery, Madina Maternity & Children Hospital, Madina. K.S.A

Materials & methods

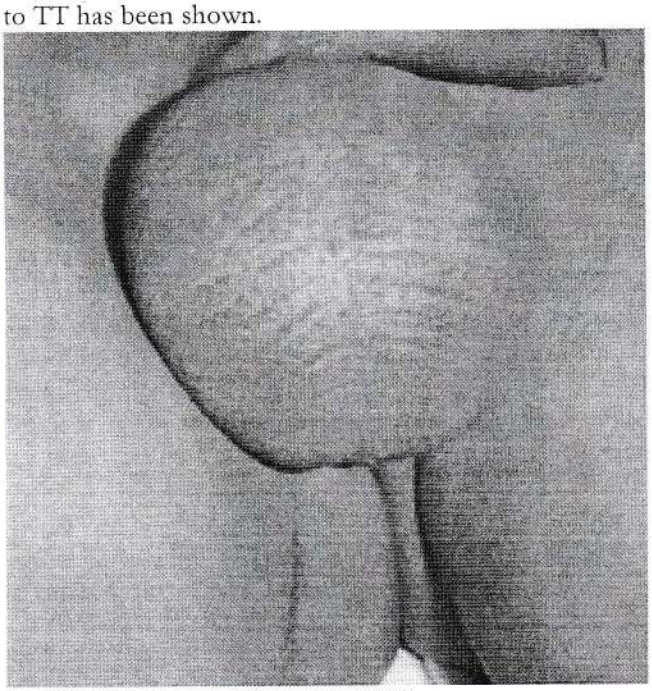
In this retrospective study, a total of 65 patients were admitted as cases of AS to our department of pediatric surgery in Madina Maternity & Children Hospital in the Kingdom of Saudi Arabia over a period 5 years (0ctober 1998 to September 2003) are analyzed. Age ranged from 0 day to 12 years. Demographic data is shown in Table 1. One preterm neonate had barium orchitis secondary to contrast perforation during lower gastrointestinal study. Total follow up period ranged from 1 – 6 years.

Results

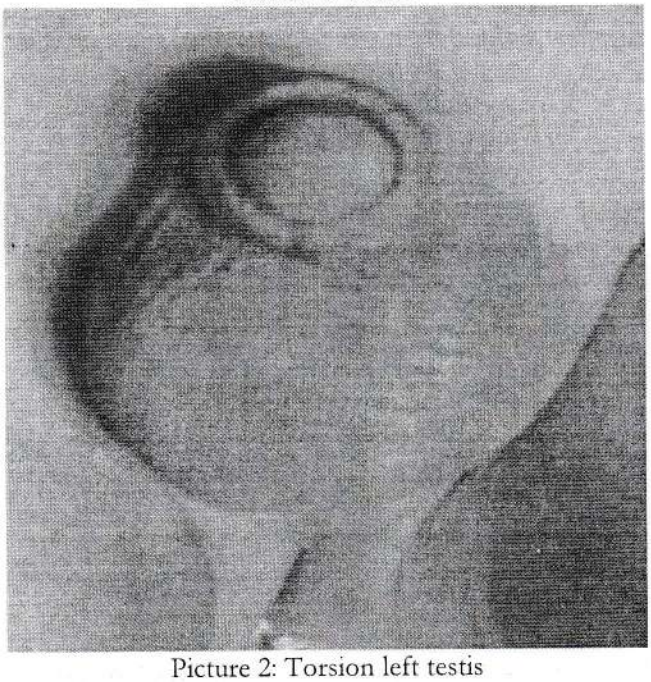
Out of 65 cases of AS, sixty was Saudi & 5 non-Saudi, 92.3% & 7.7% respectively. Fifty one children or 78.5% had four most common diagnoses: torsion testis 26 or 45.5%, torsion of testicular appendages 16 or 28%, epididymo-orchitis 6 or 9.23% & complicated inguinal hernia 3 (4.6%). In the group of torsion testis (TT), sixteen (61.5%) were torsion in scrotal testis (TST) and ten (38.5%) in undescended testis (TUDT). Fifty-seven (87.7%) patients were operated on emergent list and remaining 8 (12.3%) received conservative treatment. One TUDT had spontaneous detorsion which is included in conservative treatmnet group and another

boy with TST was discharged against medical advice by the parents. In the group of TST, average age was 42 months; symptoms duration of 40 hours and 6 patients had orchiectomy because of black testis. In other subgroup of TUDT, average age was 21 months; with duration of symptoms for 35 hours and 3 patients had orchiectomy.

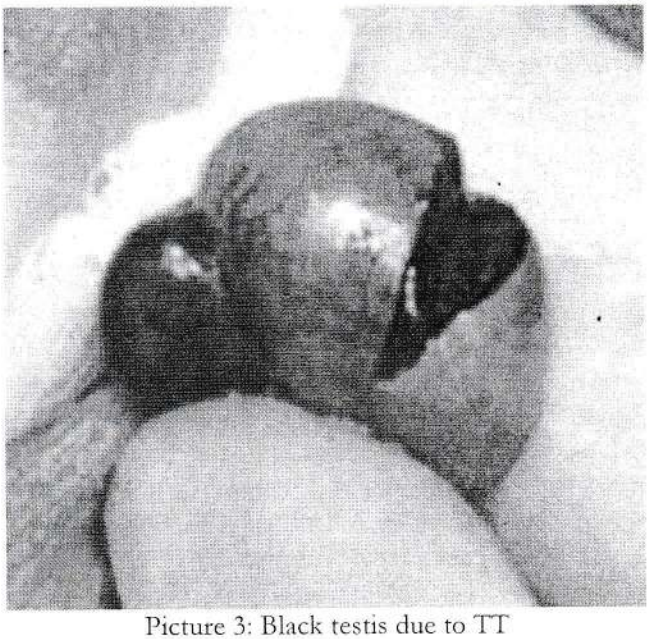
In pictures 1 a case of AISE, in picture 2 a case of torsion of testis and in picture 3 a case of black testis due to TT has been shown.



Picture 1: AISE



Picture 2: Torsion left testis



Picture 3: Black testis due to TT

Total number of cases 65 (n=100%)	*Differential diagnoses*	*Number of cases (% of total cases)*
Nationality Saudi 60 Non-Saudi 5	Operated group: Torsion of testis TST	26 (45.5%) 16 (61.5%) of TT 10 (38.5%) of TT
Operated 57 (87.6%)	TUDT Torsion of appendages	16 (28%) 6 (9.23%)
Not-operated 8 (12.3%)	(TTA)	3 (4.6%)
	Epididymo-orchitis (EO)	2 (3.5%) 1 (1.75%)
	Strangulated Inguinal Hernia	1 (1.75%)
	Trauma	2 (3.5%)
	Tumor	
	Hydrocele	
	Normal	

	Non-operated group:	2
	HSP	1
		1, spontaneous detorsion
	AISE	1
	TT	1, DAMA
	in UDT	1
	EO	
	TST	
	Barium-Orchitis	

Discussion

TT & TTA are the most common causes of AS in pediatric urology, presenting at ER. TT is an organ saving emergency where ER to OR is the usual dictum of our management protocol. Any diagnostic study may steal some crucial time from saving an involved gonad. Furthermore, TT poses danger to the contralateral uninvolved side in varieties of hypothetical mechanisms (2). A threat of metachronous torsion is the real risk to the contralateral gonad. Once the diagnosis of TT is made, a clear discussion with parent(s) is mandatory to get an informed consent signed for orchidectomy if indicated during exploration to avoid any medicolegal consequences. A plan of contralateral fixation of testis needs to be addressed in discussion and has to be planned & carried out as per surgeon's choice. Issues like future fertility & insertion of testicular prosthesis may have to be highlighted.

In our series, 2 out of 16 cases of TST were neonate. An average duration symptoms of 40 hours at presentation seems to be high. Age at presentation was 42 months. Our rate of orchiectomy was 34.6% where as Tryfonas et al (3) had only 15%. Testicular salvage is the prime goal in management of AS. This requires a high degree of diagnostic accuracy and prompt surgical intervention. Testicular salvage is only possible if surgical intervention done within hours of onset of pain. There is least chance of salvage when duration crosses 48 hours. Success rate is only 50% when it is between 6 to 48 hours (1).

However, many (as high as 68%) salvaged testis become atrophic (4). TT has two peak incidences, one in the neonatal period and the other at peripubertal age (3). Unilateral TT causes infertility in 25% of cases (2) and abnormal semen analysis has been reported in 40% to 60% cases (4).

TTA is a twist of a testicular or epididymal appendage; hydatid of Morgagni is the most common amongst them. Twisted appendix ends up in necrosis & resorption without any clinical sequelae or a need for further management. In our study, fifteen out of 16 cases (93.7%) of TTA had provisional diagnosis of TT and were explored to find torsions of appendages. In one study (1), incidence of TTA was 46%, we have 28%. The low incidence in our series may be explained by the age limit of 12 years for our hospital.

Most of the time, it is difficult to differentiate between TT & TTA which may challenge clinical craftsmanship. Good history and a skillful physical examination may help in diagnosis. TT presents with severe pain of short duration, inability to walk in a younger age group patients. They may have similar mild attacks of scrotal pain suggesting torsion-spontaneous detorsion. We had one such case in TT-UDT. Distorted epididymo-testicular anatomical orientation where testis lies in a high up position with absent cremesteric reflex and black discoloration on transillumination points towards TT.

In cases of TTA, a longer duration of symptoms in older age group boys with a bearable pain is the clue towards the history. A palpable firm tender nodule at one pole of testis/epididymis with blue or black dot sign(s) on examination favors the diagnosis of TTA. A non-steroidal anti-inflammatory agent, bed rest and/or restricted activities are sufficient treatment with complete resolution of symptoms in days.

Torsion in undescended testis (UDT) is a well-known phenomenon. In our study, we had 10 cases operated and 1 patient had spontaneous detorsion who was not operated in emergent list. Five of them were below the age of 1 year and another 3 were between 1 to 2 years. Johnson et al had reported an incidence up to 23% torsion in UDT (5). A painful & tender mass in the inguinal region in a known case of UDT is diagnostic of TT unless proved otherwise. In previously undiagnosed cases of UDT, an empty scrotum points towards the diagnosis of this entity.

Epididymitis usually leveled, as epididymo-orchitis is uncommon in pediatric age group. In our study, we had 6 cases (9.23%) out of 65 AS, an incidence of 35% have been reported (1). Epididymal tenderness along with normal size and anatomical orientation of testis-epididymis helps in differentiating from TT. Pus cells in urine analysis points towards epididymitis. Further urological work up has been warranted to find any precipitating cause. Lewis et al reported 39% of children with epididymis had precipitating structural or functional urogenital abnormalities amongst those investigated (1).

We had 3 cases of incarcerated/strangulated inguinal hernia managed as TT in UDT. In an undiagnosed case of UDT, similar symptoms & signs along with an empty scrotum points towards TT until proved otherwise. Other than the risk for the bowel, a complicated hernia may cause ischemia to the gonad from the prolonged compression of spermatic vessels that may end in atrophy.

Acute idiopathic scrotal edema (AISE) is a benign cause for AS, and was first reported by Qvist in 1956 (6). We have only one case in our study. Cases of AISE admitted to medical ward may be the cause for a solitary case in this group. In the largest modern series published in 1987, AISE has been cited as the second most common cause (30%) of AS (7). Painless, red-swollen scrotum of rapid onset is the usual presentation. Shiny edematous scrotal skin; non-tender gonad on palpation with normal anatomical orientation is the usual finding. Sometimes extension of edema to the surrounding areas may be noticed. Etiology of AISE is unknown, probably allergic in origin, perhaps a variant of angioneurotic edema (8). There is no consensus regarding treatment, which includes use of analgesia, NSAIDS, antihistamines or antibiotics etc (8). Treatment is dependant on clinical judgment and personal preferences. Reassurance, activity restriction, scrotal support, and close observation are the mainstay in the management. There is no need for further work up. In the differential diagnoses of AS, torsion of testis & testicular appendages, epididymo-orchitis and complicated inguinal herniae were the most common causes of presentation. Dictum of ER to OR may have an over estimation of torsion testis. In spite of difficulties in differentiating between TT & TTA, a careful history and physical examination may avoid surgery in some of the cases of appendicular torsion. An accurate diagnosis may end in medical management even without a surgical consultation. EO needs further work up to rule out associated structural or functional anomaly.

References

1. Lewis A, Bukowski TP, Jarvis PD, et al. Evaluation Acute Scrotum in the Emergency Department. J Pediatr Surg 1995; 30: 277-82.
2. Nguyen L, Lievano G, Ghosh L et al. Effect of Unilateral Testicular Torsion on Blood Flow and Histology of Contralateral Testi. J Ped Surg 1999; 34: 680-3,
3. Tryfonas G, Violaki A, Tsikopoulos et al. Late Postoperative Result in Males Treated for Testicular Torsion During Childhood. J Pediatr Surg 1994; 29: 553-6,
4. Krarup T: The Testis after Torsion: Br J Urol 1978; 50: 43-6.
5. Johnston J H: The Undescended Testis. Arch Dis Child 1965; 40: 113.
6. Qvist O: Swelling of the scrotum in infants and children, and nonspecific epididymis. A study of 158 cases. Acta Chir Scand 1956; 110:417-21.
7. Najmaldin A, Burge DM: Acute Idiopathic Scrotal Edema: Incidence, manifestations and etiology. Br J Surg 1987; 74:634-5.
8. Klin B, Lotan G, Efrati Y, et al. Acute Idiopathic Scrotal Edema in Children—Revisited. J Peditr Surg 2002; 37:1200-2.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Conservative Method In The Treatment Of Fracture Shaft Of Humerus In Adults By Functional Brace.

M.A. Gaffar[1], P.S.Shome[2], Qamrul Alam Saleh[3], Dipankar Nath Talukder[4].

Abstract

This is a prospective study to investigate the outcome of for conservative management of fracture shaft of humerus by functional brace. A total of 146 adult patients with simple close fracture who attended the Orthopaedic OPD and emergency, in Sylhet MAG Osmani Medical College Hospital and private clinics and private chamber were included in this study and treated with functional brace between July 2007 to Dec. 2008. According to union status & functional activities excellent, good, fair & poor results were 67.09%, 21.74%, 8.70% & 2.17% respectively._The results were mostly consistent with others study results published in literature. Functional Brace is simple, cost effective, patient's compliant and needs minimum care at home. Union and rehabilitation is earlier and there is no need of hospitalization.

[OMTAJ 2009; 8(2)]

Introduction

Humerus is a long bone connecting shoulder & elbow joints. Fracture shaft of humerus is not uncommon. Again it is the bone where it develops frequently non union & infection after operation.[9] Many varieties of methods exist in the treatment of fracture shaft of humerus each offering specific advantages & disadvantages.[12] The methods include Collar-Cuff sling with 'U'cast; Hanging cast; Shoulder spica; Abduction splint; Thomas's arm splint & Velpeau bandage. Results of treatment of the most of these cases satisfactory regarding union but there is considerable cases restriction of the shoulder & Elbow movements specially in older people. Sometimes union is also delayed few may lead to non-union.

Meterials and methods

This prospective study was done at Sylhet MAG Osmani Medical College hospital, private clinics and chamber between July 2007 to December 2008. All adult patients with close fracture shaft of humerus attended the Emergency or OPD at Sylhet MAG Osmani Medical College hospital, private clinics and chamber were randomly included in this study irrespective of sex difference. Pathological fractures, Open fractures, any Supracondylar or Surgical neck of humerus fractures and extensive abrasion over the injured arm were excluded in this study. In this series 146 patients with close humeral shaft fractures age range 25 to 70 years were treated with the functional brace. All patients are discharged and advised for follow up after one week. No anaesthesia was used.

The functional brace consists of 10 to 12 folds of plaster strip and three plaster straps of about one and half inch in breadth and length according to need of the patients arm length keeping elbow and shoulder joint completely free. Cotton pad was applied over the arm and plaster straps were applied in three position along the long axis. Usual position of the straps were antero-medial; postero-lateral and antero-lateral. It was kept in position by simple bandage and triangular sling was given so that the elbow was held at 90° flexion. All three straps are applied medially 2.5 cm below the axilla, 1.5 cm above the medial epicondyle and laterally just below the tip of the acromian. According to the displacement close manipulation was done in some cases without any anaesthesia. The straps and bandage were so applied that allowed full range of motion of the shoulder and elbow joints. All patients were instructed routinely to follow up at

1. Associate Professor, Department of Orthopaedic Surgery; North East Medical College.
2. Professor , Department of Orthopaedic Surgery; Sylhet M.A.G.Osmani Medical College.
3. Associate Professor ; Department of Orthopaedic Surgery, Sylhet M.A.G.Osmani Medical College.
4. Assistant Profesor Department of Orthopaedic Surgery, Sylhet M.A.G.Osmani Medical College.

regular fortnightly interval and if any discomfort or damage of the functional brace with a new check X-Ray.

The patients were encouraged to do active and passive motion exercises for all free joints of the fractured limb. Functional brace was removed when the fracture sites were clinically and radiologically united. The usual time of union occurred between 6 weeks to 21 weeks with a median of 8 weeks.

The end results achieved were broadly categorised according to the following criteria:-

Excellent:-

- Complete union of the fracture.
- No pain.
- Fully mobility of the elbow and shoulder joints.
- No impairment of functions.
- Normal length of the limb or less than 0.5 cm shortening.
- Normal alignment of fracture fragments.

Good:-

- Complete union of the fracture.
- No pain.
- No limitation of motion of the elbow and shoulder joints.
- No impairment of functions for ordinary purposes.
- Angulations not more than 5^0 -10^0.

Fair:-

- Complete union of fracture.
- Occasional mild pain.
- Limitation of movement of the elbow and shoulder joints less than 20%.
- Angulations not more than 10^0 - 15^0
- No impairment of functions for ordinary purposes.

Poor :-

- Non union.
- No pain.
- Limitation of shoulder and elbow movements 20^0 or more.
- Impairment of ordinary functions.
-

All patients with fracture shaft of humerus in these series united except five cases. Non-Union due to non co-operation of the patient and failure to maintain the Functional Brace properly. Other cases union took place more or less within normal time.

**The functional brace consists of 10 to 12 folds of plaster strip and three plaster straps of about one and half inch in breadth and length according to need of the patients arm length keeping elbow and shoulder joint completely free and hang in a tri-angular sling.

Results

In these series , the results were evaluated on the basis of both clinical and radiological findings. The following factors were closely correlated in the final analysis of the results:-

1. Clinical Factors:-

(a) Range of movement of the shoulder and elbow joints.
(b) Functional ability.
(c) Normal length of the limb.
(d) Complications.

2. Radiological Factors:-

(a) Normal alignment.
(b)Complete union of fracture.
(c)Residual deformity.

According to the above criteria **Excellent** result was found 31 cases (61.39%); **Good** results in 10 cases (21.74%) ; **Fair** results in 4 cases (8.70%) and **Poor** result in 1 cases (2.17%).

Table -1.

Comparison of the End results between the present series and other series[5]

Results	Present Series		Other Series[5]	
	No. Cases	Percent	No. Cases	Percent
Excellent	31	67.39	87	81.30
Good	10	21.74	13	12.20
Fair	4	8.70	4	3.70
Poor	1	2.17	3	2.80

Among the 46 cases in the present series 31 (67.39%) cases were excellent and that of the other series [5] out of 107 cases 87 (81.03%) were excellent. There was significant of difference between two series.

Table-2

Showing 'Proportion test' for the excellent end result of treatment of present series and other series[5]

End result	Present Series	Other Series[5]
Excellent	67.39	81.30
Z = 6.03	P < 0.001	Highly significant

Among the 46 cases in the present series 10 (21.74%) cases were good and that of the other series [5] out of 107 cases 13 (12.20%) were good. There was significant of difference between two series.

Table—3

Showing 'Proportion test' for the good end result of treatment of present series and other series[5]

End result	Present Series	Other Series[5]
Good	21.74	12.20
Z = 8.90	P < 0.001	Highly significant

Among the 46 cases in the present series 4 (8.70%) cases were fair and that of the other series [5] out of 107 cases 4 (3.70%) were excellent. There was no significant of difference between two series.

Table -4.

Showing 'Proportion test' for the fair end result of treatment of present series and other series[5]

End result	Present Series	Other Series[5]
Fair	8.70	2.70
Z = 1.10	P < 0.02	Not significant

Among the 46 cases in the present series 1 (2.17%) cases were poor and that of the other series [5] out of 107 cases 3 (2.80%) were poor. There was no significant of difference between two series.

Table—5

Showing 'Proportion test' for the poor end result of treatment of present series and other series[5]

End result	Present Series	Other Series[5]
Poor	2.17	2.80
Z = 0.13	P < 0.2	Not significant

Discussion

It is almost axiomatic in orthopaedic surgery that closed fractures of humeral shaft in adult are best treated by conservative measures with satisfactory outcome. Fracture shaft of the humerus usually do not constitute a major therapeutic problem (Cited by Sarmiento et al.)[17] Non surgical management of this fracture is preferred because non-union is rare, healing time is short, and infection is uncommon (Cited by Sarmiento et al.).[17] However, non surgical management is associated with some morbidity and undesirable sequlae.[6] Non –union is not a frequent complications but it does occur in 1 to 12 percent of fractures[18].

In this series, use of plaster moulded three straps cast, Bandage and triangular sling (Functional Brace) was followed for the treatment of close fracture shaft of humerus age range 25 years to 70 years. This method has many advantages. It is simple, safe and easy to apply. In this method the shoulder, elbow, wrist & finger joints are free, so early active movements can be given freely with in the triangular sling. Unlike hanging cast there is no chance of distraction at the fracture site due to proper application and maintenance of triangular sling. Patient can be discharged immediately after application of the Functional Brace. If the straps moulded properly according to the need, there is no angulation and deformity and if this is well padded with cotton, there was no chance of skin damage and distal oedema.

There were five patients (10.86%) developed sore in the axilla just above the 'U'-cast due to poorly application of 'U' cast initially at OPD. It is treated conservatively and improved. Nine patients developed distal oedema due to improper cotton padding and also tight bandage. Patients are reported within 24 hours of application of Functional brace. All removed reapplied properly. It is estimated that 5 to 10 percent patients with humeral shaft fracture demonstrate radial nerve involvement.[1] Most radial nerve injuries are the results of stretching or bruising and were incomplete. Recovery occurred within days or months. Stewart[4] feels that exploration of the nerve to determine the severity of the injury is indicated only in open fracture.

In this series two cases had radial nerve injury. Both are treated conservatively by dynamic splint in addition to functional brace. Complete recovered within 16 weeks. Non union and delayed union of the fractures occurred in transverse fractures due to minimal contact of fracture fragments. Distraction of fractures and interposition of soft tissues also a significant factors .[1] Treatment should be continued for at least four months before the surgeon decides that a delayed union leading to frank non-union(Cited by Charles).[3]

Clinical course had shown that perfect anatomical reduction was not essential for perfect functional recovery in fracture shaft humerus.[17] Mal-position of the fracture ends sometimes were hidden by the muscle bulks of the arm.The end results of management of fracture shaft of the humerus in the present series were comparable with other nseries[5] treated conservatively.

In conclusion, it was the experimental observation that rigid immobilization of fracture fragments, adjacent joints or both in fracture shaft of humerus is not a prerequisite for fracture healing.[13] Slight motion that inevitably tack place at the fracture site enhances fracture healing .[8] Functional activities which was maintained during the reparative process results in large periosteal callus of greater mechanical strength than the

callus of similar fractures treated by restricting the activity of the of the extremity.[13] With this method good results were obtained as evidenced by early union, proper alignment and length and finally good functional activities. It is very simple method, cost effective and well accepted by the patient, patient's attendant can correct the position if there is loosening of triangular sling or Bandage. Needs minimum care at home and union is earlier.

References

1. Epps CH.. Fracture of the shaft of the humerus; In : Rockwood, 2005,vol 1, Page 564-84.
2. Bohler, L: The treatment of fractures. Supplementary volume. Network, Grune & Stratton, 2006.
3. DePalma, AF. The management of fractures and Dislocations. Philadelphia, W.B. Saunders, 2007.
4. Stewart, M.J. Fracture of the Humeral shaft. In: Adams, JP. ed.Current practice in Orthopaedic Surgery, St. Louis, Mosby, 2006.
5. Stewart M.J and Hundley JM. Fracture of the Humerus. A Comparative study in Methods of treatment. J Bone and Joint Surg 2005; 37: 681-92.
6. Sever JW. Non-union in fracture of the shaft of the Humerus. Report of five cases. J. Am Med Assn 2007; 104: 382-6.
7. Stewart MJ and Hundley JM. Fracture of the Humerus. A Comparative study in Methods of treatment. J Bone and Joint Surg 2006; 97 : 827-32.
8. Klinerman. L. Fracture of the shaft of the humerus. J. Bone and Joint Surg. 2006; 48:: 105-11.
9. Bholer L. Conservative treatment of fresh closed fractures of the shaft of Humerus . J trauma 2006; 5: 111-5.
10. Bholer L. The treatment of fractures , 4th English ed., Baltimore, Hey E.W, 2005.
11. Scientific Research Committee, Pennsylvania Orthopaedic Society. Fresh midshaft fractures of the humerus in adults. Penn Med J 1959; 62: 848.
12. Lockhart, R.D., Hamilton , G.F., and Fyfe, F.W. : Anatomy of the human body, 2nd Ed. London, Faber limited pp. 84-6.
13. Augusto S. A functional Below the knee brace for tibial fractures. A report on its ues in one hundred thirty five cases . J Bone and Joint Surg. 2007; 52 :295-311.
14. Last RJ. Anatomy , Regional and Applied , 7th ed , Churchill- Living Stone, London, pp. 116.
15. Gray H . Gray's Anatomy ,LOndon, Longmans, 35th Ed, pp. 329.
16. Trueta. J. The role of the vessels in Osteogenesis. J Bone and Joint Surg 2003; 45 :402 – 17.
17. Laing PG. The arterial supply of the adult humerus. J. Bone and Joint Surg 1963; 38 1105 – 16.
18. Coolbaugh CC. Effects of reduced blood supply on the bone. Am J Physiol 1952; 169: 26.
19. Watson RJ. Fractures and joints injuries. 4th ed. London: E & S .Living stone 2008.
20. Turek SL. Orthopaedics, principles and their application. Philadelphia, Lippincott 2008.
21. Carrol SC. A study of the nutrient foramina of the humeral diaphysis. J Bone Joint Surg 1963; 54: 179- 81.
22. Hollinshead WH. Anatomy for Surgeons. Vol.-III, New York, Hoeber- Herper. 1958,
23. Klenerman L. Experimental fractures of the adult humerus. Med Biol Eng 1969; 7 : 357.
24. Wilson, N.F. : The close treatment of fractures. In : Watson Jones. Fracture and Joint injuries. London, Charchill Livingstone, 6th ed. 1982, pp. 280 – 305.
25. Sarmiento A., Kinman PB et al. Functional bracing of fractures of the shaft of humerus. J Bone Joint Surg 1977; 59: 578- 601.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

A comparative study between mirtazapine and amitriptyline in the treatment of major depressive disorder.

Md.Ansar khan[1], AKM Mosharrof Hossain[2], Md. Rezaul Karim[3], Md.Fakhruzzaman Shaheed[4] and Begum Luthfun Naher[5]

Abstract:

A prospective randomized clinical study was carried out to compare the effects of amitriptyline and mirtazapine on 100 patients attended in the Psychiatry out patient department of Sylhet MAG Osmani Medical College Hospital diagnosed as major depressive disorder by DSM-IV criteria and Hamilton Depression Rating Scale score > 17 .

The two study groups were matched in respect to age, sex, body weight, past episodes of depression and 17-item HDRS scores. Each of the two study group received either mirtazapine 15 mg or 50 mg amitriptyline at single dose daily for 6 weeks. Changes in 17-item HDRS scores, anxiety score, sleep disturbance score ,melancholia score were estimated before administration of amitriptyline and mirtazapine and after 3 and 6 weeks of administration.

The study demonstrated that the mean 17-item HDRS score reduced progressively up to the endpoint of the study, but the reduction was marked in first 3 weeks ($p < 0.001$).

The mean anxiety scores in mirtazapine and amitriptyline groups sharply reduced at the end of week 3 and week 6. Although both group showed significant improvement , the mirtazapine group responded substantially better than amitriptyline counterpart. The mean sleep disturbance scores were significantly reduced in either group ($p < 0.001$) with no significant difference between groups ($p > 0.05$). Feeling of melancholia in both mirtazapine and amitriptyline groups responded to treatment, but the response was appreciably better in the former group than the latter group ($p < 0.001$). Of the adverse events experienced by the patients, anticholinergic symptoms like dry mouth, constipation, and abnormal vision were significantly higher in the amitriptyline group than those in the mirtazapine group ($p < 0.001$, $p = 0.040$ and $p= 0.020$ respectively). Nausea was significantly more frequent in the amitriptyline group than that in the mirtazapine group ($p = 0.049$). Bitter taste and tremor was significantly higher in the amitriptyline group than those in the mirtazapine group ($p <0.034$ and $p < 0.01$ respectively). The weight gain was higher in the mirtazapine group compared to the amitriptyline group.

The study suggests that mirtazapine is comparable to amitriptyline in treating patients with moderate to severe depressive disorders and exhibited a higher safety profile as well.

[OMTAJ 2009; 8(2)]

1. Lecturer, Department of Pharmacology, MAG Osmani Medical College, Sylhet
2. Professor, Department of Pharmacology, MAG Osmani Medical College, Sylhet
3. Professor, Department of Psychiatry, MAG Osmani Medical College, Sylhet
4. Assistant Registrar, Department of Psychiatry, MAG Osmani Medical College Hospital, Sylhet.
5. Assistant Professor, Department of Pharmacology, MAG Osmani Medical College, Sylhet

Introduction

Major depressive disorders is a recurrent episodes of depression ,is considered if any individual presents with depressed mood, negative thinking, lack of enjoyment, reduced energy, slowness and a change from previous functioning for more than 2 weeks period [1].

10-30% of persons with a major depressive episode recover incompletely and have persistent, residual depressive symptoms. Effective treatment of depression may improve the outcome and lower the risk of suicide[2]. There are several options for treatment of major depressive disorder. Clinical trials have shown little difference in efficacy or tolerability among various available selective

serotonergic reuptake inhibitors (SSRIs) or between SSRIs and other classes of antidepressants [3,4].

Before 1980, antidepressant treatment consisted primarily of the tricyclics, monoamine oxidase inhibitors, and lithium. The antidepressant properties of these medications are attributed to modulation of noradrenergic and serotonergic function, but they also have many side-effects due to binding to multiple unrelated receptors [5]. In the late 1980s, an important new class of antidepressant was introduced, the serotonin reuptake inhibitors. This class has become a mainstay of antidepressant treatment because of substantial advantages over the tricyclics and monoamine oxidase inhibitors in safety, tolerability, and ease of dosing[5].

Studies suggest that serotonin reuptake inhibitors are therapeutically equivalent to the tricyclics and monoamine oxidase inhibitors, the data are controversial. The serotonin reuptake inhibitors have certain limitations, especially response failure in many of those most severely affected [5]. In addition, many patients discontinue treatment because of side-effects such as gastrointestinal complaints, nervousness and agitation, sexual dysfunction, and weight gain with long-term use.

Mirtazapine is new member of the major antidepressants, offering equivalent or even better efficacy while improving many of undesirable side-effects of the earlier classes. Mirtazapine is a noradrenergic and specific serotonergic antidepressant (NaSSA)[5]. This new antidepressant has a unique and specific mechanism of action on both the noradrenergic and serotonergic (5-HT) neurotransmitter systems [6].

Aim and objective of this present study was to compare the efficacy and tolerability of amitriptyline and mirtazapine in the treatment of major depressive disorder using Hamilton Depression Rating Scale and DSM –IV criteria .

Meterials and methods

A prospective randomized clinical trial was carried out to conduct a comparative study between mirtazapine and amitriptyline in the treatment of moderate to severe major depressive disorder. The subjects attended in the Psychiatry out patient department of , Sylhet MAG Osmani Medical College Hospital diagnosed as major depressive disorder were the study population from which 100 samples were selected considering the inclusion and exclusion criteria.

Male and female patients of age more than 18 years diagnosed as moderate to sev re depressive disorder by DSM-IV criteria and severity assessed by Hamilton Depression Rating Scale score > 17.

A total of 100 subjects who met the enrollment criteria were purposively randomized to two study group .

One group was assigned to receive mirtazapine 15mg daily for 6 weeks (mirtazapine group), while the other was assigned to receive amitriptyline 50mg (amitriptyline group). In this way every alternate patient received either mirtazapine or amitriptyline.

The efficacy or outcome variables studied were changes in 17-item HDRS score, factors score like anxiety, sleep disturbance, and melancholia, and subjective evaluation of treatment outcome based on DSM-IV criteria. The safety of the drug was assessed in terms of adverse events encountered during the course of treatment.

Specified diagnostic criteria [7] are provided for each specific mental disorder. These criteria include a list of features that must be present for the diagnosis to be made. Such criteria increase the reliability of the process of diagnosis.

The mental state examination is the description of patient's appearance, speech, mood and thoughts during the interview. Even when a patient is mute, incoherent or refuses to answer questions, the clinician can obtain a wealth of information through careful observation.

Data were processed and analysed using soft-ware SPSS for windows, version 11.5. Data presented on categorical scale were compared between groups with the help of Chi-square (χ^2) or Fisher's Exact Probabilty Test. Quantitative data were compared between groups using Student's t-Test. Repeated observations were compared between groups using repeated ANOVA statistics. For all analytical tests the level of significance were set at 0.05 and $p < 0.05$ was considered significant.

Ethical permission was obtained from the authority for Sylhet MAG Osmani Medical College Hospital to undertake the present study.

Of the 100 subjects enrolled in the study, 16 (5 from Mirtazapine group and 11 from Amitriptyline group) withdrew prematurely from the studies leaving 84 (45 in Mirtazapine group and 39 in Amitriptyline group) for final analysis. Therefore, all the analyses, were performed on 84 patients. Clinical examinations were performed at entry (0 week), at the end of 3 and 6 wks. Outcome was measured in terms of efficacy and safety before administration , 3 and 6 weeks after initiation of treatment . The efficacy was measured in terms of change in 17-item HDRS score from their baseline status and change in factor scores.

Results

There was no significant difference between Mirtazapine and Amitriptyline groups in terms of mean age of the subjects (40 ± 7.3 vs. 41.0 ± 6.2 years, t = - 0.932, p = 0.354). The groups were almost identical in terms of sex distribution (χ^2 = 0.063, p = 0.802). The two treatment groups were also well-matched with respect to other baseline characteristics like body weight, past episodes of depression and 17-item HDRS scores (t = - 0.369, p = 0.719; χ^2 = 0.350, p = 0.554 and t = - 0.925, p = 0.358 respectively).

Table I. Comparison of baseline characteristics before initiation of drug treatment in study groups.

Variables	Group	
	Amitriptyline (n = 39)	Mirtazapine (n = 45)
Age (Mean ± SD)	41.0 ± 6.2	40 ± 7.3^{ns}
Sex		
Male	18(46.1%)	22(48.9%)^{ns}
Female	21(53.9%)	23(51.1%)^{ns}
Weight (kg)	59.1 ± 9.4	58.4 ± 8.3^{ns}
Past episodes of depression		
Present	14(35.9%)	19(42.2%)
Absent	25(64.1%)	26(57.8%)
17-item HDRS score	23.97 ±2.43	23.62 ±2.699^{ns}

ns- not significant

Figures in the parenthesis denote corresponding percentage.

The HDRS score in the amitriptyline treated group at the initiation of treatment was 23.97 ± 2.43. which declined to 13.33 ± 1.978 after 3 wks of treatment and to 12± 1.37 after 6wks (Table II). ANOVA shows a significant decrease in HDRS in the course of 6 weeks of treatment (F=303.87; P<0.001).

Decline in HDRS score was more marked after 3 weeks (t=48.625; p<0.001) compared to after 6wks of treatment (t=38.024; p<0.001).

In the Mirtazapine treated group the HDRS (Mean ± SD) at base line was 23.62± 2.699 ; 3wks and 6wks after administration of the drug the score decreased to 14.98± 1.84 and 13.1± 1.84 respectively. The ANOVA showed significant decrease of HDRS (F=429.65; P<0.001) in the mirtazapine group.

After 3wks mirtazapine lowered HDRS significantly (t=27.599; p<0.001) and a further reduction was observe after 6wks (t=31.51; p<0.001). No substantial difference in the score was observe at 3 and 6 wks in this treated group (t =7.09; p=0.05).

Before initiation of treatment the base line HDRS of either group was same (t=.624; p=0.534). 3wks after administration of drugs, Mirtazapine showed significantly better effect as compared to Amitriptyline (t=3.94; p<0.01).

Table II : Changes in 17-item HDRS score, Anxiety score , Sleep disturbance score , Melancholia score estimated before (0 w) , after 3 weeks (3 w) and 6 weeks (6 w) of administration of either Amitriptyline 50 mg (Amitrip) or Mirtazapine 15 mg (Mirtaz) daily at single dose in Major depressive disorder.

Scores	Amitrip 0 w n=39	Amitrip 3 w n=39	Amitrip 6 w n=39	Mirtaz 0 w n=45	Mirtaz 3 w n=45	Mirtaz 6 w n=45
HDRS score	23.97 ± 2.43	13.33 ± 1.98*	12.00± 1.37*	23.62 ± 2.69	14.98± 1.84*	13.1± 1.84*
Anxiety score	8.49 ± 1.37	5.49± 1.37*	3.38± 1.04	8.42 ± .94	6.31± 0.99*	4.18± 0.68*
Sleep disturbance score	3.92 ± 0.58	3.79± 0.52	2.54±0 .64*	4.02 ±0 .64	3.87 ± .61	2.84 ± 0.70
Melancholia score	12.62 ± .92	9.16± .70*	6.87± 0.76*	12.51 ±0.91	8.36± .87*	5.59± .78*

* Significance of differences at p < 0.001

The Anxiety score in the amitriptyline treated group before administration of drug was 8.49 ± 1.37, After 3 wks of treatment 5.49 ± 1.37 and after 6wks 3.38 ± 1.04 (Table III). Repeated ANOVA shows a significant decrease in Anxiety score in this treatment group (F=158.282; p<0.001).

After 3wks of treatment Anxiety score decreased significantly (t=35.09; p<0.001) and a further decreased was observed after 6wks of treatment (t=53.285; p<0.001). Fall of Anxiety score after 6wks as compared to 3wks was also marked (t=21.95; p<0.001).

In the Mirtazapine treated group the Anxiety score was 8.42 ± 0.941, while 3 and 6 wks after administration of the drug the score estimated as 6.31 ± 0.996 and 4.18 ± 0.684 respectively. The ANOVA showed significant decrease of Anxiety score (F=259.23; p<0.001).

After 3wks Mirtazapine lowered Anxiety score significantly (t=37.04; p<0.001) and a further reduction

was observed after 6wks (t=26.113; p<0.001). Substantial difference in the score was observed at 3 and 6 wks in this treated group (t =12.45; p< 0.001).

Before initiation of treatment the base line Anxiety score of either group was same (t=2.56; p=0.799). 3wks after administration of drugs, Mirtazapine showed significantly better effect as compared to Amitriptyline (t=4.175; p<0.001). After 6wks the effect of Mirtazapine on Anxiety score was also decrease significantly (t=3.176; p=0.02).

The mean Sleep disturbance score of Amitriptyline treated group at base line was 3.92 ± 0.58. After 3 and 6 wks of treatment 3.97 ± 0.52 and 2.52 ± 0.64 respectively (Table III). Repeated ANOVA shows a significant decreased of score in this treatment group (F=67.04; p<0.001).

After 3wks of treatment mean Sleep disturbance decreased significantly (t=0.533; p<0.133) and a further decreased was observed after 6wks of treatment (t=9.859; p<0.001). Fall of mean Sleep disturbance after 6wks as compared to 3wks was also marked (t=9.991; p<.001).

In the Mirtazapine treated group the mean Sleep disturbance at base line was 4.02 ± 0.69, 3 and 6 wks after administration of the drug the score was decreased to 3.87 ± 0.61 and 2.84 ± 0.7 respectively. The ANOVA showed significant decrease of mean Sleep disturbance (F=259.234; p<0.001) in course of 6 week treatment.

Before initiation of treatment the base line mean Sleep disturbance of either group was same (t=0.706; P=0.48). 3wks after administration of drugs, Mirtazapine showed no significant effect as compared to Amitriptyline (t=0.529; p=0.592). But after 6wks the effect of Mirtazapine on mean Sleep disturbance was more pronounced (t=2.079; p=0.042).

The Melancholia score in the amitriptyline treated group at base line was 12.62 ± 0.912, After 3 and 6 weeks of treatment was recorded as 9.16 ± 0.7 and 6.87 ± 0.757 respectively (Table II). Repeated ANOVA shows a significant decreased of score in this treatment group (F=596; p<0.001).

After 3wks of treatment Melancholia score decreased significantly (t=34.83; p<0.001) and a further decreased was observed after 6wks of treatment (t=61.51; p<0.001). Fall of Melancholia score after 6wks as compared to 3wks was also marked (t=17.664; p<0.001).

In the Mirtazapine treated group the mean Melancholia score was at base line was 12.51 ± 0.914, 3 and 6 wks after administration of the drug the score decreased to 8.34 ± 0.873 and 5.59 ± 0.785 respectively. The ANOVA showed significant decrease of Melancholia score (F=641.484; p<0.001).

After 3wks Mirtazapine lowered mean Melancholia score significantly (t=32.26; p<0.001) and a further reduction was observed after 6wks (t=32.978; p<0.001). Significant difference in the score was observed at 3 and 6 wks in this treated group (t =17.604; p<0.001).

Of the adverse events substantially experienced by the patients, anticholenergic symptoms higher in the amitriptyline group than those in the mirtazapine group (p < 0.001, p = 0.040 and p =0.020 respectively). Bitter taste and tremor also demonstrated more in the amitriptyline group than those in the mirtazapine group (p 0.034 and 0.01 respectively). However, increased appetite and weight gain were several times higher in the mirtazapine group compared to the amitriptyline group (p = 0.039 and p = 0.026 respectively).

To assess individual feeling at the end 6-weeks treatment, DSM-IV TR criteria were used which included 9 questions. Of the 9 criteria, with consequent increase or decrease in weight were significantly higher in the mirtazapine group (15.5%) than that in the amitrityline group (5.1%) (p = 0.041), while suicidal tendency or frequent thought of death were appreciably lower in the former than those in the latter group (4.4% vs. 20.5%, p = 0.006). A considerable proportion of patients of both groups did not have feeling of melancholia, lack of interest in day to day activities, insomnia or excessive sedation, feeling of tiredness or weakness, worthless feeling or undue feeling of committing sin and lack of concentration or indecision (Table III).

Table III. Assessment of subjective outcome according to DSM-IV TR criteria in major depressive patients treated with either amitriptyline or mirtazapine administered for 6 weeks

DSM-IV TR criteria	Group				p-value
	Mirtazapine (n = 45)		Amitriptyline (n = 39)		
	Yes	No	Yes	No	
Feeling of melancholia all day long*	17(37.7)	28(62.3)	16(41.1)	23(58.9)	0.349
Lack of interest in day to day activities*	18(40.0)	27(60.0)	14(35.9)	25(64.1)	0.840
Increased or	7(15.5)	38(84.5)	2(5.1)	37(94.9)	0.041[S]

decreased appetite or increase or decrease in weight#					
Insomnia or excessive sedation*	8(17.8)	37(82.2)	6(15.4)	33(84.6)	0.690
Mental anxiety or depression*	15(33.3)	30(67.7)	11(28.8)	28(71.2)	0.539
Feeling of tiredness or weakness*	8(17.8)	37(82.2)	7(17.9)	32(82.1)	0.573
Feeling himself/herself worthless or undue feeling of committing sin*	24(53.3)	21(46.7)	22(56.4)	17(43.6)	0.781
Lack of organized thoughts or concentration or indecision*	33(73.3)	13(26.7)	30(76.9)	9(23.1)	0.646
Frequent thought of death or suicidal tendency#	2(4.4)	43(95.6)	8(20.5)	31(79.5)	0.006S

Figures in the parentheses denote corresponding percentages.

Fisher's Exact Probability Test; * χ^2 Test; S-significant

Discussion

Most studies evaluating the efficacy of mirtazapine in course of its clinical development have used amitriptyline as the comparative agent. In the field of antidepressant, mirtazapine is a newer member. Amitrityline appears effective but gives rise to a number of side-effects which may lead to drug discontinuation. On the other hand, mirtazapine has so far been tested as an equally effective as amitrityline with high safety profile.

In our study, to compare the efficacy and safety of mirtazapine, we have also used amitriptyline as a comparator drug. The study demonstrated that the mean 17-item HDRS score reduced progressively both in mirtazapine and amitriptyline groups respectively at the end of week 3 and 6 respectively. While mirtazapine group experienced a further reduction of score to 12 at the end of week 6, the amitriptyline group did not do so in the next 3 weeks course. Both treatment groups experienced a significant reduction in 17-item HDRS score during 6-weeks treatment course, but the reduction is marked in 1st 3 weeks ($p < 0.001$), while it was relatively slow in the next 3 weeks. No significant difference was observed between the groups at the endpoint of treatment in terms of 17-item HDRS score ($p > 0.05$). HDRS response rates with mirtazapine and amitriptyline have been observed in a number of double-blind randomized 5 to 6-week comparisons in out-patients and hospitalized patients with moderate to severe major depression [8,9,10]. Mirtazapine and amitriptyline treatment have also improved the HDRS scores for depression-related symptoms, including anxiety and sleep disturbance, to a similar extent in the 2 trials that reported changes in these variables in younger adults[1,10].

The mean anxiety scores of mirtazapine and amitriptyline treated groups of the present study had sharply reduced at the endpoint of study. Both groups has suggested significant improvement following treatment, yet the mirtazapine treated group responded significantly better compared to amitriptyline treated group ($P<0.001$). During the initial 3 weeks of treatment, sleep was little disturbed. But from 3 weeks onwards the mean sleep disturbance scores were significantly reduced ($p < 0.001$), though the inter-group difference was not statistically significant ($p = 0.05$). Feeling of melancholia in both mirtazapine and amitriptyline groups responded to treatment, but the response was appreciably better in the former group compared to the latter group ($p < 0.001$). Stahl et al [11] demonstrated in a meta analysis that the reductions of the mean groups score of anxiety, sleep disturbance and melancholia factors score were significantly reduced from baseline to the endpoint of the treatment.

The efficacy of mirtazapine has been clearly established in placebo-controlled and comparative clinical trials performed in patients suffering moderate to severe depression treated as inpatients or outpatients. Mirtazapine proved superior to placebo [9,12] or trazodone[13], and had an equivalent efficacy to that of other commonly used tricyclic antidepressants such as amitriptyline [10]. In all these comparative studies, mirtazapine showed a more favourable side-effect profiles than the comparator drugs. A general indication of mirtazapine's

safety is the significantly lower percentage of patients (65%) who complained of any adverse clinical experiences compared with the placebo- (76%) or amitriptyline-treated (87%) groups. Moreover, a significantly higher percentage of amitriptyline-treated patients (9.1%) had withdrawn prematurely from the studies because of adverse events compared to mirtazapine- (4.9%) or placebo-treated patients (1.7%)[14]. But yet we have to further investigate its merits and demerits to know more about the drugs.

In the studies performed in elderly depressed patients and comparing mirtazapine with trazodone and placebo[15] or amitriptyline [16] no unexpected or additional safety problems were met thus favouring its use over amitriptyline and other comparators drugs. It was also observed from other studies that mirtazapine has an excellent safety profile in elderly patients as well.

Response rates did not reveal any significant difference between the groups. However, the percentage of premature withdrawals related to adverse events was significantly lower in the mirtazapine group than that in the amitriptyline group (10% vs. 22%, p = 0.05). The main reasons for study discontinuation in the mirtazapine group was lack of efficacy, whereas in the amitriptyline group adverse events were mainly responsible. In Sthal's study[11] a significantly less adverse event-related drop-out was observed in mirtazapine group compared to that in amitriptyline group thus bearing consistency with findings of our study (10% vs. 17%).

Anticholenergic symptoms like dry mouth, constipation were significantly higher in the amitriptyline treated group than those in the mirtazapine treated group ($p < 0.001$, $p = 0.040$ and 0.020 respectively). Of the typical SSRI symptoms (nausea, diarrhea, headache, insomnia and agitation), nausea was significantly more in the amitriptyline group than that in the mirtazapine group ($p = 0.049$). Bitter taste and tremor also demonstrated their significant presence in the amitriptyline group than those in the mirtazapine group ($p = 0.034$ and $= 0.01$ respectively). The weight gain were several times higher in the mirtazapine group compared to the amitriptyline group ($p = 0.039$ and $p = 0.026$ respectively).

The meta-analysis conducted by Sthal et al.[11] showed statistically significant difference in frequencies of antcholinergic symptoms between the treatment groups. In their study the amitriptyline-treated patients complained dry mouth, constipation and blurred vision significantly more than the mirtazapine-treated patients did. Tremor, vertigo and tachycardia also occurred with significantly higher frequency in amitriptyline treated patients than in mirtazapine treated patients. Occurrence of drowsiness and excessive sedation were nearly equal in both groups. Complaints of increased appetite and weight gain were more common in mirtazapine group than that in amitriptyline group. Thus the observations obtained from the present study consistent with those of Sthal et al.[11]

Kent [5] has reported mirtazapine to be as effective as amitriptyline in treating moderate to severe major depressed disorders. In a study of 251 hospitalized depressed patients, mirtazapine had demonstrated similar efficacy to amitriptyline. In all these comparative studies, mirtazapine had a more favourable side-effect profile compeered amitriptyline, and was found to be effective in elderly depressed patients, with response rates similar to those of amitriptyline [5].

In Kent's report the most common adverse events (over 10%) were somnolence, increased appetite, and weight gain [5]. Other common side-effects were dry mouth, constipation, and dizziness. He could not obtain mirtazapine to be associated with sexual dysfunction which is a major problem with the SSRIs [5]. As weight gain is a common problem of treatment with mirtazapine, long-term treatment with this drug may be an issue for patients who are already obese. However, in patients with depression associated weight loss, The mirtazapine may be used as an advantage in treatment for its weight gaining property.

It could be concluded that mirtazapine is comparable to amitriptyline in treating patients with moderate to severe depressive disorders. It has a higher safety profile as well. Both the drugs are effective in reducing 17-item HDRS score and the reduction is relatively faster in initial 3 weeks of treatment. Mirtazapine is well-tolerated and is not associated with either gastrointestinal or sexual dysfunction. Weight gain is frequently common in mirtazapine-treated patients which may jeopardize long-term compliance particularly in overweight and obese patients. Weight gain with Mirtazapine could be taken as an added advantage in the treatment of depression associated weight loss.

Further study is suggested to obtain better insight into comparative efficacy of mirtazapine in specific patient groups including the elderly depressed patients and those with severe depression.

References

1. Zivkov M and de Jongh GD. Org 3770 vs. amitriptyline: a 6-week randomis, ed double-blind multicentre trial in hospitalised patients. Human Psychopharmacol 1995; 10:173-80.
2. Gibbons RD, Hur K, Bhaumik DK, Mann JJ, The relationship between antidepressant medication use

and rate of suicide', Arch Gen Psychiatry2005;62:165-72.
3. Geddes JR, Freemantie N, Mason J, Eccles MP, Boynton J. SSRIs versus other antidepressants for depressive disorder. Cochrane Database Syst Rev 2000; 2:CD001851.
4. MacGillivray S, Arroll B, Hatcher S. Efficacy and tolerability of selective serotonin reuptake inhibitors compared with tri-cyclic antidepressants in depression treated in primary care: systematic review and meta-analysis. BMJ 2003; 326:1014.
5. Kent JM. SNaRIs, NaSSAs and NaRis: new agents for treatment of depression. Lancet 2000;355:911-8.
6. de Boer T, Nefkens F and Van Helvoirt A. The X2 adrenoceptor antagonist Org 3770 enhances serotonin transmission in vivo. Euro J Pharmacol 1994; 253:R5-R6.
7. Sadock BJ, Sadock VA. In : Kaplan and Sadock's Comprehensive Textbook of Psychiatry ;10th ed. 2007; Newyork, Lippincott Willias & Wilkins, .pp.1470
8. Smith WT, Glaudin V, Panagides J, Mirtazapine vs. apmitriptyline vs. Placebo in the treatment of major depressive disorder. Psychopharmacol Bull 1990; 26:191-6.
9. Claghorn JM & Lesen MD, A double-blind placebo controlled study of Org 3770 in depressed outpatients', J Affect Diorder1995; 34: 165-71.
10. Mullin J, Lodge A, Bennie, A multicentre, double-blind, amitriptylinecontrolled study in patients with major depression. J Psychopharmacol 1996; 10: 235-40.
11. Sthal S, Zivkov M, Reimitz PE. Meta-analysis of radomised double-blind, placebo-controlled, efficacy and safety of mirtazapine in major depression. Acta Psychiatr Scand1997; 96 Suppl:22-30.
12. Bremner JD. A double-blind comparison of Org3770, amitriptyline and placebo in major depression. J Clin Psychiatry 1995; 56: 519-26.
13. van Moffaert M, de Wilde J, Vereecken A, Mirtazapine is more effective than trazodone a controlled study in hospitalized patients with major depression, Int Clin Psychopharmacol 1995;10:3-11.
14. Montgomery SA.. Safety of mirtazapine; a review. Int Clin Pharmacol1995;10(suppl 4): 37-45.
15. Halikas JA, Org3770 (mirtazapine) versus trazodone: a placebo controlled trial in depressed elderly patients. Human Psychopharmacol 1995;10 (suppl 2): S125-S135.
16. 16.Hoyberg OJ, Maragakis B, Mullin J et al. A double blind multicentre comparison of mirtazapine and amitriptyline in elderly depressed patients. Acta Psychi-atrica Scandinavica 1996; 93:184-90.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Outcome of tubularized incised plate urethroplasty for proximal hypospadias.

Md. Shamsur Rahman[1] Md. Nurul Alam[2] & Ibrahim Khalil[3]

Abstract

Hypospadias is a very common congenital genito-urinary problem in male children. More than 300 techniques of repair are written in text book for hypospadias surgery and Tubularized incised plate urethroplasty (TIP) for proximal hypospadias is commonly practiced by many surgeons. In this study, 42 consecutive patients with midshaft to peno-scrotal hypospadias undergoing TIP repair by one surgeon were reviewed. Dorsal plication was used as necessary for penile straightening, to preserve the urethral plate. Plication was necessary only in 5 (11.9%) patients. The incised plate had a supple appearance in all but two boys .The mean follow up was 6 (2-18) months and included calibration of neo-urethra and inspection of neo-meatus in all patients. Complication were noted in 11 (26.19 %) boys of whom 10 (23.80%) boys developed small fistulae. One patients in whom the incised plate was insufficient preoperatively had dehiscence of the repair and needed redo operation. There were 3 (7.14 %) meatal stenosis and 2 (4.76 %) urethral stricture at the junction of native and neo-urethra. TIP urethroplasty can be done for proximal hypospadias in the absence of severe penile curvature and micro-penis and can creates a normal appearing penis with a slit-like meatus.

[OMTAJ 2009; 8(2)]

Introduction

Tubularized incised plate (TIP) urethroplasty has become a preferred method for repairing distal hypospadias since its introduction in 1994. Given its versatility to correct different meatal variants, the simplicity of the operative technique, low complication rate and reliable creation of a normal appearing glanular meatus in these patients, the procedure has subsequently been applied to boys with proximal hypospadias. However, to date most published series of TIP urethroplasty concern distal repairs with only limited mention of its use for more proximal defects. [1,2] . Furthermore, the first report of TIP repair [3] for proximal hypospadias was a multi-institutional series of 27 boys operated on by six surgeons and subsequent publications [4,5] from other centers similarly involve relatively few patients undergoing by several surgeons. In addition, selection criteria for TIP urethroplasty over other techniques for proximal hypospadias have not clearly stated and so, reported out-come may be biased. Consequently we herein describe the experience of one surgeon with a consecutive series of patients undergoing TIP repair for proximal hypospadias.

1. Assistant Professor (CC), Department of Paediatric Surgery, Sylhet MAG Osmani Medical College
2. Associate Professor, Department of Paediatric Surgery, Sylhet MAG Osmani Medical College
3. Assistant Registrar, Department of Paediatric Surgery, Sylhet MAG Osmani Medical College

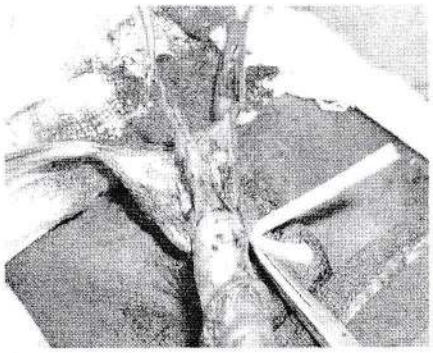
Materials and Methods

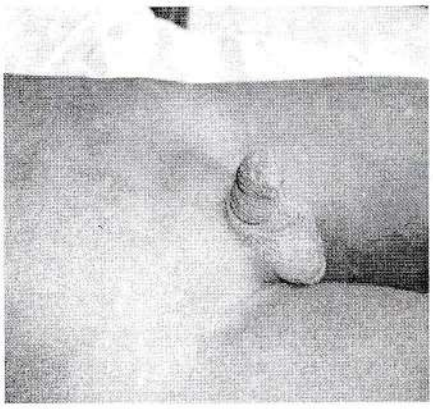
The medical records were reviewed retrospectively for 42 consecutive boys undergoing primary repair of midshaft to penoscrotal hypospadias by one surgeon. In each case, TIP urethroplasty was undertaken as described intext book.

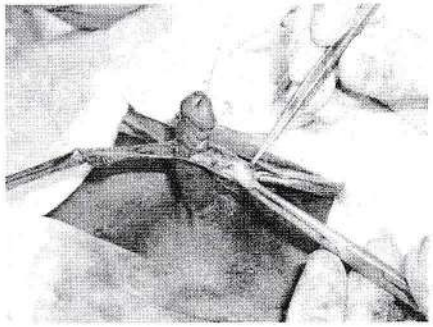
Briefly, the penis was degloved with a `U` shaped incision that preserved the urethral plate. An artificial erection was used in selected cases to detect ventral curvature, which was corrected by dorsal plication in few cases. Next a deep midline relaxing incision was made in the urethral plate from the meatus to its most distal extent. The plate was tabularized using 6/0 vicryl and running sutures placed through all layers. In all cases, adjacent tissues and dorsal dartos pedicle flap from the dorsal prepuce and penile shaft skin were placed over the neourethra as barrier layer. After glansplasty, the ventral penile shaft skin was closed with a variation of Byar`s flap to mimic the median raphe [6]. The correction

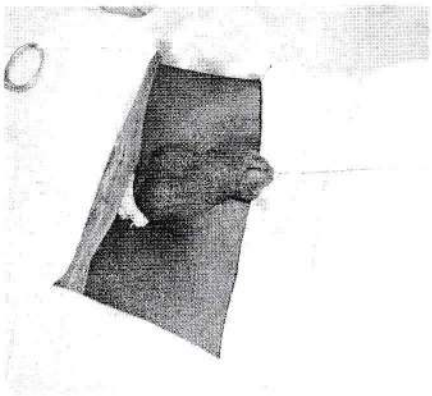
of penoscrotal transposition, when necessary was deferred to a later operation .A 7Fr/8Fr feeding tube provides urinary drainage for 10 days after surgery.

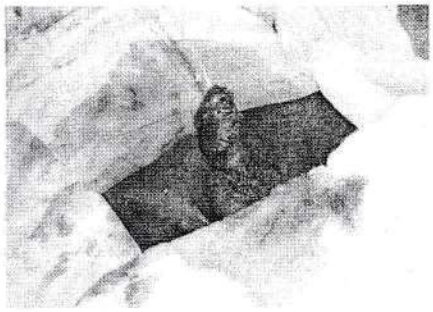
Operative Procedure: (Picture 1-5)











Intramuscular Injection Testosterone (250 IU) was administered selectively before surgery for a subjectively small penis. A periodic follow-up was recommended for 1 year after surgery. Initially the neourethra was routinely calibrated for two months, once in a week in all

patients but later this was limited to patients with a small appearing meatus or fistula.

Results

The series comprised 42 boys (mean age 3 years) range 20 months to 10 years, including 20 with midshaft, 16 with proximal shaft ,and 6 with peno-scrotal hypospadias (table-I).

Table –I: The characteristics of boys treated by TIP repair for proximal hypospadias:

Type	Midshaft	Proximal	Peno-scrotal	Total
No of patients	20	16	6	42
Preop. Testosterone	0	3	4	7
Dorsal plication	0	1	4	5
Calibration> 2 months	3	6	5	14

Among these 7 (16.66%) patients with proximal shaft to peno-scrotal defects received one dose of testosterone preoperatively, while no patients with midshaft hypospadias was needed hormone therapy before surgery. Ventral penile curvature was noted by artificial erection in 6 (14.28 %) boys and was corrected by dorsal placation in the midline as described by Baskin et al [8]. The neo-urethra was calibrated in all patients for the first 2 months, once in a week and later this was limited to patients with a small appearing meatus or fistula. In this study 6 patients (14.28 %) needed neo-urethral calibration for 4 months and only 4(4.76 %) patient's needed calibration for more than 6 months. Two asymptomatic strictures were detected at the site of original meatus after midshaft hypospadias repair. One patient undergoing fistula repair had meatal stenosis to <6 Fr. The mean follow –up was 6 months (2-18) with complications noted in 13 (30.94 %) patients (table –II).

Table-II: The outcome of boys treated by TIP repair for proximal hypospadias:

Type	Midshaft	Proximal	Peno-scrotal	Total
No of patients	20	16	6	42
Fistula	1	4	5	10
Meatal stenosis	0	2	1	3
Stricture	1	1	0	2
Dehiscence	0	1	0	1

The most common problem was fistula, which occurred in 10 (23.80 %) boys, all were single and pinhole sized and located at the site of original meatus. In three patient's fistula were spontaneously closed during calibration schedule within 4 months. The entire repair was dehisced before the catheter was removed in one patient, in whom the urethral plate was very thin and there seemed to be a paucity of subepithelial connective tissue overlying the corpora cavernosa, despite preoperative testosterone therapy. In all cases, the resultant neo-meatus was well positioned at the glanular tip and had a vertical slit-like appearance.

Discussion

The present study shows that TIP urethroplasty can potentially be used by any new surgeon to correct even severe degree of hypospadias. There was no selection bias among these patients, as every boy presenting with proximal hypospadias during the study period underwent TIP. In this study 7 (16.66%) patients received hormone therapy which was more proximal type of hypospadias and also small phallus. A single dose of Testosterone (250 IU) is enough for adequate lengthening of penis. Neourethral calibration were needed for at least two months in most cases and only 4 (4.76%) patients needed calibration for more than 6 months .

As in other reports of hypospadias surgery, the most common complication was fistula formation, despite the use of absorbable fine suture materials and interposition of barrier layers between the neo-urethra and overlying skin closure. Small pin hole fistula can be closed spontaneously during calibration schedule and in our series 4 among 10 were closed within 4 months. The entire repair can be dehisced due to very tight repair or wound infection or paucity of subepithelial connective tissue overlying the corpora cavernosa. The current goal of hypospadias repair is a functional penis with a normal cosmetic appearance of the penis by various techniques of repair available for proximal defects. TIP urethroplasty most reliably can create a normal appearing glans and meatus. Single stage TIP urethroplasty can be done successfully in boys having proximal hypospadias obtaining optimal functional and cosmetic results.

The only limitation of this study is small number of cases and lack of facility for urethroscopy.

In conclusion, TIP urethroplasty is a versatile repair that can be applied to a wide range of defects encompassing

most distal and many proximal defects. Regardless of the preoperative glanular configuration and location of meatus on shaft of penis , the procedure reliably creates a normal appearing penis with a vertically oriented slit-like meatus.

Reference

1. Steckler RE, Zaontz MR. Stent-free Thiersch-Duplay hypospadias repair with the Snodgrass modification. J Urol 1997; 158: 1178-80.
2. Sugarman ID, Trevett J, Malone PS. Tubularization of the incised urethral plate (Snodgrass procedure) for primary hypospadias surgery. BJU Int 1999; 83: 88-90.
3. Snodgrass W, Koyle M , Manzoni G, Hurwitz R, Caldamone A , Ehrlich R. Tubularized incised plate urethroplasty for proximal hypospadias. J Urol 1998; 159:2129-31.
4. Chen SC, Yang SSD, Hsich CH, Chen YT. Tubularized incised plate urethroplasty for proximal hypospadias. BJU Int 2000; 86: 1050-3.
5. Borer JG, Bauer SB, Peter CA et al. Tubularized incised plate urethroplasty. Extended use in primary and repeat surgery for hypospadias. J Urol 2000; 165: 581-5.
6. Snodgrass W, Decter RM, Roth DR, Gonzales ET Jr . Management of the penile shaft skin in hypospadias repair: alternate to Byar`s flap. J Ped Surg 1998; 23: 181-2.
7. Snodgrass W. Does the tabularized incised plate hypospadias repair create neourethral stricture? J Urol 1999; 162: 1159.
8. Baskin LS, Erol A, Li YW, Cunha GR. Anatomic studies of hypospadias. J Urol 1998; 160: 1108-15..

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Fine needle aspiration cytology (FNAC) is an efficient technique in the diagnosis of prostatic lesions

Md. Nazrul Islam Bhuiyan [1]; Md. Sohorab Hossain Bhuiyan [2]; Md. Amjad Hossain Khan[3]; Shamim Akhter Mimi [4]; Md. Abed Hossain [5]; Md. Shafiqul Haque Chowdhury [6] and M. A. Zulkifl [7]

Abstract

This study was carried out with an aim to determine the diagnostic accuracy of fine needle aspiration cytology (FNAC) in the diagnosis of prostatic lesions. This comparative and cross sectional study was carried out in the Department of Pathology, Sylhet MAG Osmani Medical College. A total of 70 patients were selected from the indoor and outpatient Department of Surgery, MAG Osmani Medical College Hospital, Sylhet and also from different private clinics in Sylhet city. Patients who had clinically enlarged prostate underwent fine needle aspiration cytology (FNAC) and subsequent histopathology. The findings of FNAC showed effective role in the diagnosis of prostatic lesions. The sensitivity, specificity, positive predictive value, negative predictive value and accuracy of this study were 90%, 98.33%, 90%, 98.33% and 97.14% respectively. This study was mostly consistent with others study in the literature. FNAC is a valuable investigation in patient with prostatic lesions.

[OMTAJ 2009; 8(2)]

Introduction

Inflammation, nodular hyperplasia and tumors are common lesions of prostate. Of these three, the nodular hyperplasia is the most common prostatic lesions. Prostatic carcinoma is also common lesion in men and the inflammatory processes are of part of less clinical significance.[1] Nodular hyperplasia of prostate is more common in transition zone and prostatic carcinoma is more common in the peripheral zone of the prostate gland.[2] Prostatic cancer is the most common malignancy among men and the second leading cause of cancer death in USA. About 95% of all prostatic cancers are adenocarcinoma, roughly 4% of prostate cancer are transitional cell carcinoma and 1% are other carcinoma.[3] The conclusive diagnosis of prostate carcinoma can be made only by morphologic evaluation which is done by light microscopy of histologic or cytologic material. Obviously, this requires an invasive procedure such as surgical biopsy or core needle biopsy.[4] FNAC is a less invasive, inexpensive and rapid method for the diagnosis of prostate carcinoma[5]. Fine needle aspiration of the prostate is a simple outpatient procedure that is often only a relevant investigation in an elderly man with clinical evidence of carcinoma of prostate.[6] The technique of fine needle aspiration of the prostate was introduced by Franzen and his co-workers in 1960. The simple instruments designed by Franzen was made for transrectal FNAC of any palpable abnormality in the prostate.[7] Now-a days, fine needle aspiration cytology is well accepted procedure for pre-operative diagnostic of prostatic cancer. The complication of FNAC of prostate is uncommon. By this study we will be able to perform preoperative diagnosis of prostatic lesions.

Material and methods

A total of 70 patients were selected from the indoor and outpatient Department of Surgery, MAG Osmani Medical College Hospital, Sylhet and also from different private Clinics in Sylhet city during the period of July 2005 to June 2006. Place of study was at the Department of Pathology, Sylhet MAG Osmani Medical College. Type of the study was cross-sectional. The prostate were examined clinically; size, shape, location and consistency were recorded. FNAC was done with aseptic precaution using standard procedure. A 25 gauge needle was used. The smeared slides were promptly dropped in to 95% ethyl alcohol for fixation and kept for at least 30

1. Assistant Professor, Department of Pathology, SWMC, Sylhet.
2. Associate Professor, Department of Pathology, JRRMC, Sylhet.
3. Professor and Head, Department of Pathology, SOMC, Sylhet.
4. Assistant Professor, Department of Pathology, SOMC, Sylhet
5. Professor and Head, Department of Pathology, JRRMC, Sylhet.
6. Lecturer, Department of Pathology, SOMC, Sylhet
7. Associate Professor (Ex), Department of Surgery, SOMC Sylhet.

minutes. This smear was then stained according to Papanicolaou's method for microscopic examination. The biopsy was performed in all cases and the specimens were examined histopathologically.

Results

The age range of patients was from 41 years to 110 years with an average 60 years of age. Out of the 70 patients, maximum number of patients (27) belonged to the age group of 61 to 70 years (38.6%) and next number was 17 (24.3%) belonged to the age group of 70-80 years

Cytopathological study of 70 cases showed 69 (98.6%) satisfactory smears and smear was inadequate in 1 case (1.4%). The most common lesions nodular hyperplasia which were 58 (82.9%). The total number of malignant tumor were 9 (12.9%). One case was diagnosed as suspicious for malignancy (1.4%). One case was diagnosed as atypical hyperplasia of prostate (1.4%). This is shown in table-I.

Biopsies were available in all 70 cases. Out of total 70 patients, 59 (84.3%) cases were diagnosed histopathologically as nodular hyperplasia, one (1.4%) case was diagnosed as atypical hyperplasia and 10 (14.3) cases were diagnosed as adenocarcinoma of prostate. Table-II shows the distribution of histopathological diagnosis.

FNAC diagnosis of 70 cases of prostatic lesions showed true negative 59, false negative 1, true positive 9 and false positive 1. The sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy for the FNAC of this study were 90%, 98.33%, 90%, 98.33% and 97.14% which is shown in the table-III.

Table: I: Fine Needle Aspiration Cytology of Prostatic lesions.

FNAC Diagnosis	Number of Patients	Percent
Nodular hyperplasia	58	82.9
Atypical hyperplasia	1	1.4
Adenocarcinoma	9	12.9
Suspicious for malignancy	1	1.4
Inadequate smear	1	1.4
Total	70	100.0

Table -II: Histopathological Diagnosis of Prostatic lesions

Diagnosis	Frequency	Percent
Nodular hyperplasia	59	84.3
Atypical hyperplasia	1	1.4
Adenocarcinoma	10	14.3
Total	70	100.0

Table-III: Validity tests of cytopathological diagnosis of prostatic lesions.

Sensitivity	Specificity	Positive predictive value	Negative predictive value	Accuracy
90%	98.33%	90%	98.33%	97.14 %

Table-IV: Correlation between Cytopathological and Histopathological diagnosis

Cytopathological diagnosis	No	Histopathological diagnosis		
		Nodular hyperplasia	Atypical hyperplasia	Adenocarcinoma
Nodular hyperplasia	58	57	00	01
Atypical hyperplasia	01	00	01	00
Adenocarcinoma	09	00	00	09
Suspicious for malignancy	01	01	00	00
Inadequate smear	01	01	00	00
Total	**70**	**59**	**01**	**10**

Table-V: Validity tests of cytopathological diagnosis of prostatic lesions of different Authors

Authors/Year	Sensitivity	Specificity	Accuracy
Al-Abadi et al 1996	98%	98%	97.5%
Saleh 2003	88%	93%	94.1%
Islam 2004	94%	92%	93.1%,
Present study 2006	90%	98.33%	97.14%

Discussion

In the evaluation of prostatic lesions, currently the two commonly used methods of obtaining material for microscopic examinations are fine needle aspiration and excisional biopsy. Fine needle aspiration of the prostatic lesions to obtain material for cytological analysis has

become an accepted procedure. No serious complication has ever been reported.

In this study, FNAC was done in 70 cases. Satisfactory smears were obtained in 69 cases (98.6%) and smear was inadequate in 1 (1.4 %) case. A review of literature revealed that inadequate smears were obtained in many of the studies. Narayan et al [8] showed inadequate smears in 6 cases (4.9%), Epstein et al[1] showed 3 cases (2.5%) inadequate smear and Saleh [9] reported inadequate smear in 1 (1.6%) case. This study is more or less similar to Saleh.

Out of 70 cases, 68 cytopathologically diagnosed prostatic lesions were proved histopathologically which is shown in the table-IV. Of these 58 cases cytopathologically diagnosed nodular hyperplasia, 57 cases were nodular hyperplasia of prostate and 1 case was prostatic carcinoma (adenocarcinoma) histopathologically leading to 1 false negative diagnosis (1.42%). There was concordance in 57 cases. Smear of these 57 cases revealed cellular material composed monomorphic population of cells arranged in honeycomb appearance without nuclear atypia. Discrepancy between histopathological and cytopathological findings of 1 case may be explained by sampling of different site, since prostate carcinoma may be focal and FNA obtained may not include the involved site which is shown in the table-IV.

The sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy for the FNAC of this study were 90%, 98.33%, 90%, 98.33% and 97.14% respectively.

In order to detect acceptability of present study this should be compared with observations made by others. Al-Abadi et al[10] showed 98% sensitivity and 98% specificity for FNAC of prostatic lesions. Saleh[8] showed sensitivity 88% and specificity 93%. Narayan et al[8] showed accuracy 91.7%, and Islam[11] showed accuracy 93.1%. This study is more or less similar to other studies which is shown in the table –V.

In conclusion, the present study indicates that the FNAC is a reliable, simple, time saving, safe and inexpensive method for diagnosis of prostatic lesions. The present study showed that fine needle aspiration cytology has a definite value in the diagnosis of prostatic lesions. FNAC could be effectively used in the diagnosis and management of prostatic lesions as an efficient screening procedure for enlarged prostate.

Reference

1. Epstein JI and Wojni. The prostate and Seminal Vesicles. In: Sternberg SS. Antoniodi DA, Carter D, Eggleston JC, Mills SE, Oberman HA (eds). Diagnostic Surgical Pathology 3rd ed.Vol-2 Raven Press, New York 1999; 45: 1893-1937.
2. Mostofi FK, Sesterhenn IA, Davis CCJ. Prostatic carcinoma: Problems in the interpretation of prostatic biopsies. Hum Pathol Am 1992; 23: 223-41.
3. Mazhar D and Waxman. Prostate cancer. Postgraduate Med J 2002; 78: 590-5.
4. Skoog L, Tani EM and Lowhagen T. Prostate. In: Bibbo M. Comprehensive Cytopathology 2nd ed, vol-2, Philadelphia, .W.B. Saunders company 1991. pp.806-21.
5. Suen KC. Atlas and Text of Aspiration Biopsy Cytology. Baltimore, Williams and Wilkins; 1990; 237-24.
6. Lever JV, Trott PA and Webb AJ. Fine needle aspiration cytology. J Clin Pathol 1985; 38: 1-11.
7. Orell SR, Stereff GF, Watters MN, Whitaker D, editors. Manual Atlas of Fine Needle Aspiration Cytology. 2nd ed. London, Churchill Livingstone. 1992, pp. 273-80.
8. Narayan P, Jajodia P, Stein R, Tanagho EA. A comparison of fine needle aspiration and core biopsy in diagnosis and preoperative grading of prostate cancer. J Urol Am 1989; 41: 560-3.
9. Saleh AFM. Role of fine needle aspiration cytology in the diagnosis of prostatic lesions with histologic correlation. M Phil Thesis (Path), BSMMU, 2003; 1-100.
10. Al- Abadi H. Fine Needle Aspiration Biopsy vs Ultrasound-Guided Transrectal Random Core Biopsy of the Prostate. Acta Cytol 1996; 41: 981-6.
11. Islam MT. Fine needle aspiration cytology of prostatic lesions and cytologic grading of prostatic carcinoma with histologic correlation. M Phil Thesis (Path), BSMMU, 2004; 1-103.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Socio-demographic and clinical pattern of Sexually transmitted diseases (STD) patients attending in a private specialist chamber in Sylhet District: A study of 60 cases.

Md. Abu Yusuf Bhuiyan[1], Rukon Uddin Ahmed[1], Safir Uddin Ahmed[1], Subir Kumar Das[1], Md. Tabibul Islam[2]

Abstract

This prospective and cross sectional study was conducted in a private chamber in Sylhet City during the period from March 2007 to December 2007 with a view to find out the socio-demographic and clinical pattern of Sexually transmitted disease patients. Cases were selected consecutively and patients with all age and both sexes were included in the study. Sixty patients with STDs were included in this study of which 57 were male and 3 were female. with a male to female ratio of 19:1. The age of the patients was ranging from 8 to 40 years with the mean age of 23.933 ± 5.854 years. Most of the patients were young adults (90.0%) between the age of 16 to 30 years, 71.7% patients were unmarried. More than half (53.4%) were from average socio-economic group. Thirty percent of patients were un-employed, 21.7% were employed, 26.7% were business man, 11.7% were driver, 6.7% were student and 3.3% were housewife. Most of the patients were literate (73.3%) and lived in city corporation or municipality (68.3%); and no knowledge about STDs and its transmission (63.3%). Regarding clinical pattern of STDs 31.7% patients had gonococcal urethritis, 26.7% had non-gonococcal urethritis; Herpes progenitalis and genital warts each comprised 10.0%; HIV/AIDS and syphilis each comprised 8.3%; and 5.0% had chancroid. Most of the patients (63.3%) received infection from commercial sex worker, 31.7% from girl friends, 3.3% from husband and 1.7% from mother (vertical transmission). In conclusion STDS are more common in young adult male of unmarried, literate and average income group. Proper health education and counseling regarding STDs and its transmission is necessary to prevent STDs transmission among the vulnerable group.

[OMTAJ 2009; 8(2)]

1. Assistant Professor, Dermatology & Venereology MAG Osmani Medical College, Sylhet.
2. Consultant, Dermatology & Venereology, 50 beded Gowainghat Upazila Health Complex, Sylhet

Introduction

Sexually transmitted diseases (STDs) are group of communicable diseases those are transmitted by sexual contact mainly. STDs become gradually increased in number day by day due to (a) social and behavioral factors such as Commercial sex worker, Broken home, sexual disharmony, easy money, emotional immaturity, urbanization and industrialization, social disruption, national and international travel due to jobs or amusement and/ excursion, changing behavioral pattern, alcoholism poverty, husband and wife living separate place for long time due employment or business. (b) Demographic factors like, population explosion and marked increase in number of young people, rural to urbanization, increased educational opportunity for women, delaying their marriage.

An untreated STD is potential dangerous not for himself alone but for his community also. The association of STD and AIDS has made the situation more dangerous. STDs patients are exposed to higher risk of developing HIV infection due to behavior and presence of genital ulcer and/ inflammation.[1]

Materials and Methods

This prospective and cross sectional study was conducted in a private chamber in Sylhet City during the period from March 2007 to December 2007. Cases were selected consecutively and patients with all age and both sexes were included in the study. Diagnosis was based

on history, clinical findings and investigations especially VDRL, TPHA, Urethral or prostatic smear for gram staining, Chlamydial antigen, detection of antibody to HSV 1 and 2 and HIV was done for confirmation. Information regarding socio-demographic factors and clinical pattern were collected in a pre-designed and pre-tested questionnaire by directly interviewing the patients. Patients were treated accordingly and followed up routinely. Data were processed and analyzed with the help of computer software program such as SPSS version 16.0 (Statistical package for social science). Mean and standard deviation were calculated for continuous data and percentage for categorical data.

Results

Sixty patients with STDs were included in this study of which 57(95.0%) were male and 3 (5.0%) were female with a male to female ratio of 19:1. Distribution of sex of the STD patients was shown in figure-1.

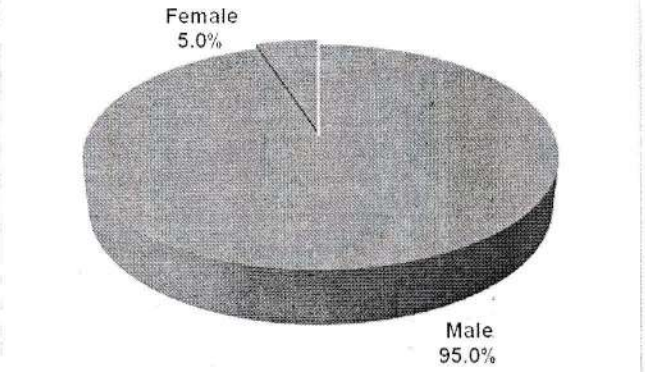


Figure-1: Distribution of sex of the STD patients (n=60)

The age of the patients was ranging from 8 to 40 years with the mean age of 23.933 ± 5.854 years. The distribution of the age of the patients was shown in Figure-2.

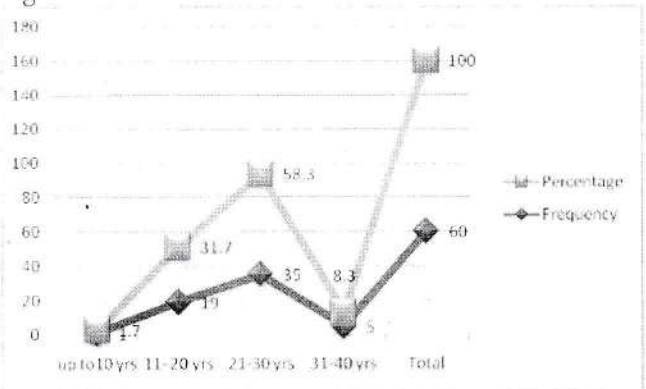


Figure-2: Distribution of the age of the patients (n=60)

Figure-2 showed that 35 (58.35) patients were in the age group of 21 to 30 years followed by 19 (31.7%) were in the age group of 16 to 20 years 5 (8.3%) were in the age group of 31 to 40 years and 1 (1.7%) was in the age group of below 15 years.

Regarding marital status 43 (71.7%) patients were unmarried and 17 (28.3%) were married. The distribution of the marital status of the patients was shown in Figure-3.

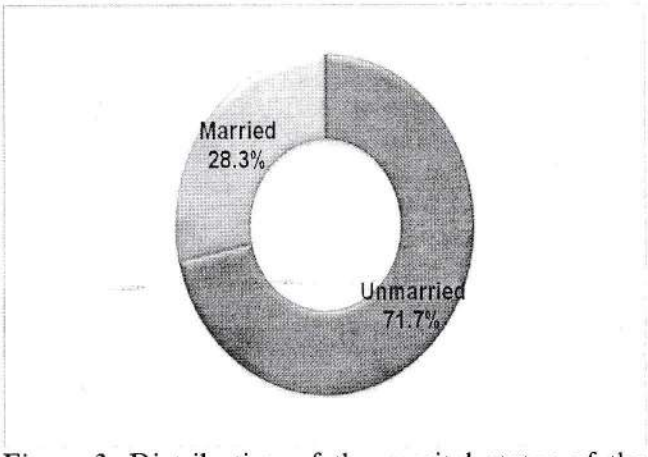


Figure-3: Distribution of the marital status of the patients (n=60)

Twenty three (38.3%) patients were from poor socio-economic group, 32 (53.4%) from middle income group and 5 (8.3%) from rich socio-economic group. The distribution of the socio-economic group of the patients was shown in table-1.

Table-1: Distribution of the socio-economic group of the patients (n=60)

Socio-economic status (Income)	Frequency	Percentage
Poor (<Tk. 5000/ month)	23	38.3
Middle income (Tk.5000-10000/ month)	32	53.4
Rich (.>Tk. 10000/month)	5	8.3
Total	60	100.0

Eighteen (30.0%) of patients were un-employed, 13 (21.7%) were employed, 16 (26.7%) were business man, 7 (11.7%) were driver, 4 (6.7%) were student and 2 (3.3%) were housewife. The distribution of the occupation of the patients was shown in table-2.

Table-2: Distribution of the occupation of the patients (n=60)

Occupation	Frequency	Percentage
Un-employment	18	30.0
Employment	13	21.7
Student	4	6.7
Driver	7	11.7
House wife	2	3.3
Business	16	26.7
Total	60	100.0

Forty-four (73.3%) of patients were literate and 16 (26.7%) were illiterate. The distribution of the educational status of the patients was shown in figure-4.

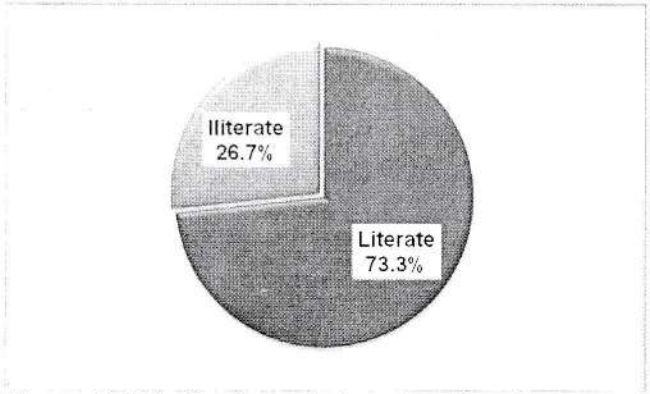


Figure-4: Distribution of the educational status of the patients (n=60)

Forty-one (68.3%) patients were form city corporation or municipality areas and 19 (31.7%) from village areas. The distribution of the areas of inhabitant of the patients was shown in figure-5.

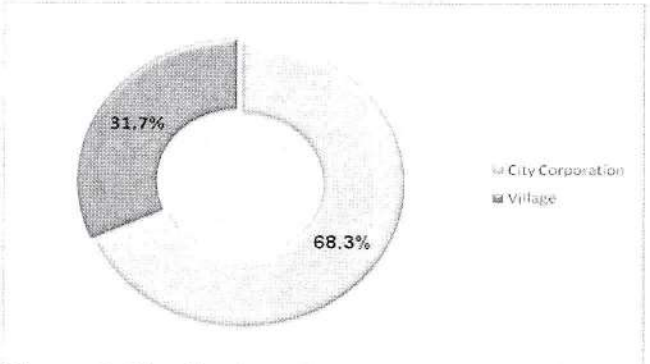


Figure-5: Distribution of the areas of inhabitant of the patients (n=60)

Thirty-eight (63.3%) patients had no knowledge about STDs and its transmission, 7(11.7%) had minimum knowledge and 15 (25.0%) had average knowledge about STDs and its transmission. The distribution of the patients according to knowledge about STDs and its transmission was shown in Table-3.

Table-3: Distribution of the patients according to knowledge about STDs and their transmission (n=60)

Knowledge about STDs	Frequency	Percentage
No Knowledge	38	63.3
Minimum knowledge	7	11.7
Average Knowledge	15	25.0
Total	60	100.0

Regarding clinical pattern of STDs 19 (31.7%) patients had gonococcal urethritis, 16 (26.7%) had n0n-gonococcal urethritis, Hepes progenitalis and genital warts each comprised 6(10.0%); HIV/AIDS and syphilis each comprised 5 (8.3%) and 3(5.0%) had chancroid. The distribution of the patients according to clinical pattern of STDs was shown in table-4.

Table-4: Clinical pattern of STDs (n=60)

Source of STDs	Frequency	Percentage
Commercial sex worker	38	63.3
Girl friend	19	31.7
Husband	2	3.3
Mother (vertical)	1	1.7
Total	60	100.0

Table-5: Distribution of source of infections (n=60)

Source of STDs	Frequency	Percentage
Commercial sex worker	38	63.3
Girl friend	19	31.7
Husband	2	3.3
Mother (vertical)	1	1.7
Total	60	100.0

Discussion

This study was conducted in patients attending a private chamber, North-east part of Bangladesh where socio-economic conditions were better than the other part of the country. That's why private chamber was preferred where patients could bear the cost of the private chamber, investigations cost and follow up was possible than the government Hospital.

Sixty patients with STDs were included in this study of which 95.0% were male and 5.0% were female with a male to female ratio of 19:1. The comparatively lower rate of STDs among female may be attribute due to biological and environmental factors. The females have less opportunity to attend the physician or they are more

reluctant to disclose their condition for fear of social ostracism may also be attributed to the same.

The age of the patients was ranging from 8 to 40 years with the mean age of 23.933 ± 5.854 years. Most of the patients (58.3%) were in the age group of 21 to 30 year followed by 31.7% were in the age group of 16-20 years. So that patients with young adult groups were more sufferers of STDs.

Un-married persons were more affected (71.7%) probably due to direct influence of the wide availability of pornography and other sexually explicit movies. Around 28% married persons were affected through extra-marital sex. This finding has similarity with findings of earlier studies by Sirajuddin et,[2] al and Ahmed et al.[3]

Average socio-economic group (53.4%) of patients were more affected by STDs in this study probably because they were able to bear the expenses of private chamber consultation and subsequent investigation costs. Unemployed patients (30.0%) were vulnerable group because of frustration and passing idle time and this group had some easy earning from foreign remittances sent by their relatives. Next were the business man (26.7%) and employed (21.7%) persons due to solvency and easy availability of commercial sex worker in different hotel and house or haired from Dhaka. A small group of employed person living alone by keeping their wives outside Sylhet.

In this study commercial sex workers (63.3%) were the main source of spread of STDs. This result was similar to the study of Zakaria et al.[4] Large number of literate persons (73.3%) contracting STDs points towards obvious weaknesses in our education system which failed to impart basic health education. Illiterate group of patients were totally unaware of the hazards of STDs and was correlated with observations of Sirajuddin et al.[2]

Patients were form City Corporation or municipality areas were more affected than villagers (68.3% vs 31.7%). This may be due to less social bindings and easy availability of commercial sex worker in the City Corporation area. Villagers were affected due to large number of people were living abroad leaving their spouse alone at home for years together. These families employ poor males of outer districts at their home to address security problems and carry out other outdoor works. Intimacy with household ladies were sometimes responsible for acquisition of STD by the left alone ladies. Obviously they were not professional sex workers.

Most of the patients (63.3%) had no knowledge about STDs and their transmissions and the findings correlated with Ahmed et al, and Nessa et al. Regarding clinical pattern of STDs 31.7% patients had gonococcal urethritis, 26.7% had non-gonococcal urethritis, Herpes progenitalis and genital warts each comprised 10.0%; HIV/ AIDS and syphilis each comprised 8.3% and 5.0% had chancroid.

The highest percentage of HIV/AIDS did not reflect the scenario of Bangladesh. Here the 5 (8.3%) patients were from two families. Two females HIV positive patients were infected from their expatriate husband and one children from her mother (vertical transmission). Few syphilis (8.3%) cases were detected in this study in sharp contrast to the findings of Sirajuddin et al,[2] (26.7%). Some gonnoccocal infection was found resistant to ceftriaxone.

Here only a few patients were included in the study and does not reflect the country scenario. In conclusion STDS are more common in young adult male of unmarried, illiterate and middle income group attending private specialist chambers. These findings should be confirmed by multi-center study involving different geographical locations across the country with a larger sample size.

References

1. Park's Text Book of Preventive and Social Medicine. 20th edition. Jalalpur, India: Banarasidas Bhanot. 240-52.
2. Sirajuddin M, Chowdhury SH, Islam MN. Socio-demographic study and seroprevalence of Syphilis and HIV/AIDS among the patients of STDs attending IPGMR, Dhaka. Sylhet Med J 2002; 23:14-7
3. Ahmed S, Kawsar FR, Chowdhury OA, et al. Socio-demographic characteristics of STD patients attending Skin-VD Out patient Department Sylhet MAG Osmani Medical College Hospital. Sylhet Med J 1998; 19:21-3.
4. Zkaria ASM, Rahman M, Shahidullah M, et al. Knowledge and practice regarding HIV infections among prostitute of Narayangonj, Bangladesh. Bangladesh J Med 1997; 26:8-9.
5. Mohsena M, Lahiry S, Haque M, et al. Health indicators among CSW of Daulatdia brothel, Bangladesh. J Comilla Med College Teachers Assoc. 2003; 5:88-90.
6. Nessa A, Latif SA, Siddique NI, et al Awareness building imperative. Mymenshing Med J 2008; 17:1-2

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Evaluation of imprint cytology in the diagnosis of breast lumps

Md. Abdul Mazid Khan [1], Md. Amjad Hossain Khan [2], N.K. Saha [3]

Abstract

The aim of this study is to determine the accuracy of imprint cytology in the diagnosis of breast lump. This is a cross sectional study of imprint cytology and open biopsy (OB) were performed on 101 patients who presented with a breast lump and the results compared, in order to determine the accuracy of imprint cytology. This study was undertaken in the Pathology department of SOMC from July 2005 to June 2006.

Age group of patients ranged from 14 to 80 years with mean age 26.67 ± 13.59 years. Fibroadenoma was the most common diagnosis. Sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy of imprint cytology of imprint cytology of breast lump were found to be 96.15%, 98.66%, 96.15%, 98.66% and98.01% respectively. Imprint cytology of the breast lump is simple and cost effective method to determine the nature of breast lump. It can provide quick intra-operative diagnosis and also can determine the extent of surgery required.

[OMTAJ 2009; 8(2)]

Introduction

Carcinoma of breast is one of the common malignancies and leading cause of death in women worldwide. One in nine women in the United States develop breast cancer one third of these women succumbs to death. Unfortunately it is the second common malignancy in the women of developing countries like India, Pakistan and Bangladesh[1]. It is crucial to reduce the unnecessary operations for breast lumps. However, to achieve this accurate intra-operative diagnosis must be made. Imprint cytology have great importance in this regards[2].The the technique of imprint cytology, introduced by Dudgeon and Patrick can be powerful tool for intra-operative evaluation of breast lump. Accurate, quick intra-operative diagnosis facilitates determination of the required extent of surgery[3]. Various studies have been done to determine the efficacy and usefulness of imprint cytology has been found to have a sensitivity ranging from 97.1% to 100% and a specificity of ranging from 97 % to 100%[4,5].

The aim of the present study was to determine the accuracy of imprint cytology in the diagnoses of breast lumps in our local context

Materials and Methods

A total of 101 women who presented with breast lump at surgery out patient department of Sylhet MAG Osmani Medical college Hospital and different private clinic in Sylhet city from July 2005 to Jun 2006, with clinically suspicious breast lumps were accrued into this study. After a detailed history and physical examination, these cases were followed up till surgery and imprint smears were made of the freshly resected specimen specimens in the operation theater itself. The tissue was first examined macroscopically and then sectioned lesional areas were blotted with gauge imprint on a glass slides. These were fixed in alcohol and stained by the rapid hematoxyline and eosin method. Imprint smears were examined according to sampling, cellularity, background, ductal and stromal cells. Malignant cells were evaluated according to arrangement, nuclear characteristics and other features. The specimens were subjected to histopathological examination. The final histology was read by an independent pathologist who was blinded to the original imprint cytology report.

Collection of biopsy specimen.

Biopsy material was immersed in a level container of 10% buffered formaline for histopathological examination.Evaluation: - All data were recorded. By comparing with gold standard all the result of imprint cytology were recorded as true positive, true negative,

1. Lecturer, Department of Pathology, Sylhet MAG Osmani Medical College.
2. Professor, Department of Pathology, Sylhet MAG Osmani Medical College.
3. Assistant Professor, Department of Pathology, Sylhet MAG Osmani Medical College

false positive, false negative, sensitivity, specificity, positive and negative predictive value.

Results

A total of 101 patients with mean age 26.67 ± 13.59 years ranging from 14 – 80 years were studied. The frequencies of breast lumps were high 64 (63.37%) in the age group 25-24 years. Frequency was low 1 (.99%) in the age group <15 years. Table 1 shows the age distribution of 101 patients with breast lumps.

Table 1. Distribution of patient's accordimg to age.

Age in years	No of cases	Percent
< 15	1	.99
15-24	64	63.37
25-34	10	9.90
35-44	12	11.88
45-54	10	9.90
>54	4	4.96

A total of 101 imprint smears of various lesions of breast were obtained. The imprint cytological diagnoses of 101 cases of breast lumps were as follows.

Fibroadenoma 52(51.49%), fibrocystic change 13(12.87%), chronic mastitis 4(3.96), benign proliferative lesion 2(1.98%) abscess 1(0.99%),galactocele 1(.99%), sclerosing adenosis 2(1.98%), duct cell carcinoma 21(20.79%), mucinous carcinoma 2(1.98%), lobular carcinoma 1(0.99%), high grade phyllodes tumour 1(0.99%) Paget's diseases 1(0.99%).

Table-II shows the distribution of imprint cytodiagnoses 101 cases of breast lumps.

Table-II. Imprint cytodiagnosis of 101 breast lumps.

FNA cytological diagnosis	Frequency	Percent
Fibroadenoma	52	51.49
Fibrocystic changes	13	12.87
Chronic mastitis	04	3.96
Benign proliferative lesion	02	1.98
Abscess	01	0.99
Low-grade Phyllodes tumour	01	0.99
Sclerosing adenosis	02	1.98
Duct cell carcinoma	21	20.79
Lobular carcinoma	01	0.99
Mucinous carcinoma	02	1.98
High-grades Phyllodes tumour	01	0.99
Paget's disease	01	0.99
Total	101	100.0

Imprint cytological diagnoses of 101 cases of breast lumps reveal 75(74.25%) were benign cases and 26(25.75%) were malignant cases. Table-III shows the categorization of Imprint cytological diagnosis of (n=101) breast lumps.

Table-III. Categorization imprint cyto-diagnoses of 101 cases of breast lumps.

Benign breast diseases	Malignant diseases	Total
75(74.25%)	26(25.75%)	101(100%)

Histopathological diagnoses of 101 cases of breast lumps were as follows.

Fibroadenoma 52(51.49%), fibrocystic change 13(12.87%), chronic mastitis 4(3.96), abscess 1(0.99%), low grade phyllodes tumour 1(0.99%), sclerosing adenosis 3(2.97%), galactocele 1(0.99%), duct cell crcinoma 21(20.79%), mucinous carcinoma 2(1.98%), lobular carcinoma 1(0.99%), high-grade phyllodes tumour1 (0.99%) and paget's disease 1(0.99%). Table-IV shows histopathological diagnosis of 101 cases of breast lumps.

Table- IV. Histopathological diagnoses of 101 cases of breast lumps.

Histopathological diagnosis	Frequency	Percent
Fibroadenoma	52	51.49
Fibrocystic changes	13	12.87
Chronic mastitis	04	3.96
Abscess	01	0.99
Low grade phyllodes tumour	01	0.99
Sclerosing adenosis	03	2.97
Galactocele	01	0.99
Duct cell carcinoma	21	20.79
Lobular carcinoma	01	0.99
Mucinous carcinoma	02	1.98
High grade phyllodes tumour	01	0.99
Paget's disease	01	0.99
Total	101	100.0

Diagnostic method	True positive	True negative	False positive	False negative	Sensitivity%	Specificity%	PPV%	NPV%	Accuracy%
Imprint cytology	25	74	1	1	96.15 %	98.66 %	96.15 %	98.66 %	98.01 %

PPV-Positive predictive value.

NPV- Negative predictive value.

Discussion

Breast neoplasm is a common clinical problem in our country. Although there has been little success in preventing breast cancer yet significant reduction of mortality could be achieved by early detection. Imprint cytology is an extremely useful intra-operative rapid diagnostic technique for detection of nature of breast neoplasm. Its success is due to its diagnostic accuracy and its cost effectiveness in the management of breast lump. Dudgeon and Patrick first introduced the application of imprint cytology for the diagnosis of palpable breast lump in 1937, and since then, it has been established as an important tool in the intra-operative evaluation of breast lump. Patients with breast lump are in a state of anxiety, so in order to reduce anxiety and to minimize delay in diagnosis, imprint cytology play an important role. This study showed that the benign lesions of the breast are the common lesions, which were comparable to the observation made by others. In this study sensitivity and specificity of imprint cytology in the diagnosis of breast lump was 96.15 % and 98.66% respectively, which was comparable to the findings of other study. One case diagnosed duct cell carcinoma by imprint cytology proved galatocele by histolopathologic examination. This one cases constitute false positive diagnosis for imprint cytology. This was because of presence of severe inflammation and necrosis with poorly visible atypical cell in imprint cytological smear.

One case diagnosed as fibrocystic change by imprint cytology was proved ductal carcinoma in histopathology. This one cases constituted false negative for imprint cytology this is because of presence of severe inflammation and necrosis with non-visible atypical cell in imprint cytlogy. So if there is extensive inflammation in imprint cytology, it is better to correlate the findings with clinical diagnosis and to histopathology report to avoid misdiagnosis.

In conclusion, the results of this study showed that imprint cytology is useful tools in the rapid intra-operative diagnosis of breast lumps. Imprint cytology also has the added advantages of rapidity, simplicity, and better preservation of architecture while gross examination of the specimen can reveal important detail. Imprint cytology can also determine the extent of surgery required. In the peripheral Hospitals, where frozen section facilities are not available imprint cytodignosis can make successful alternative.

References

1. Kumar R, Bozkurt MF, Zhuang H, Alavi A. Sentinal lymph node biopsy in the management of breast cancer. Indian J Cancer 2003; 49: 60-5.
2. Choudhury AI, Qreshiue KS, Rasul S. Incidence of malignancy in females presenting with breast lumps in OPD: a study of 277 Cases. Pak J Med Sci 2003; 19 : 287-94.
3. Dutta SK, Chattopadhyaa A, Roy S. Fine needle aspiration and imprint cytology in the diagnosis of breast of breast lesions. J Indian Med Assoc 2001; 99: 421-3.
4. Creager A J, Shaw J A, Young P R, Geisiner K R. Intra-operative evaluatiomn of lumpectomy margins by imprint cytology with histologic correlation. Arch Pathol Lab Med 2002; 126: 846-8.
5. Karve PV, Jambhekar NA, Deasi SS, Chinoy RF. Role of frozen-section evaluation in Patients with breast lumps. Indian J Surg 2005; 67:248-52.
6. Khanna AK, Sing MR, Khanna S, Khanna N. Fine needle Aspiration cytology, Imprint cytology and True-cut needle biopsy in breast lumps; a comparative evaluation. J Indian Med Assoc 1999; 89: 192-7.
7. Klein S. Evaluation of palpable breast masses. Am. Fem. Physion 2005;71:1731-8
8. Walker SR. A randomized control trial comparing a 21 G needle with a 23 G needle for fine needle aspiration of breast lumps. JR Coll Surgeon Edinb 1998; 43:322-3.
9. Francis IM, Das DK. Role of fine needle aspiration, intra-operative imprint cytology and frozen section in the diagnosis of breast lump and thyroid lesions. Med principles practice 1999; 8: 421-3.
10. Howell LP, Edward RG, Sullivan DO. Application of Scarff-Bloom-Richardson Tumour grading system to fine needle aspiration of breast. Am J Clin Pathol 1994; 101:262-5.

REVIEW ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Polio vaccine-A review

Saima Kamar [1], Osul Ahmed Chowdhury [2], Md Murshed [3], Rabiul Hasan[4] and Goutam Kumar Roy [5]

Introduction

Poliomyelitis is caused by a virus, mainly RNA virus with a member of the genus *Enterovirus* known as poliovirus[1]. Poliomyelitis is a highly contagious infectious disease. Polioviruses spread from the intestinal tract to the central nervous system, where they cause aseptic meningitis. The most devastating result of poliovirus infection is paralysis, although 90-95% of infections is in apparent but induces protective immunity. However most poliovirus infections are sub clinical[2]. Type I frequently causes epidemics. Type1 is the most commonly encountered form, and closely associated with paralysis.[3]

Paralytic poliomyelitis is identified clinically but non-paralytic can only be identified by laboratory test. Bangladesh is committed to eradicate poliomyelitis as a co-signatory of 1988 World health association resolution for global polio eradication. There is direct correlation between poor hygiene, sanitation, crowding and the acquisition of infection and antibodies at an early age. The key element in the success of polio surveillance has been the employment of well-trained persons dedicated to the task, supported adequately by financial, transport, feedback, data analysis and accounting systems, and backed by a reliable laboratory network.

The only way to prevent poliomyelities is to develop immunity against poliovirus. Protective immunity against poliovirus infection develops by either immunization or natural infection.Acquired natural immunity confers protection against one type of poliovirus only whereas trivalent OPV protects against three types of poliovirus.[4] As vaccination is very much successful in preventing poliomyelities in world including bangladesh.The aim of this review is to discuss various aspect of polio vaccination.

History of Polio Vaccine

Two polio vaccines are used throughout the world to combat poliomyelitis (or polio).The first inactivated virus vaccine was developed in 1952 by Jonas Salk, and announced to the world on April 12, 1955.[5] The Salk vaccine, or inactivated poliovirus vaccine (IPV), is based on poliovirus grown in a type of monkey kidney tissue culture (Vero cell line), which is chemically inactivated with formalin. After two doses of IPV (given by injection), 90% or more of individuals develop protective antibody to all three serotypes of poliovirus, and at least 99% are immune to poliovirus following three doses.[6]

Subsequently, Albert Sabin developed another live, oral polio vaccine (OPV). It was produced by the repeated passage of the virus through non-human cells at sub-physiological temperatures.[7] The attenuated poliovirus in the Sabin vaccine replicates very efficiently in the gut, the primary site of wild poliovirus infection and replication, but the vaccine strain is unable to replicate efficiently within nervous system tissue. A single dose of Sabin's oral polio vaccine produces immunity to all three poliovirus serotypes in approximately 50% of recipients. Three doses of live-attenuated OPV produce protective antibody to all three poliovirus types in more than 95% of recipients. Human trials of Sabin's vaccine began in 1957[8], and in 1958 it was selected, in competition with the live vaccines of Koprowski and other researchers, by the US National Institutes of Health. It was licensed in 1962 and rapidly became the only polio vaccine used worldwide.[9] Because there is no long term carrier state for poliovirus in immunocompetent individuals, polioviruses have no non-primate reservoir in nature, and survival of the virus in the environment for an extended period of time appears to be remote.[10]

1. Assistant professor of Microbiology. Jalalabad Ragib-Rabeya Medical College, Sylhet.
2. Professor of Microbiology, Sylhet MAG Osmani Medical College, Sylhet.
3. Associate Professor of microbiology, Holly Familly Red Crescent Medical College, Dhaka
4. Assistant Professor of Pediatrics. Jalalabad Ragib-Rabeya Medical College, Sylhet.
5. Associate Professor of Medicine, Sylhet MAG Osmani Medical College, Sylhet.

Therefore, interruption of person-to person transmission of the virus by vaccination is the critical step in global polio eradication. The two vaccines have eradicated polio from most countries in the world,[11] and reduced the worldwide incidence from an estimated 350,000 cases in 1988 to 1,652 cases in 2007.[12,13]

Development

In the generic sense, vaccination works by priming the immune system with an 'immunogen'. Stimulating immune response, via use of an infectious agent, is known as immunization. The development of immunity to polio efficiently blocks person-to-person transmission of wild poliovirus, thereby protecting both individual vaccine recipients and the wider community.[14]

The development of two polio vaccines led to the first modern mass inoculations. The last cases of paralytic poliomyelitis caused by endemic transmission of wild virus in the United States occurred in 1979, with an outbreak among the Amish in several Midwest states. A global effort to eradicate polio, led by the World Health Organization, UNICEF, and The Rotary Foundation, began in 1988 and has relied largely on the oral polio vaccine developed by Albert Sabin.[15] The disease was entirely eradicated in the Americas by 1994. Polio was officially eradicated in 36 Western Pacific countries, including China and Australia in 2000.[16,17] Europe was declared polio-free in 2002.[18] As of 2008, polio remains endemic in only four countries: Nigeria, India, Pakistan, and Afghanistan. Although poliovirus transmission has been interrupted in the much of the world, transmission of wild poliovirus does continue and creates an ongoing risk for the importation of wild poliovirus into previously polio-free regions. If importations of poliovirus occurs, outbreaks of poliomyelitis may develop, especially in areas with low vaccination coverage and poor sanitation. As a result, high levels of vaccination coverage must be maintained.[19]

Inactivated vaccine;

The Salk vaccine, or inactivated poliovirus vaccine (IPV), is based on three wild, virulent reference strains, Mahoney (type 1 poliovirus), MEF-1 (type 2 poliovirus), and Saukett (type 3 poliovirus), grown in a type of monkey kidney tissue culture (Vero cell line), which are then inactivated with formalin.[20] The injected Salk vaccine confers IgG-mediated immunity in the bloodstream, which prevents polio infection from progressing to viremia and protects the motor neurons, thus eliminating the risk of bulbar polio and post-polio syndrome.[21]

The Salk vaccine is given in two intramuscular injections spaced one month apart and requires boosters every 5 years. Because of the way it is inactivated, the vaccine is safe for those with compromised (weakened) immune systems

An enhanced-potency IPV was licensed in the United States in November 1987, and is currently the vaccine of choice in the United States.The first dose of polio vaccine is given shortly after birth, usually between 1–2 months of age, a second dose is given at 4 months of age.The timing of the third dose depends on the vaccine formulation but should be given between 6–18 months of age.[22]A booster vaccination is given at 4 to 6 years of age, for a total of four doses at or before school entry.[23] In some countries, a fifth vaccination is given during adolescence. Routine vaccination of adults (18 years of age and older) in developed countries is neither necessary nor recommended because most adults are already immune and have a very small risk of exposure to wild poliovirus in their home countries.

In 2002, a pentavalent (5-component) combination vaccine (called Pediarix) containing IPV was approved for use in the United States. The vaccine also contains combined diphtheria, tetanus, and acellular pertussis vaccines (DTaP) and a pediatric dose of hepatitis B vaccine.[24] In the UK, IPV is combined with tetanus, diphtheria, pertussis and *Haemophilus influenzae* type b vaccines. When the current formulation of IPV is used, 90% or more of individuals develop protective antibody to all three serotypes of poliovirus after two doses of inactivated polio vaccine (IPV), and at least 99% are immune to poliovirus following three doses. The duration of immunity induced by IPV is not known with certainty, although a complete series is thought to provide protection for many years.[25]

Oral vaccine;

Oral polio vaccine (OPV) is a live-attenuated vaccine, produced by the passage of the virus through non-human cells at a sub-physiological temperature, which produces spontaneous mutations in the viral genome.[26] Oral polio vaccines were developed by several groups, one of which was led by Albert Sabin. Other groups, led by Hilary Koprowski and H.R. Cox, developed their own attenuated vaccine strains. In 1958, the National Institutes of Health created a special committee on live polio vaccines. The various vaccines were carefully evaluated for their ability to induce immunity to polio, while retaining a low incidence of neuropathogenicity in monkeys. Based on these results, the Sabin strains were chosen for worldwide distribution.[27]

There are 57 nucleotide substitutions which distinguish the attenuated Sabin 1 strain from its virulent parent (the Mahoney serotype), two nucleotide substitutions

attenuate the Sabin 2 strain, and 10 substitutions are involved in attenuating the Sabin 3 strain. The primary attenuating factor common to all three Sabin vaccines is a mutation located in the virus's internal ribosome entry site (or IRES).[28] which alters stem-loop structures, and reduces the ability of poliovirus to translate its RNA template within the host cell.[29] The attenuated poliovirus in the Sabin vaccine replicates very efficiently in the gut, the primary site of infection and replication, but is unable to replicate efficiently within nervous system tissue. OPV also proved to be superior in administration, eliminating the need for sterile syringes and making the vaccine more suitable for mass vaccination campaigns. OPV also provided longer lasting immunity than the Salk vaccine.

In 1961, type 1 and 2 monovalent oral poliovirus vaccine (MOPV) was licensed, and in 1962, type 3 MOPV was licensed. In 1963, trivalent OPV (TOPV) was licensed, and became the vaccine of choice in the United States and most other countries of the world, largely replacing the inactivated polio vaccine.[30] A second wave of mass immunizations led to a further dramatic decline in the number of polio cases. Between 1962 and 1965 about 100 million Americans (roughly 56% of the population at that time) received the Sabin vaccine. The result was a substantial reduction in the number of poliomyelitis cases, even from the much reduced levels following the introduction of the Salk vaccine.[31]

OPV is usually provided in vials containing 10-20 doses of vaccine. A single dose of oral polio vaccine (usually two drops) contains 1,000,000 infectious units of Sabin 1 (effective against PV1), 100,000 infectious units of the Sabin 2 strain, and 600,000 infectious units of Sabin 3. The vaccine contains small traces of antibiotics—neomycin and streptomycin—but does not contain preservatives. One dose of OPV produces immunity to all three poliovirus serotypes in approximately 50% of recipients. Three doses of live-attenuated OPV produce protective antibody to all three poliovirus types in more than 95% of recipients. OPV produces excellent immunity in the intestine, the primary site of wild poliovirus entry, which helps prevent infection with wild virus in areas where the virus is endemic. The live virus used in the vaccine is shed in the stool and can be spread to others within a community, resulting in protection against poliomyelitis even in individuals who have not been directly vaccinated. IPV produces less gastrointestinal immunity than does OPV, so persons who receive IPV are more easily infected with wild poliovirus. In regions without wild poliovirus, inactivated polio vaccine is the vaccine of choice.In regions with higher incidence of polio, and thus a different relative risk between efficacy and reversion of the vaccine to a virulent form, live vaccine is still used. The live virus also has stringent requirements for transport and storage, which are a problem in some hot or remote areas. As with other live-virus vaccines, immunity initiated by OPV is probably lifelong.[32]

The Sabin oral vaccine is given in 3 doses in the first two years of life, and a booster is given when the child starts school. Further boosters are not given unless the patient is exposed to polio or will be traveling to an endemic region. The advantages of a live, oral vaccine are its long-lasting immunity, the prevention of reinfection of the digestive tract, and the lower cost of administering the vaccine orally because sterile syringes and needles are not necessary. However, a major disadvantage is that it cannot be used for patients with compromised immune systems because it is a live virus and can cause disease in these patients. It also cannot be used by those in close contact with immunocompromised patients because the live virus in the vaccine can be shed in the feces of those who ingest it, and can possibly be transmitted to the immunocompromised patient. Another disadvantage of the Sabin oral vaccine is that those who have an enterovirus infection of the gastrointestinal tract when taking the oral vaccine may not develop the immune response. Clearly, both vaccines have their advantages and disadvantages with regard to relative safety and cost.[33]

Iatrogenic (vaccine-induced) polio;

A major concern about the oral polio vaccine (OPV) is its known ability to revert to a form that can achieve neurological infection and cause paralysis.[34] Clinical disease, including paralysis, caused by vaccine-derived poliovirus (VDPV) is indistinguishable from that caused by wild polioviruses.[35] This is believed to be a rare event, but outbreaks of vaccine-associated paralytic poliomyelitis (VAPP) have been reported, and tend to occur in areas of low coverage by OPV, presumably because the OPV is itself protective against the related outbreak strain.[36,37]

The rate of vaccine-associated paralytic poliomyelitis (VAPP) varies by region but is generally about 1 case per 750,000 vaccine recipients.[38] VAPP is more likely to occur in adults than in children. In immunodeficient children, the risk of VAPP is almost 7,000 times higher, particularly for persons with B-lymphocyte disorders (e.g., agammaglobulinemia and hypogammaglobulinemia), which reduce the synthesis of protective antibodies. The World Health Organization considers the benefits of vaccination to far outweigh the

risk of vaccine derived polio. Outbreaks of vaccine derived polio have been stopped by multiple rounds of high-quality vaccination, in order to immunize the entire population.[39]

In the exciting research field of recombinant biotechnology, scientists are also attempting genetic alteration of the poliovirus. Researchers are using Escherichia coli (a common bacterium that inhabits the gastrointestinal tract of humans) as a host for bacterial gene cloning. Work is being done to take the genes of poliovirus which code for the synthesis of the viral capsid (the protein coat of a virus particle) and to combine it with E.coli's genes. The E.coli can then synthesize viral capsid proteins to be used in making a vaccine. This latter approach eliminates any possibility of the virus infecting the vaccinated patient because the vaccine contains only a part of the virus, excluding potentially dangerous content.

Because OPV is inexpensive, easy to administer, and produces excellent local immunity in the intestine (which helps prevent infection with wild virus in areas where it is endemic), it has been the vaccine of choice for controlling poliomyelitis in many countries.[40] On very rare occasions (about 1 case per 750,000 vaccine recipients) the attenuated virus in OPV reverts into a form that can paralyze. Most industrialized countries have switched to IPV, which cannot revert, either as the sole vaccine against poliomyelitis or in combination with oral polio vaccine.[41]

Conclusion

Debate between safety and cost will continue, but we are fortunate to have two good alternatives to choose from. Both vaccines are currently in use throughout the world. Vaccination is the only effective method of preventing poliomyelitis. Hygienic measures help limit the spread of infection among young children, but immunization is necessary to control transmission among all age groups. Both killed and live attenuated vaccines are available and both are safe and effective when used correctly. In developing countries live attenuated vaccine are mostly used. Research continues to improve these vaccines. More effective culturing and purification techniques have been developed, allowing the vaccines to induce higher levels of antibody formation.

References

1. Brooks GF, Butel JS, Morse SA. Poliomyelitis. In: Jewetz, Melnick, & Adelberg's medical microbiology. 24th ed. Boston: McGraw-Hill 2007; 487-93
2. Ray CG Enteroviruses. Sherris Medical Microbiology, 4th ed. New York, McGraw Hill.2004.535
3. Katz, Samuel L, Gershon, Anne A.; Krugman, Saul, Hotez, Peter J. Krugman's infectious diseases of children. St. Louis: Mosby 2004; 81–97.
4. Anonymous[a] National guideline for AFP and vaccine preventable diseases survillance. WHO Bangladesh 2008; 7-11
5. Carbone M. Simian virus 40 and human tumors: It is time to study mechanisms. J Cell Biochem1999; 76 :189–93.
6. Schonberger L, Kaplan J, Kim-Farley R, Moore M, Eddins D, Hatch M . Control of paralytic poliomyelitis in the United States. Rev Infect Dis1984; 6:23-6
7. Vilchez R, Kozinetz C, Arrington A, Madden C, Butel J .Simian virus 40 in human cancers. Am J Med 2003; 114: 675–84.
8. Engels E . Cancer risk associated with receipt of vaccines contaminated with simian virus 40: epidemiologic research . Expert Rev Vaccines 2004;4:197–206.
9. Eddy B, Borman G, Berkeley W, Young R . Tumors induced in hamsters by injection of rhesus monkey kidney cell extracts. Proc Soc Exp Biol Med1961; 107: 191–7.
10. A Science Odyssey: People and Discoveries PBS. 1998. http://www.pbs.org/ wgbh/aso/databank/entries/dm52sa.html. (Accessed on 29.11 2008)
11. Aylward RB. Eradicating polio: today's challenges and tomorrow's legacy. Annals Tropical Med Parasitol 2006; 100 : 401–13.
12. Centers for Disease Control and Prevention (CDC). Update on vaccine-derived polioviruses.MMWR Morb. Mortal. Wkly. Rep.2006;55:1093–7. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5540a3.htm. (Accessed on 29.11 2008)
13. Wild Poliovirus Weekly Update. Global Polio Eradication Initiative.2008;11-25. http://www.polioeradication.org/casecount.asp. (Accessed on 29.11 2008)
14. Fine P, Carneiro I. Transmissibility and persistence of oral polio vaccine viruses: implications for the global poliomyelitis eradication initiative. Am J Epidemiol1999;150:1001–21.
15. Mastny, Lisa . Eradicating Polio: A Model for International Cooperation . Worldwatch Institute. http://www.worldwatch.org/node/1644. (Accessed on 19.11 2008).
16. General News. Major Milestone reached in Global Polio Eradication: Western Pacific Region is certified Polio-Free. Health Educ Res 2000;16 : 109. http://her.oxfordjournals.org/cgi/reprint/16/1/109.pdf. (Accessed on 29.11 2008)

17. D'Souza R, Kennett M, Watson C. Australia declared polio free .Commun Dis Intell 2002; 26 : 253–60.
18. European Region of the World Health Organization. Europe achieves historic milestone as Region is declared polio-free 2002. http://www.who.int/mediacentre/news/releases/release euro02/en/index.html. (Accessed on 23.08 2008) .
19. Centers for Disease Control and Prevention (CDC). International Notes Certification of Poliomyelitis Eradication – the Americas, Morbidity and Mortality Weekly Report (Centers for Disease Control and Prevention)1994;43:720–2.
20. Kew O, Sutter R, de Gourville E, Dowdle W, Pallansch M . Vaccine-derived polioviruses and the endgame strategy for global polio eradication Annu Rev Microbiol 2005;59: 587–635.
21. Polio Victory Remembered as March of Dimes Marks 50th Anniversary of Salk Vaccine Field Trials. News Desk. 2004-04-26. http://www.marchofdimes.com/aboutus/10651_11681.asp. (Accessed on 29.11 2008) .
22. Joint Committee on Vaccination and Immunisation, David Salisbury , Mary Ramsay, Karen Noakes , Immunisation Against Infectious Disease. Edinburgh: Stationery Office.2006; 313–29. http://www.immunisation.nhs.uk/files/GB_26_polio.pdf (Accessed on 23.11.2008)
23. Poliomyelitis prevention: recommendations for use of inactivated poliovirus vaccine and live oral poliovirus vaccine. American Academy of Pediatrics Committee on Infectious Diseases.Pediatrics1997;99:300–5. http://pediatrics.aappublications.org/cgi/content/full/99/2/300. (Accessed on 19.11 2008).
24. Atkinson W, Hamborsky J, McIntyre L, Wolfe S, eds. Epidemiology and Prevention of Vaccine-Preventable Diseases (The Pink Book) 10th ed. Washington D.C.: Public Health Foundation. http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/polio-508.pdf. (Accessed on 29.11 2008) .
25. Robertson,Susan.Module6;Poliomyelities. The Immunological Basis for Immunization Series. World Health Organization (Geneva, Switzerland). http://www.who.int/vaccines-documents/DocsPDF-IBI-e/mod6_e.pdf. (Accessed on 29.11 2008) .
26. Sabin A, Ramos-Alvarez M, Alvarez- Amezquita J, et al.Live, orally given poliovirus vaccine. Effects of rapid mass immunization on population under conditions of massive enteric infection with other viruses. JAMA 1960;173: 1521–6.
27. Competition to develop an oral vaccine. Conquering Polio. Sanofi Pasteur SA. 2007-02-02. http://web.org/web/20071007095443/http://www.polio.info/polio-eradication/front/templates/index.jsp?siteCode=POLIO&codeRubrique=34&lang=EN. (Accessed on 16.10 2007) .
28. Ochs K, Zeller A, Saleh L, et al. Impaired binding of standard initiation factors mediates poliovirus translation attenuation. J. Virol 2003; 77:115–22.
29. Gromeier M, Bossert B, Arita M, Nomoto A, and Wimmer E.Dual stem loops within the poliovirus internal ribosomal entry site control neurovirulence. J Virol 1999;73:958-64.
30. Pearce J. Salk and Sabin: poliomyelitis immunization. J Neurol Neurosurg Psychiatry 2004;75:1552.
31. Smallman-Raynor, Matthew . Poliomyelitis: A World Geography: Emergence to Eradication. Oxford University Press, USA. 2006
32. Centers for Disease Control and Prevention. Recommended adult immunization schedule---United States, MMWR. 2009;57;Q1-Q4. (Accessed on 9.11.2008).
33. American Academy of Pediatrics Committee on Infectious Diseases. Recommended immunization schedules for children and adolescents--United States. Pediatrics. 2008;121:219-20.
34. Shimizu H, Thorley B, Paladin FJ, et al. Circulation of type 1 vaccine-derived poliovirus in the Philippines in 2001.J. Virol.2004; 78: 13512–21.
35. Cono J, Alexander LN. Chapter 10: Poliomyelitis. Vaccine Preventable Disease Surveillance Manual. 2002; 12-24
36. Kew O, et al.Outbreak of poliomyelitis in Hispaniola associated with circulating type 1 vaccine-derived poliovirus. Science 2002; 296: 356–9.
37. Yang CF, Naguib T, Yang SJ, et al. Circulation of endemic type 2 vaccine-derived poliovirus in Egypt from 1983 to 1993. J Virol 2003;77 : 8366–77.
38. Racaniello V. One hundred years of poliovirus pathogenesis. J Virology 2006; 344: 9–16.
39. What is vaccine-derived polio?WHO.2007-10-08. http://www.who.int/features/qa/64/en/index.html. (Accessed on 29.11 2008) .
40. Strickler H, Rosenberg P, Devesa S, Hertel J, Fraumeni J, Goedert J. Contamination of poliovirus vaccines with simian virus 40 (1955-1963) and subsequent cancer rates. JAMA1998; 279: 292–5.
41. Olin P, Giesecke J . Potential exposure to SV40 in polio vaccines used in Sweden during 1957: no impact on cancer incidence rates 1960 to 1993. Dev Biol Stand1998; 94: 227–33.

REVIEW ARTICLE

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Ocular Allergy - A Review

Md. Abu Nayeem Chowdhury and Begum Luthfun Naher[2]

Allergic eye disease

is a common ocular problem. It is one part of the whole spectrum of allergic diseases, which share a common initiating mechanism and a characteristic pattern of inflammation[1]. The milder forms of allergic eye disease have fluctuating symptoms of itching, tearing, and lid swelling which may be distressing but not sight threatening. Chronic forms of the disease give rise to more severe symptoms including pain, visual loss from corneal scarring, cataract or glaucoma, and disfiguring skin and lid changes[2]. Allergic conjunctivitis (AC) is a common allergic disease and which is a type I hypersensitivity reaction mediated by IgE[3]. Ocular allergies are a major source of discomfort and annoyance and its symptoms often interfere with daily activities [4].

Types of allergic conjunctivitis

Allergic conjunctivitis is a group of diseases affecting the ocular surface and is usually associated with type 1 hypersensitivity reactions. It is of 2 types:-1) Acute and 2) Chronic. Acute allergic conjunctivitis comprises two acute disorders:- (i) seasonal allergic conjunctivitis and (ii) perennial allergic conjunctivitis and chronic allergic conjunctivitis comprises 3 chronic diseases:-(i) vernal keratoconjunctivitis (ii) atopic keratoconjunctivitis and (iii) giant papillary conjunctivitis[5].SAC (seasonal allergic conjunctivitis) typically have symptoms of acute allergic conjunctivitis for a defined period of time; in spring when the predominant airborne allergen is tree pollen; in summer when the predominant allergen is grass pollen; or in fall when the predominant allergen is weed pollen PAC(perennial allergic conjunctivitis) may have symptoms that last the whole year. Common household allergens such as dust mite, cockroaches, and pet dander may be responsible for the symptoms of PAC VKC (Vernal keratoconjunctivitis) is a chronic bilateral inflammation of the conjunctiva, commonly associated with a personal and/or family history of atopy. More than 90% of patients with VKC exhibit one or more atopic conditions such as asthma, eczema or seasonal allergic rhinitis

AKC (Atopic keratoconjunctivitis) is a bilateral inflammation of conjunctiva and eyelids, which has a strong association with atopic dermatitis. Approximately 3% of the population is afflicted with atopic dermatitis and of these approximately 25% have ocular involvement. GPC (Giant papillary conjunctivitis) is an immune-mediated inflammatory disorder of superior tarsal conjunctiva. As the name implies, the primary finding is the presence of "giant" papillae, which are typically greater than 0.3 mm in diameter. It is believed that GPC represents an immunologic reaction to a variety of foreign bodies, which may cause prolonged mechanical irritation to the superior tarsal conjunctiva. Although contact lenses (hard and soft) are the most common irritant, ocular prostheses, extruded scleral buckles and exposed sutures following previous surgical intervention may precipitate GPC [6].

Risk factors

Allergic conjunctivitis (AC) is a common allergic disease typically elicited by airborne allergens such as pollen, grass, weeds and animal dander. It is a type I hypersensitivity reaction mediated by IgE in response to these environmental antigens [3]. Acute Allergic Conjunctivitis is caused by airborne allergens and can be seasonal or perennial, is rarely associated with permanent visual impairment. However, it can cause considerable discomfort and adversely impact quality of life[7]. Individuals with seasonal allergic conjunctivitis typically have symptoms of acute allergic conjunctivitis for a defined period of time; the predominant airborne allergen in spring is tree pollen; in summer grass pollen; and in fall the predominant allergen is weed pollen. Other common household allergens such as dust mite, cockroaches, and pet dander may be responsible for the

1. Assistant professor, Department of Pharmacology, Sylhet Women's Medical College, Sylhet, 3100, Bangladesh.
2. Assistant professor, Department of Pharmacology, Sylhet M.A.G. Osmani Medical College, Sylhet, 3100, Bangladesh.

symptoms of perennial allergic conjunctivitis. Vernal keratoconjunctivitis is commonly associated with a personal and/or family history of atopy, atopic keratoconjunctivitis is associated with atopic dermatitis and giant papillary conjunctivitis represents an immunologic reaction to a variety of foreign bodies[6].

Incidence and Prevalence

The prevalence of allergic disease is increasing, probably through environmental factors. Acute allergic disease accounts for up to 2.7% of all medical consultations seen in general practice, giving an annual rate of 51 per 1000 of the practice population [2].Ocular allergy refers to a variety of hypersensitivity disorders that affect the lid, conjunctiva, and/or cornea. Its incidence is estimated at over 20% of the general population in the United States [5].Some studies have shown that up to 30% of the US population has some form of allergy and most have ocular involvement [8]. Allergic eye disease affects about one-fifth of the world's population[9]. Approximately 20% of the U.S. population suffers from the signs and symptoms of ocular allergy [4].Allergies occur frequently in all pediatric age groups, affecting up to 40% of children. Allergic conjunctivitis is the most common ocular allergy syndrome among children[10]. 25%-50% of all cases of ocular allergy is seasonal allergic conjunctivitis, 0.03% cases is perennial allergic conjunctivitis. Around 3% of the populations have atopic dermatitis, of which 25%-40% have some form of ocular involvement. 0.5% of allergic eye disease is Vernal keratoconjunctivitis, they are usually under 14 years of age, with males predominating over females in a ratio of 2:1. Giant papillary conjunctivitis is an iatrogenic disease associated with foreign bodies in the eye such as contact lenses, prostheses or protruding corneal sutures [2].

Diagnostic criteria

Diagnosis of allergic conjunctivitis generally is made by history and by clinical examination. Important features of history include a personal or family history of atopic disease, such as allergic rhinitis, bronchial asthma and/or atopic dermatitis. Perhaps the most important feature in the clinical history is the symptom of itching. Other signs and symptoms include conjunctival hyperaemia, tearing, mucus discharge, photophobia, chemosis and lid oedema. Lab Studies: Seasonal and perennial allergic conjunctivitis. Superficial conjunctival scrapings may help to establish the diagnosis by revealing eosinophils, but only in the most severe cases, since eosinophils are typically present in the deeper layers of the substantia propria of the conjunctiva. Therefore, the absence of eosinophils on conjunctival scraping does not rule out the diagnosis of allergic conjunctivitis. Many investigators have described measurement of tear levels of various inflammatory mediators such as IgE, histamine, and tryptase as indicators of allergic activity[6].

Pathophysiology

Ocular allergies occur when sensitized individuals are exposed to specific airborne allergens. An allergen, once it has reached the eye, binds to IgE on conjunctival mast cells triggering a cascade of reactions resulting in the release of histamine and other allergic and inflammatory mediators from the mast cell. Histamine is the primary mediator released and the only mediator that has been shown to cause the entire spectrum of signs and symptoms of ocular allergy (itching, redness, chemosis, lid swelling and tearing). Itching is the hallmark symptom of ocular allergy and can impact patients' ability to go about daily functions, while the redness and lid swelling of allergy are the predominant signs of allergy and can cause concern about appearance as well as discomfort[11]. Eosinophils are major effector cells in various allergic diseases and asthma. The eye, in particular, is a common site of allergic inflammation. In allergic conjunctivitis (AC), a first immediate reaction initiated by mast cells take place followed by a late phase reaction characterized by a massive influx of eosinophils. In normal conjunctiva, eosinophils are not normally found in the epithelium but their numbers are increased in atopic keratoconjunctivitis (AKC) and vernal keratoconjunctivitis (VKC), both in the conjunctival epithelium, subepithelium and tears. Eosinophils contain toxic cationic proteins such as eosinophil peroxidase (EPO), eosinophil cationic protein (ECP), eosinophil derived neurotoxin (EDN) and major basic protein (MBP), which, when secreted, can lead to serious corneal epithelium damage. Deposition of MBP has been observed in AC, which was shown to be responsible for the inhibition of corneal epithelial wound healing [12].

Prevention

Avoidance of the offending antigen is the primary way to prevent allergic conjunctivitis. Identify the responsible allergen(s) can help the individual to establish ways to avoid the specific allergen, whether it is an environmental allergen or a household allergen such as dust mite or pet dander. In addition, contact reactions

caused by medications or cosmetics are treated best by avoidance. Therefore patients should be encouraged to identify the allergen that is causing their problem and to avoid it [6]. Numerous treatment options have become available for the relief of acute symptoms. Avoidance should always be the first line in therapy but in most cases, is not practical, especially with pollen allergies[13].

Pharmacological Management

Allergic conjunctivitis can be treated with a variety of drugs, which include topical antihistamines, mast cell stabilizers, NSAIDS and corticosteroids[6;12]. *Topical antihistamines* -- Act by competitive inhibition of histamine at the H_1 receptor and block effects of endogenously released histamine. *Mast cell stabilizers* -- Inhibit sensitized mast cell degranulation when exposed to specific antigens by inhibiting the release of mediators from the mast cells and block calcium ions from entering the mast cell. *Corticosteroids* -- Have both anti-inflammatory (glucocorticoid) and salt retaining (mineralocorticoid) properties. Glucocorticoids have profound and varied metabolic effects. In addition, these agents modify the body's immune response to diverse stimuli. *Nonsteroidal anti-inflammatory drugs (NSAIDs)* -- Their mechanism of action is believed to be through inhibition of the cyclooxygenase enzyme that is essential for the biosynthesis of prostaglandins, which results in vasoconstriction, decrease in vascular permeability and leukocytosis, and decrease intraocular pressure[6].

Antihistamines are useful treatment for the majority of cases. Corticosteroids may be used for severe cases for a limited time. Cromolyn sodium and lodoxamide ophthalmic solution may be helpful in the prophylaxis of symptoms during the allergy season, but these agents require frequent dosing. Olopatadine hydrochloride is a mast cell stabilizer and antihistamine that can be dosed twice a day[13].

As monotherapy, oral antihistamines are an excellent choice, unfortunately, despite their efficacy in relief of allergic symptoms, systemic antihistamines may result in unwanted adverse effects, such as drowsiness and dry mouth. Newer second-generation antihistamines (cetirizine, fexofenadine, loratadine and desloratadine) are preferred over older first-generation antihistamines in order to avoid the sedative and anticholinergic effects that are associated with first-generation agents. When the allergic symptom or complaint, such as ocular pruritis, is isolated, focused therapy with topical (ophthalmic) antihistamines is often efficacious and clearly superior to systemic antihistamines. Topical antihistamins not only provide faster and superior relief than systemic antihistamines, but they may also possess a longer duration of action than other classes of drug including vasoconstrictors, pure mast cell stabilizers, NSAIDs and corticosteroids. Many antihistamines have anti-inflammatory properties as well. Some of this anti-inflammatory effect seen with 'pure' antihistamines (levocabastine and emedastine) may be directly attributed to the blocking of the histamine receptor. Some topical multiple-action histamine H_1-receptor antagonists (olopatadine, ketotifen, azelastine and epinastine) have been shown to prevent activation of neutrophils, eosinophils and macrophages, or inhibit release of leukotrienes, platelet-activating factors and other inflammatory mediators. Topical vasoconstrictor agents provide rapid relief, especially for redness; however, the relief is often short-lived, and overuse of vasoconstrictors may lead to rebound hyperaemia and irritation. Another class of topical agents, mast cell stabilizers (sodium cromoglicate, nedocromil and lodoxamide), may be considered; however, they generally have a much slower onset of action. In the class of topical NSAIDs, ketorolac has been promoted for ocular itching but has been found to be inferior for relief of allergic conjunctivitis when compared with olopatadine. Lastly, topical corticosteroids may be considered for severe seasonal ocular allergy symptoms, although long-term use should be avoided because of risks of ocular adverse effects, including glaucoma and cataract formation [15].

Treatments should be simple, comfortable and safe. They should be able to respond to an ongoing attack but also provide long-term relief from symptoms. Mast cell degranulation is central to all forms of ocular allergic disease and so treatment should be concentrated on preventing this process or antagonizing the effects of the primary mediator, histamine. Olopatadine is a relatively new selective H_1 antagonist that has mast cell stabilizing properties and has been shown to affect release of TNFα and various cytokines from conjunctival epithelial cells[14].Newer topical medications are being used that have multiple actions, such as an antihistaminic effect coupled with mast-cell stabilization and which require reduced daily dosing due to their longer duration of action[9].

The FDA approved Ketotifen in 1999 for the prevention of itching associated with allergic conjunctivitis. It is a potent H_1 antihistamine that has been shown to inhibit histamine and tryptase release by 90% in human conjunctival mast cells and inhibit the release of inflammatory mediators from basophils and

neutrophils and inhibit the production and release of certain leukotrienes [17]. It exerts anti-anaphylactic and antihistamine activities, mainly through inhibition of the release of chemical mediators such as histamine and leukotrienes (LT) from sensitized mast cells[12].

Olopatadine is a human conjunctival mast cell stabilizer with anti-histaminic activity [20;21]. It is a relatively new selective H_1 antagonist that has mast cell stabilizing properties and has been shown to affect release of TNFα and various cytokines from conjunctival epithelial cells [12]. Olopatadine is an selective histamine H_1 –antagonist that inhibits the type 1 immediate hypersensitivity reaction including inhibition of histamine induced effects on human conjunctival epithelial cells. [22].Olopatadine was the first dual-action agent to be approved by the FDA in 1996 for all the signs and symptoms of allergic conjunctivitis[17],approved in Japan in December, 2000 and in the European Union, in February 2002[23].A significantly greater percentage of patients preferred to use olopatadine in an environmental study of patient preference[11].In preclinical and clinical studies, olopatadine had greater efficacy and comfort than other anti-allergic agents available today for ophthalmic use [24].The results of a randomized, placebo-controlled conjunctival allergen challenge model study suggest that epinastine and ketotifen are not significantly different with respect to anti-itching efficacy [25].Olopatadine is significantly more effective than epinastine in CAC model study[26].Olopatadine 0.1% has become a prototype drug for relief of the signs and symptoms of seasonal ocular allergy [27] and has a rapid initial action (minutes) that extends for hours, which allows a twice daily schedule[28].

References

1. Leonardi A. Emerging drugs for ocular allergy; Expert Opinion on Emerging Drugs 2005; 10: 505-20.
2. McGILL JI , Holgate ST , Church MK and Anderson DF. Allergic eye disease mechanisms: Br J Ophthalmol 1998; 82:1203-14.
3. Yaylali V,Demirlenk I,Tatlipinar S,Ozbay D,Esme A,Yildirin C et al. Comparative study of 0.1% olopatadine hydrochloride and 0.5% ketorolac tromethamine in the treatment of seasonal allergic conjunctivitis. Acta Ophthalmol Scand 2003;81:378-82.
4. Gross RD. Ocular allergy signs, symptoms best handled after specific answered. Ophthalmol Times 2002;15: 75-81.
5. Ono SJ and Abelson MB. Allergic conjunctivitis: update on pathophysiology and prospects for future treatment. J Allergy Clin Immunol 2005; 115 :118-22.
6. Majmudar PA. Conjunctivitis, Allergic, [Online], eMedicine World Medical Library, (Last update November 4, 2005); Available from: http://www.emedicine.com/oph/topic85.htm [16 April 2007].
7. Behar L, Kostic D. Contemporary Management of Allergic Conjunctivitis', [Online], (31 March 2004);Pharmacy Times, 1065 Old Country Road, Westbury,NY11590.Available from : http://secure.pharmacytimes.com/lessons/html/conjunct2001.htm [26 September 2007]
8. Bielory L. Current reviews of allergy and clinical immunology: J Allergy Clinical Immunol 2000;106:1019-32.
9. Manzouri B, Flynn TH Larkin F, Ono SJ and Wyse R. Pharmacotherapy of allergic eye disease Expert Opinion on Pharmacother 2006;7:1191-200.
10. Abelson MB and David G. Ocular allergy in pediatric practice. Curr Allergy Asthma 2006; 6:306-11
11. Leonardi A and Zafirakis P. Efficacy and comfort of olopatadine versus ketotifen ophthalmic solutions: A double-masked, environmental study ofpatient preference.Current Medical Research Opinion, 2004; 20 : 1167-73.
12. Woerly G, Loiseau S, Loyens M, Schoch C and Capron M. Inhibitory effects of ketotifen on eotaxin-dependent activation of eosinophils: consequences for allergic eye diseases. Allergy, 2003;58:397-406.
13. Joss JD and Craig TJ. Seasonal allergic conjunctivitis: overview and treatment update. J American Osteopathic Asso 1999; 99 : Suppl, 13S-13S.
14. McGill J. A review of the use of olopatadine in allergic conjunctivitis.International Ophthalmol 2004;25 : 171-79.
15. Leonard B, Kenneth WL and Steve B. Efficacy and Tolerability of Newer Antihistamines in the Treatment of Allergic Conjunctivitis. Drugs 2005;65:215-28.
16. Greenwood C. The pharmacology of ketotifen. Chest 1982; 82:45-48.
17. Torkildsen G. Effective ocular allergy treatments are dual action. Ophthalmol Times 2006; 4: 45-61.
18. Grant SM, Goa KL, Fitton A, Sorkin EM. Ketotifen - A review of its pharmacodynamic and pharmacokinetic properties, and therapeutic use in

asthma and allergic disorders. Drugs 1990; 40 : 412-48.
19. Schoch C. Inhibition of Human Conjunctival Mast-Cell Degranulation by Ketotifen. J ocular pharmacol ther 2003; 19: 75-81.
20. Yanni JM, Stephens DJ, Miller ST, Weimer LK, Graff G, Parnell D et al.The in vitro and in ne (AL-4943A). an effective anti-allergic/antihistaminic agent. J Ocul Pharmacol Ther 1996, 12 : 389-400.
21. Brockman H, Graff G, Spellman J, Yanni J. A Comparison of the Effects of Olopatadine and Ketotifen on Model Membranes. Acta Ophthalmologic Scand 2000;78 : 10–15.
22. Abelson MB. A review of olopatadine for the treatment of ocular allergy. Expert Opinion Pharmacother 2004; 5 : 1979-94.
23. Ohmori D, Hayashi K, Kaise T, Ohshima E, Kobayashi S, Yamazaki T et al. Pharmacological, Pharmacokinetic and Clinical Properties of Olopatadine Hydrochloride, a New Antiallergic Drug. Japanese J Pharmacol 2002; 88 : 379-97.
24. Lichtenstein SJ, Abelson MB. Pharmacology, clinical efficacy and safety of olopatadine hydrochloride. Expert Review Clin Immunol 2006; 2: 341-51.
25. D'Arienzo PA, Leonardi A, Bensch G. Randomized, double- masked, placebo- controlled comparison of the efficacy of epinastine 0.05% ophthalmic solution and ketotifen fumarate 0.025% ophthalmic solution in the human conjunctival allergen challenge model. Clin Ther 24: 409-16.
26. Lanier BQ,Fine Gold I, D Arienzo P,Granet D,Arthur B, Ledgerwood.Clinical Efficacy of Olopatadine vs Epinstine Ophthalmic Solution in the Conjunctival Allergen Challenge Model. Current Med Res Opin 2004; 20 : 1227-33.
27. D'Arienzo PA. Olopatadine vs. Epinastine for the Treatment of Seasonal Ocular Allergy. Curr Med Res Opin 2004; 20:1227-33.
28. Aguilar AJ. Comparative Study of Clinical Efficacy and Tolerance in Seasonal Allergic Conjunctivitis Management with 0.1% Olopatadine Hydrochloride versus 0.05% Ketotifen Fumarate. Acta Ophthalmol Scand 2004; 78: 52–5.

CASE REPORT

The Osmani Medical Teachers Association Journal Volume 8 Number 2

Recurrent Biliary Ascariasis in a seven years old boy: A Case Report

Probhat Ranjan Dey[1], Mujibul Hoque[2], Biplob Kumer Saha[3], Rokiur Rahman[4]

Introduction

Ascaris lumbricoides continues to be one of the commonest human parasitic infestations with over one billion people affected worldwide[1]. Although the adult *Ascaris lumbricoides* normally resides in the small intestine, it has been known to migrate to various regions of the body such as lungs, urinary bladder, peritoneum, and biliary system. Invasion of biliary channel by *Ascaris lumbricoides* is known but its incidence varies, even in populations with high intestinal infestation rate [2]. The migrating worms can produce variety of manifestations ranging from biliary colic, ascending cholangitis, oriental cholangitis, bile duct strictures to hepatic granulomas and hepatic abscesses[3]. Recurrent attack of biliary ascariasis is reported rarely, specially in children.

Case Report

A seven years old boy was admitted into the inpatient department of Pediatrics with the complaints of severe colicky pain in the upper abdomen and vomiting for 5 days. There was a history of passage of a worm through the mouth 2 days back. He was admitted into the hospital for similar type of illness one year back and was diagnosed as a case of biliary ascariasis. He was then managed by conservative treatment. Physical examination revealed diffuse tenderness in the epigastric and right hypochondriac region. White cell count was 10,400/ cmm with 70% of polymorphs, 5% eosinophils and 25% lymphocytes. Serum bilirubin 1.6mg/dl. Plain X-ray of abdomen did not reveal any abnormality. Ultrasound examination of the hepatobiliary system showed a dilated common bile duct and a tubular structure within it. Endoscopy of the upper gastro-intestinal tract was done. A large round worm was seen in the ampula which was removed with FB forceps. But there was no symptomatic improvement. Ultrasound examination was done again and showed the previous findings in the common bile duct. The patient was kept on conservative treatment (nil per orally, intravenous fluids, anti-spasmodic and antibiotics). But no improvement was observed. The patient subsequently under went ERCP, which showed a grossly dilated biliary tree. A live *Ascaris lumbricoides* worm was removed by ERCP. After removal of the worm the patient's condition improved. He was given a course of mebendazole at discharge.

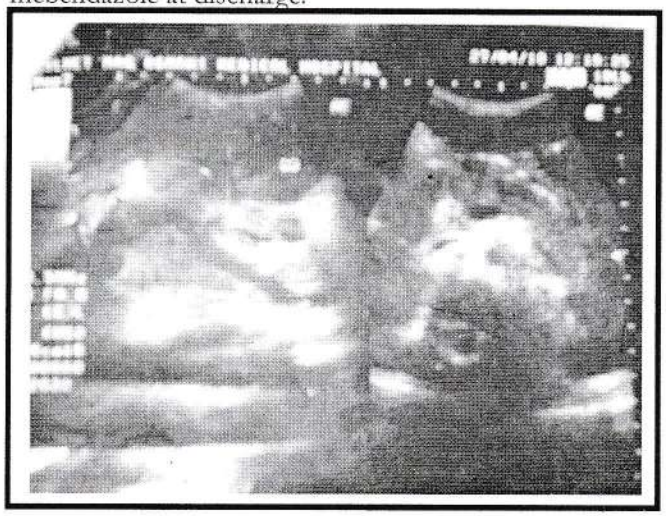


Photo -1. Ultrasonogram showing the worm in the common bile duct

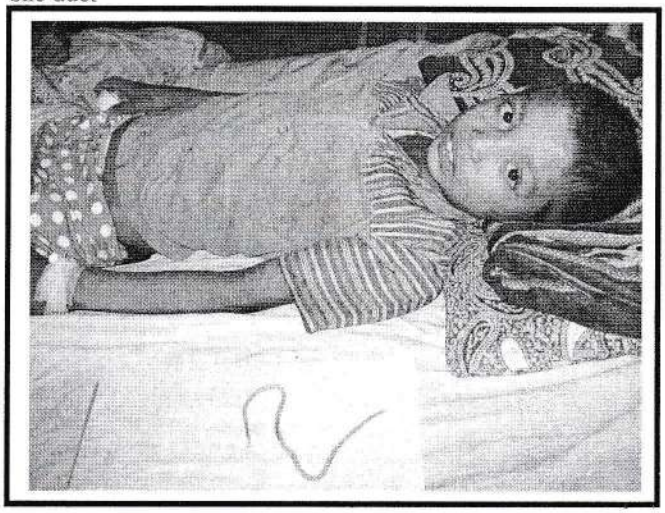


Photo -2. The worm after endoscopic removal

1. Assistant Professor, Department of Paediatrics, Sylhet MAG Osmani Medical College
2. Registrar, Department of Paediatrics, Sylhet MAG Osmani Medical College Hospital
3. Indoor Medical Officer, Department of Paediatrics, Sylhet MAG Osmani Medical College Hospital
4. Assistant Registrar, Department of Paediatrics, Sylhet MAG Osmani Medical College Hospital

DISCUSSION

Ascaris lumbricoides continues to be human parasitic infestations in the developing world. Biliary migration of the worm is infrequent, but can cause serious morbidity and mortality necessitating early recognition of the disease. In Bangladesh biliary invasion by ascaris worm in pediatric population is not very common but it is frequent in China [4].

Biliary ascariasis can produce a variety of manifestations. It can present with mild to severe recurrent right upper quadrant pain, and when complicated by secondary infection as ascending cholangitis [5]. The worm in the common bile duct may be alive or dead. The degenerated worm or ova may form a nidus for biliary sand and stones.

The worm may migrate into the liver where it excites granuloma formation. Degeneration of worm in the liver with secondary infection leads to hepatic abscess. *Ascaris lumbricoides* in biliary tree may cause hemobilia [6].

Usually one or two worms are present in the biliary channels but sometimes massive invasion occurs. Complications like septicemia and hepatic abscess are higher in massive invasions and require early diagnosis and treatment [4].

Ultrasonogram is highly useful in demonstration of worm. It may reveal typical linear opaque shadows [4].Sometimes ERCP is required[3].

Most cases will respond to conservative measures, the worm returning spontaneously to the intestine. Mebendazole or albendazole is given orally for deworming the intestine. Most author recommended early intervention with endoscopy since this has brought about a major reduction in the morbidity and mortality of this disease [7]. However Khuroo et al [8]. showed that ERCP/ Endoscopic intervention was required in only 29% of patients after failing conservative management. Our patient responded to conservative treatment at first time diagnosis but no response was observed during the second attack. Endoscopic removal was needed for the second attack.

CONCLUSION

When biliary ascariasis occurs for the first time, the common bile duct becomes dilated. The possibility of further invasion is increased through the dilate duct. So, when a child is diagnosed as a case of biliary ascariasis, the child should be on regular peroidic deworming therapy to prevent further attack of biliary ascariasis.

References

1. Gabaldon A, Modif C, Morishta K, Moscovski S, Sankale M, Standen DD. Control of Ascariasis. World Health Organ Tech Rep Ser 1997; 379: 1-39
2. Khuroo MS, Zargar SA. Biliary Ascariasis: A Common cause of Biliary and Pancreatic Disease in an Endemic area. Gastroenterology 1985; 88: 418-23
3. Yelline AE, Donoraw AZ. Biliary Lithiasis and Helminthiasis. Am J Surg 1981; 68: 468-73
4. Lioyd DA. Massive Hepatobiliary Ascariasis in Childhood. Br J Surg 1981; 68: 468-73
5. Crompton DW, Nesheim MC, Pawloski ZS editors. Ascariasis and its Prevention and Control. London: Taylor and Francis; 1989.
6. Khuroo MS, Zargar SA, Mahajan R. Hepatobiliary and Pancreatic Ascariasis in India. Lancet 1990; 335: 1503-6
7. Leung JW, Chung SC. Endoscopic Management of Biliary Ascariasis. Gastrointest Endosc 1988; 34: 318-20
8. Khuroo MS, Zargar SA, Yatto GN, Javid G, Dhar MY, Boda MI, et al. Worm Extraction and Biliary Drainage in Hepatobiliary and Pancreatic Ascariasis. Gastrointest Endosc 1993; 39: 680-5

Management guidelines of chronic Hepatitis-B

Hepatitis B virus (HBV) affects 350-400 million people worldwide and accounts annually for about one million deaths from cirrhosis, liver failure and hepatocellular carcinoma (HCC).[1] Global prevalence of HBV infection varies greatly and countries can be defined as high, intermediate and low based on prevalence of HBsAg carriers of ≥8%, 2-7% and <2% respectably.[2] Bangladesh belong to the intermediate region. Risk of developing chronic infection after acute exposure ranges from 90% in newborn to <5% in adult.[3] HBV infection may present either as HBeAg positive or HBeAg negative form. Prevalence of HBeAg negative form increasing over the last decade.[4] Eight genotype (A-H) have been identified and studies from Asia found type B is associated with more favourable treatment response than type C.[5]

Goal of therapy is to improve the quality of life and survival by preventing the development of cirrhosis, liver failure and HCC. However HBV infection cannot be completely eradicated due to persistence of covalently closed circular DNA (CCC DNA) in the nucleus of hepatocytes.[6]

Treatment indication for both HBeAg positive and HBeAg negative patients is based mainly on the serum HBV DNA level, ALT level and liver histology.

In HBeAg positive patients-

1. HBV DNA≥10^5 copies/ml→liver biopsy→treatment
   ALT > 2 ULN optional
2. HBV DNA ≥ 10^5 copies /ml→ liver biopsy
   ALT < 2 ULN[a]
   HAI[b] <7 HAI>7→Treat
   F[c] < I F>3
   Follow up
3. HBV DNA <10^5 copies/ml → Follow up
   ALT - normal

In HBeAg negative patients

Similar protocol mention above should be follow except HBV DNA level where it will be 10^4 copies /ml inspite of 10^5 copies/ml.

Follow up - ALT 3monthly 1st year then 6 monthly subsequently. HBV DNA annually. HBV DNA more frequently if ALT tends to rise.

However patients with cirrhosis and detected HBV DNA level treatment should be considered even if ALT is normal. Patients under 30 years of age with normal ALT and high HBV DNA level (>10^7IU/L) do not require immediate treatment, follow up is mendatory.[7]

Presently seven drugs are licensed for the treatment of HBV. Interferon α, pegylated interferon α-2a, lamivudine, adefovir, entacavir, telvibudine and tenofovir. Among the antiviral drugs peg IFN α, tenofovir and entacavir should be used as first line monotherapy. Due to high rate of drug resistance lamivudin, telbivudine and adefovir is used as second line drug treatment.[7]

Duration of treatment with peg IFN α is 48 weeks both for HBeAg positive and HBeAg negative patients. In case of oral antiviral drugs in HBeAg positive patients - treatment should be continued six to twelve months after HBe seroconversion. In HBeAg negative patients, treatment should be continued until HBsAg clearance is achieved. In decompansated cirrhosis and liver transplant patients life long treatment is required.

Children should be treated with conventional IFN-α and lamivadine. Studies are ongoing for other drugs. In pregnant women antiviral drugs should be avoided in the first trimester. Lamivudine, telbivudine or tenofovir can be used in third trimester if treatment is indicated.[8] Patients on immunosuppressive therapy (regardless of HBV DNA level) should receive oral antiviral drugs during therapy and 12 months after cessation of therapy. Patient having HCV coinfection should receive peg IFN-α and ribavirin. If there is recurrence of HBV infection after clearance of HCV, patient should be treated with oral antiviral drugs. In HIV co-infection- Patients who are not on HAART or to require HAART in the near future should be treated with peg IFN α, adefovir or telbivudine. Patients who are needed treatment simultaneously should receive lamivudine plus tenofovir or emtricitabine plus tenofovir.

In resistant cases appropriate drugs should be used e,g in

1. Lamivudine resistance switch to adefovir or tenofovir
2. Adefovir resistance switch to entacavir
3. Telbivudine resistance switch to tenofovir
4. Entacavir resistance use tenofovir

Current treatment guidelines do not recommend combination therapy except for patients in whom drug

resistance can precipitate or aggravate liver disease or hepatic failure.[9]

Recommendation for vaccination

1. First-degree relatives and house-hold contacts of HBsAg positive individuals (including sex partners).
2. All newborns born to HBsAg positive mothers. They should receive HBV immunoglobulin in addition to vaccination.
3. Injectable drug abusers.
4. All patients with congenital haemolytic anaemia and on renal dialysis.
5. All healthcare personnel.
6. All other persons seeking protection from HBV infection.

Unresolved issue and unmet needs -

1) Assess the efficacy of different durations (24 weeks to 2 years) and lower doses of pegylated interferon alpha.
2) Assess long-term efficacy and safety and resistance to new analogues (entecavir, telbivudine and tenofovir).
3) Assess the role of combination therapy with two NUCs to reduce resistance.
4) Assess the efficacy of the combination of pegylated interferon alpha with potent NUCs (entecavir or tenofovir) to increase HBe and HBs seroconversion rates.
5) Develop and assess new therapeutic approaches, particularly immunomodulatory therapies to enhance loss of HBeAg and HBsAg and subsequent seroconversion.

References

1. Lavanchy D. Hepatitis B virus epidemiology, disease burden, treatment, and current and emerging prevention and control measures. J Viral Hepa 2004;11: 97-107.
2. McMahon BJ. Epidemiology and natural history of hepatitis B. Semin Liver Dis 2005;25(Suppl 1):3-8.
3. Mast EE, Margolis HS, Fiore AE, et al. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendation of the Advisory Committee on Immunization Practices (ACIP) part1: immunization of infants, children, and adolescents. MMWR Recomm Rep 2005; 54 (RR-16):1-31.
4. Jules L, Dienstag, MD. Hepatitis B virus infection-Drug therapy. NEJM 2008; 359:1486-1500.
5. Chan HL, Hui AY, Wong ML, et al. Genotype C hepatitis B virus infection is associated with an increased risk of hepatocellular carcinoma. Gut 2004; 53:1494-8.
6. Europian Association for the Study of the Liver. EASL, Clinical practice guidelines: Management of chronic hepatitis B J Hepatol 2009; 50:227-42.
7. Lok ASF and McMahon BJ. American Association for the Study of Liver Diseases. AASLD guidelines, chronic hepatitis B: update 2009. Hepatol 2009; 50:1-36.
8. Van Zonneveld M, Van Nunen AB, Niesters HG et al. Lamivudine treatment during pregnancy to prevent perinatal transmission of hepatitis B virus infection. J Viral Hepat 2003;10:294.
9. Hoofnagle JH, Doo F, Liang TJ, Fleischer R, Lok AS. Management of hepatitis B: summary of a clinical research workshop. Hepatology 2007; 45:1056-75.

Md. Habibur Rahman
Professor
Department of Gastroenterology
Sylhet M.A.G. Osmani Medical College Sylhet

INFORMATION FOR THE CONTRIBUTORS

THE OSMANI MEDICAL TEACHERS ASSOCIATION JOURNAL **(OMTAJ)** IS THE OFFICIAL ORGAN OF THE TEACHERS ASSOCIATION OF SYLHET M A G OSMANI MEDICAL COLLEGE AND IS PUBLISHED BI-ANNUALLY *(JANUARY AND JULY EACH YEAR)*

The guidelines are in accordance with the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals".[1]

Subscription

The annual subscription rate for the non-members: medical students Taka 100/- and doctors Taka 200/- only.

Submission of manuscripts

The OMTAJ considers manuscripts for publication reporting original clinical or laboratory studies, reviews, case reports, medical progress and brief communications. Manuscript must not be longer than 2700 words. Please provide a word count excluding abstract and references.

Each manuscript must be accompanied by a covering letter from the corresponding author with a statement that the manuscript has been seen and approved by all authors and the material has not been previously submitted to or published elsewhere wholly or partially. A manuscript in duplicate together with tables and illustrations along with a copy in word 97/2000/word XP format in a 3.5" diskette/ CD should be sent to the Editor.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement) provided they do not contain any material that has been submitted or published elsewhere.

Please note the following: *Your letter must be typewritten and triple spaced; *Its text, not including references, must not exceed 250 words, if it is in reference of a recent journal article, or 400 words in all other cases (please provide a word count). *It must have no more than five references and one figure or table. *It must not be signed by any more than three authors. *Please include your full address, office-time telephone (and/or mobile) number, and e-mail address.

Preparation of the manuscript[2]

All papers must be written in English. All sections of the manuscript should be typed double-spaced, with left alignment in MS Word documents and on one side of good quality bond papers of A4 size (21x 29.7 cm) with margins of at least 2.5 cm., beginning each of the following sections on separate pages: title page, abstract, text, acknowledgments, references, individual tables, and legends for illustrations. Number pages consecutively, beginning with the title page.

Title page

The title page should contain: (1) the title of the article; (2) a short running head of fewer than 40 letter spaces; (3) name of the author (s); (4) institutional affiliation of each author; (5) name and address of the corresponding author.

Abstract

The second page should carry an unstructured abstract of not more than 150 words.

Text

The text of observational and experimental articles should be divided into sections with headings: Introduction, Methods, Results, and Discussion.

Acknowledgments

All acknowledgments including financial supports should be mentioned under the heading 'Acknowledgments' and not as a footnote on the first page or in the text.

References

Number references consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by Arabic numerals (1, 2, 3....). Follow the form of references used in the *Index Medicus,* including the style of abbreviations. Try to avoid using abstracts as references: 'unpublised observations' and 'personal communication' may be inserted in the text.

Information supplied in the references section of any manuscript is not usually checked by the editorial staff, and hence, the concerned author(s) bear total responsibilities of the references.

Following are few examples of references:

1. Standard Journal Article: (List all authors when six or less; when seven or more, list only first three and add *et al).* Akhter A, Haque R, Kholil M, Sultana Z, Fakir MAH. Effects of Oral Garlic on Testicular Micro-architecture of Adult Rat. Osmani Med Teachers Assoc J 2002; 1(1): 1-3.

2. Corporate Author in Journal: Committee for Computer Application in Clinical Microbiology. Bacterial Antimicrobial Susceptibility Pattern, 1988. J Infect Dis Antimicrob Agents 1991; 8: 25-39.

3. Letter to Editor: Yagupsky P, MA Menegu. Intraluminal colonization as a source of catheter-related infection. Antimicrob Agents Chemother 1989; 33: 2025. (Letter)

4. Corporate Author in Book: World Health Organization. On being in charge: a guide to management in primary health care, 2nd ed. England: World Health Organization 1992.

5. Chapter in Book: Wenzel RP. Organization for infection control. In: Mandell GL, Douglas RG, Bennett JE, eds. Principles and practice of Infectious Disease, 3rd ed. USA: Churchill Livingstone Inc 1990: pp. 2176-80.

6. Thesis/ Dissertation: Kaplan SJ. Post-hospital home health care: the elderly's access and utilization [dissertation]. St. Louis (MO): Washington University 1995.

7. Formally published abstracts: Geesy GG, Costerton JW. Bacterial population adherent to submerged surfaces in a pristine mountain stream. Abstracts of the Annual Meeting of the American Society for Microbiology 1977: 235.

8. Articles from symposium volumes: Hamilton LD. Immunogenic polynucleotides. In: Beers RF Jr (ed). Biological effects of polynucleotides: Proceedings of the symposium on molecular biology. New York, Heidelberg, Berlin: Springer Verlag 1971: 107-28.

9. Insert from commercial product: Zyvox (linezolid). Peapack NJ: Pharmacia & Upjohn '2000 (package insert).

10. Web site: Division of tuberculosis elimination. Surveillance reports: reported tuberculosis the United States, 2000. Atlanta: Centres for Disease Control and Prevention, 2001. (Accessed June 27, 2001, at http:/ www.cdc.gov /hchstp/tb/surv/surv2000.)

11. On-line only Journal: Scientist JQ. 2 October 1998, Posting date. History of virology. Am Virol J 1998; 30-150. *(Page numbers may not be available)* [Online.] http://cbxiou.pgr (last accessed October 10, 1998)

12. Online version of print journal: Scientist JQ. History of clinical microbiology. Clin Microbiol 1999; 100: 123-345. [Online]

13. Online version of print books: Scientist JQ. 4 October 1998, Posting date. Culturing methods, 750-800 In: Gavier (ed). Practical procedures for Laboratory, 5th ed. [Online.] DEF Publishing Co. Boston, Mass Http://cbxiou.pgr. (last accessed October 10, 1998).

Abbreviations

Except for units of measurements, abbreviations are discouraged. The first time an abbreviation appears, it should be preceded by the words for which is stands.

Drug name

Generic names should generally be used. When proprietary brands are used in research, include the brand name in parentheses in the methods section.

Permissions

Materials taken from other sources must be accompanied by a written statement from both author and publisher to the OMTAJ for reproduction.

Review and Action

Manuscripts are examined by editorial staff and usually sent to reviewers.

Rejected manuscripts will only be returned if accompanied by stamped and self-addressed envelope.

Letters about potentially acceptable manuscripts will be sent to the corresponding author after the review process is complete.

[1] Uniform requirements for manuscripts submitted to biomedical journals. International Committee of Medical Journal Editors. *Med Educ 1999; 331(1): 66-78. or* http://www.icmje.org/inedx. html.

[2] Additional information regarding manuscript reparation and relevant editorial policy is available in the editorial office

Covering letter to the Editor for submission of manuscripts

To
The Editor
The OMTAJ
Sylhet MAG Osmani Medical College,
Sylhet-3100

Subject: Submission of manuscript

Dear Sir,

I/we am/ are submitting along with a manuscript for Original Article/ Case Report/ Review Article/ Medical Progress/ Occasional Note/ Others, having title:----------
---

---------- for publication in the OMTAJ.

I/we mention that the manuscript had not been **submitted to,** or **accepted for publication,** or **published** in any form, in any other journal partially, or completely.

We also agree with the following orders of authorship to the manuscript, and we also certify that the authorship will not be contested by anyone whose name is not listed here.

Authors chronology Signature

1.

2.

3.

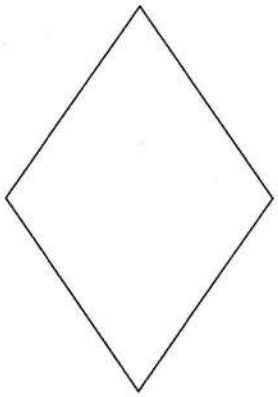
4.

5.

Corresponding Author: ----------Signature:----------

Address:----------

With the best complements

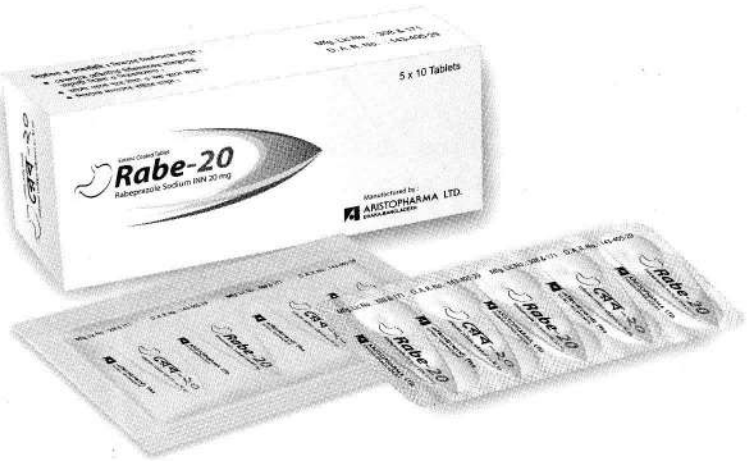


Alumni Association of
Sylhet MAG Osmani Medical College
North America

Enteric Coated Tablet

Rabe-20

Rabeprazole Sodium INN 20 mg



The best antiulcerant for pregnant women

Manufactured by:
ARISTOPHARMA LTD.
Manufacturer of Pharmaceutical Products

ISO 9001:2008

Further information is available on request.

7, Purana Paltan Line, Dhaka-1000, Tel : 9351691-3 Fax : 880-2-8317005,
E-Mail : apihc@bangla.net Website : www.aristopharma.com

Mebiz SR

Mebeverine Hydrochloride BP 200 mg

Modified release capsule

Also

- Possesses local anaesthetic activity[5]
- Has no antispasmodic effect on the uterus and the bronchial muscles[6]
- Has dual mode of action[7]
- Has no inhibition of normal peristalsis[6]

PRESCRIBING INFORMATION

Composition: Each modified release capsule contain Mebeverine Hydrochloride BP 200 mg. **Clinical Pharmacology:** Mebeverine, is a musculotropic antispasmodic with a direct action on smooth muscle of the gastrointestinal tract, relieving spasm without affecting normal gut motility. **Indication:** Mebiz SR is indicated for the symptomatic relief of irritable bowel syndrome. **Contra-indication:** Paralytic ileus. Hypersensitivity to any of the components of the capsule. **Warning and Precaution:** Porphyria. **Pregnancy & Lactation:** Animal studies have failed to show any teratogenic effects. However, the usual precautions concerning the administration of any drug during pregnancy should be observed. Mebeverine is excreted in the milk of lactating women after therapeutic doses. Because of the potential for adverse reactions in the nursing infants a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother. **Side effects:** In very rare cases allergic reactions have been reported, in particular erythematous rash, urticaria and angioedema. **Overdosage:** CNS excitability may occur in case of overdosage. No specific antidote is known; gastric lavage and symptomatic treatment is recommended. **Dosage and Administration: Adult:** One capsule twice a day, preferably 20 minutes before meals. **Pediatric use:** Not recommended. **Storage:** Keep in a cool and dry place, away from light. Keep out of the reach of children. **Presentation:** Mebiz SR is available as 3 strips of 10 capsules each packed in a unit carton.

Referances: ***1.*** *Medscape* ***2.*** *AJMC 3. Med Sci Monit* ***4.*** *J of clin pharm and thera* ***5.*** *Eur J Pharmacol* ***6.*** *Medstore* ***7.*** *Wikipedia*

SUN PHARMACEUTICAL (BANGLADESH) LTD.

For further information please write to marketing planning department
SUN PHARMACEUTICAL (BANGLADESH) LTD.
House # 4, Road # 16A, Gulshan-1, Dhaka-1212

Mebiz SR-1 LBL/AdSp/08/09/6000

Lyophilized

Maclar® I.V.

Clarithromycin 500 mg Inj.

Maclar®

Clarithromycin 250 mg & 500 mg tablet
125 mg/5ml Dry syrup

A dependable choice for the treatment of respiratory tract infections

Merom®

Meropenem 500mg & 1gm USP Inj.

Imipen®

Imipenem 500mg+Cilastatin 500mg USP Inj.

Appropriate & timely empirical antimicrobial treatment of ICU infections

Urilev®

Levofloxacin INN

Wide Coverage Against ***CAP*** *and* ***AECB***

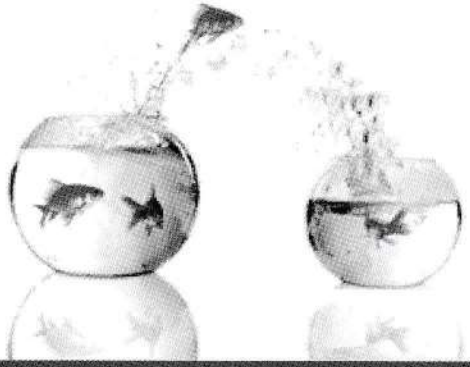
Lyophilized

Omsec® I.V.

Omeprazole 40 mg injection

Omsec®

Omeprazole 20 mg Capsule



The right decision to win situation in GERD, gastric & duodanal ulcer

Techno Drugs

Where innovation never stops...

For further information please contact:
Product Management Department
31, Segunbagicha, Dhaka-1000.
Ph: 9354798, 8356038
Fax: +880-2-9354799, 9331100
www.technodrugsbd.com