ISSN - BIB ID 85528

July 2017
Volume 04 Number 02

Journal of Satkhira Medical College

Official Journal of
Satkhira Medical College Teachers Association
Satkhira, Bangladesh

JOURNAL OF

SATKHIRA MEDICAL COLLEGE

JSMC : Volume 04 No. 02 Jul 2017

Official Journal of Satkhira Medical College Teachers Association

JSMC is published twice in a year in the month of January and July.

This Journal is published by Teachers Association of Shatkhira Medical College, Shatkhira, Bangladesh. All correspondence for publication of manuscripts: Dr. Khan Golam Mostafa, Editor-in-Chief, JSMC, Department of Paediatrics, Satkhira Medical College, Satkhira, Bangladesh. Contact: Ph. 0471-64006; Mob. 01713 464777. Email: satkhiramc@ac.dghs.gov.bd.

Teacher's Association

Satkhira Medical College, Satkhira

President	:	**Dr Kazi Habibur Rahman**
Vice President	:	**Dr. Amal Kumar Biswas**
	:	**Dr. Harashit Chakrabarty**
General Secretary	:	**Dr. Md Ruhul Quddus**
Joint Secretary	:	**Dr. Md. Nasir Uddin Gazi**
Treassurer	:	**Dr. Quazi Arif Ahmed**
Organiging Secretary	:	**Dr. Sheikh Abu Sayeed**
Cultural and Entertainment Secretary	:	**Dr Mohammad Deluar Hossain**
Scientific Secretary	:	**Dr Md Zahidul Islam**
Publication Secretary	:	**Dr Khan Golam Mostafa**
Office Secretary	:	**Dr.Sudipto Shekhar Debnath**

Members :

1. Dr Abu Saleh Md. Moosa
2. Dr Mohammad Mamunur Rashid
3. Dr Md Asaduzzaman
4. Dr Sanjoy Kumar Sarker
5. Dr. A H S M Kamruzzaman
6. Dr. Md. Touhidul Islam
7. Dr Farhana Hosssain
8. Dr Fahmida Zaman

SATKHIRA MEDICAL COLLEGE
Satkhira, Bangladesh. Phone : 0471-64006, Fax : 0471-63559
satkhiramc@ac.dghs.gov.bd www.satkhiramedicalcollege.com

JOURNAL OF SATKHIRA MEDICAL COLLEGE (JSMC)

JSMC : Volume 04 No. 02 Jul 2017

CONTENTS

EDITORIAL

Contamination of formula milk

KG Mostafa

It has been a well established contention that human breast milk is the perfect nutrition for all babies up to the age of six months of life. It provides all the necessary nutrients for initial growth, progressive mental development and maintenance of good health. In addition, the unique qualities of this golden elixir of life, especially the protective effects against several infections, are well documented.

Under certain very special circumstances within the first six months of life and as a complementary food after that time, it may be necessary to provide formula milk derived from cow milk to children. These are provided either in a liquid whole milk type or as dried powdered milk which needs to be reconstituted in water prior to feeding. When prepared according to the manufacturer's instructions provided on the pack, these have been generally considered to be safe. Many parents and care-providers have regularly placed infinite faith in the goodness and safety of these products. There is of course the possibility of the formula milk feeds being contaminated during the process of domestic preparation due to unhygienic methods but these are largely preventable in most cases by adhering strictly to the instructions provided. Nonetheless, it is not generally appreciated that formula milk powders are not completely sterile[1].

In fact, a certain number of specified microorganisms are permitted in the final formulation of the finished product. None of these allowed microbes are of the potentially pathogenic variety and some, such as the probiotics, are considered to be beneficial. The stipulated standards are given in Codex Alimentarius Standards[2], European Union Regulations[3] and the Sri Lanka Standards Institute documents[4]. All these have one thing in common i.e. the provision of strict guidelines to ensure that potentially pathogenic microorganisms do not contaminate these milk formulae. In addition, non-microbe types of additives are also very strictly controlled by statutory regulations in all countries. However, in stark contrast to all these well regulated considerations, the possibility of these milk powders being tainted at the original manufacturing level to be the cause of noninfective types of diseases due to other undesirable contaminants and even a source of certain serious infections has come to

light over the last few decades. These are undoubtedly rare but are of considerable concern in the perspective of the severity of the problems caused by them.

The best publicised episode of chemical contamination is the well documented episode of the addition of the illegal substance melamine to formula milk[5]. In 2008, increasing numbers of infants and young children in China started to develop unexplained urinary tract stones. The reason for this most unusual epidemic was identified as the addition of the so called "protein essence" melamine to raw milk to falsely increase the protein content after dilution. The raw milk was then processed to produce the milk powder. High enough concentrations of melamine in the milk feeds, after absorption, led to the formation of crystals and stones in the urinary tract. Over 20 dairy companies were incriminated in this saga of a most unpleasant incident. In the same year traces of melamine were found in the formula milks in Canada and the United States of America. These levels were much less than those reported in China, where levels of melamine contamination had reached as much as 2,500 parts per million, about 10,000 times higher than the recorded US levels.

Serious infections caused by pathogenic microorganisms that have contaminated the formula milk powders have been quite well documented. Quite a while ago, an outbreak of diseases caused by lactose-non-fermenting Salmonella virchow strains attributed to contaminated infant formula milk was reported from Spain[6]. In recent years, at least 6 outbreaks of Salmonella infection in infants that have been linked to the consumption of powdered infant formula have been reported. Many of these outbreaks were identified because the Salmonella strains were unique in some way (e.g. a rare serotype), and a well-established Salmonella surveillance network, supported by laboratories capable of serotyping isolates, was in place.

Another common feature of the outbreaks was the low level of salmonellae detected in the implicated formula. In fact salmonellae may be missed in routine testing. These outbreaks are likely represent only a small proportion of the actual number of Salmonella infections in infants that have been linked to powdered infant formula[7].

There have been many recent reports of more serious infections with Enterobacter (Cronobacter) sakazakii associated with contaminated formula milk. Multiplication of Enterobacter sakazakii in prepared formula feeds can cause devastating sepsis, particularly in the first 2 months of life. In approximately 50 published case reports of severe infection, there are high rates of meningitis, brain abscesses and necrotizing enterocolitis, with an overall mortality varying from 33 to 80 percent1.

Enterobacter sakazakii represents a

significant risk to the health of neonates. This bacterium is an emerging opportunistic pathogen that is associated with rare but life-threatening cases of these infections in premature as well as full-term infants and infants aged less than 28 days are considered to be most at risk[8]. The average annual number of invasive Cronobacter infections worldwide increased from 1.5 in 1958-2003 to 4.3 in 2004-2010. A review of 68 cases from around the world during 1958-2003 and another 30 from 2004-2010, all in children without underlying disorders, revealed that 90 percent of infected infants had received powdered infant formula or human milk fortifier, and this proportion did not differ significantly between time periods[9].

In view of these recent developments, more and more emphasis is now placed on different methods of sterilising milk that is used to prepare powdered formulae. Milk could be heat treated to maintain optimal bacteriological quality of the product. Pasteurization typically uses temperatures below boiling, since at very high temperatures, casein micelles will irreversibly aggregate, or "curdle"[10]. However, heat treatment could also be undertaken through either retort sterilization or hightemperature short-time (HTST) treatment.

Recently, ultrahigh-temperature treated formula has become more commonly used. If powderedformula is made from such treated milk, then spray drying would be required in addition. Retort sterilization is a traditional retort sterilization method that uses 10-15 minutes treatment at 1180C. Ultrahigh-temperature (UHT) is a method that uses a brief (2–3 seconds) treatment at 1420C. Because of the short time used, there is little protein denaturation but the process still ensures sterility of the final product.

In addition, the current recommendation of domestic preparation of formula milk powders include washing hands with soap and water prior to preparing the feed, boiling water and allowing the boiled water to cool down to no less than 700C and adding the recommended amounts of the milk powder. In practice, this means water that has been left, covered for less than 30 minutes after boiling[11]. The assumption is that in the very rare event of the powder being contaminated with potentially pathogenic organisms, the temperature of the water would help to kill them prior to the feed being given to the child.

All these measures are instituted for the safety of children. All nations have an unequivocal responsibility to ensure that such considerations get priority in their agenda. It must be emphasised that serious events and fatalities attributed to contaminated milk formulae are totally unacceptable in the context of safety of children. Milk food industry has a tremendous responsibility to ensure that safety concerns regarding milk formulae are properly addressed at all

times. Even if one child dies of a catastrophe resulting from contaminated milk formula, it is just one death too many.

References

1. Agostoni C, Axelsson I, Goulet O, Koletzko B, Michaelsen KF, Puntis JWL et al. Preparation and handling of powdered infant formula: A commentary by the ESPGHAN Committee on Nutrition. Journal of Pediatric Gastroenterology & Nutrition 2004; 39(4): 320-2. http://dx.doi.org/10.1097/00005176200410000-00002

2. Codex Alimentarius. 2009. Code of hygienic practice for powdered formulae for infants and young children, CAC/RCP 66-2008. Available from: www.codexalimentarius.org/standards/list-of standards/en/?no_cache=1 [Accessed 18 October 2012]

3. European Union, 2005. Commission regulation (EC) No 2073/2005 of 15th November 2005 on microbiological criteria for foodstuffs, Official journal of the European Union, 22 December 2005. Available from: www.eurlex.europa.eu/ LexUriServ/LexUriSer v.do?uri-CELEX: 32005R2073: EN:HTML [Accessed 18 October 2012]

4. Sri Lanka Standard 651:2007. UDC 637.144. pub. Sri Lanka Standards Institute, Colombo 8, Sri Lanka.

5. Chen Jun-shi. A worldwide food safety concern in 2008—melamine -contaminated infant formula in China caused urinary tract stone in 290,000 children in China. ChineseMedical Journal 2009; 122(3):243-4.

6. Usera MA, Rodriguez A, Echeita A, Cano R. Multiple analysis of a foodborne outbreak caused by infant formula contaminated by an atypical Salmonella virchow strain. European Journal of Clinical Microbiology & Infectious Diseases 1998; 17(8):551-5. http://dx.doi.org/10.1007/BF01708617

7. Cahil SM, Wachsmuth IK, Costarrica M de L, Embarek PKB. Powdered infant formula as a source of Salmonella infection in infants. Clinical Infectious Diseases 2008; 46(2): 268-73. http://dx.doi.org/10.1086/524737

8. Drudy D, Mullane NR, Quinn T, Wall PG, Fanning S. Enterobacter sakazakii: An emerging pathogen in powdered infant formula. Clinical Infectious Diseases 2006; 42(7):996-1002. http://dx.doi.org/10.1086/501019

9. Jason J. Powdered infant formula can harbour rare but deadly Cronobacter. Available from: http://www.medscape.com/viewarticle/772247

10. Pasteurization. Available from: http://en.wikipedia.org/wiki/Pasteurization [Accessed 20th October 2012]

11. Guidance on safe preparation, storage and handling of powdered infant formula. Available from: http://www.infantfeeding.info/preparation.htm [Accessed 21st October 2012]

All correspondence to :

Dr. Khan Golam Mostafa
Associate Professor & Head
Department of Paediatrics
Satkhira Medical College
Satkhira, Bangladesh

Original Article

Management of Colorectal Cancer in a Tertiary Care Centre, Khulna, Bangladesh.

MM Hossain[1], MR Quddus[2], M Rashiduzzaman[3], MM Rahman[4], MS Rahman[5], MA Islam[6]

ABSTRACT:

Background: Colorectal cancer is a major cause of morbidity and mortality throughout the world. A raising incidence is seen in Asian population. It accounts for over 9% of all cancer incidence. A study of the disease profile helps in screening, early diagnosis and management of the disease in developing countries. **Objective:** To study the cancer presentation in our population which can help in developing strategies for better control of disease. **Methodology:** We conducted a cross-sectional study using the data base of 134 patients of colorectal cancer diagnosed in the Department of Surgery of Khulna Medical College & Hospital, Khulna. The study period was from May, 2015 to Jan, 2018. **Results:** The male to female ratio was 1.26:1 in rectal cancer. In colon cancer the ratio was 1:1.3. The mean age at presentation was 47 years in males and 51 years in females in colorectal cancers together. Thirty eight percent of the patients were less than 45 years old. Eighty percent of the cases were rectal cancers. In 71% of rectal cancers the growth was located within 5cm from anal verge (AV). Stage III was the commonest stage of presentation. Abdominoperineal resection (APR) was the commonest surgical procedure done. Inoperability was highest with lower rectal cancer. **Conclusions :** Our analysis suggests that younger age at presentation, low lying rectal cancers and advanced stage at presentation were observed in predominantly rural population. Rectal cancers are the most common cancers referred among colorectal cancers. Screening for colorectal cancers and early evaluation of symptomatic cases need to be encouraged.

Keywords: Colorectal cancer, adenocarcinoma, clinicopathplogical, rectal cancer.

1. Dr. Md. Monoar Hossain, Asstt. Professor, Surgical Oncology, Khulna Medical College
2. Dr. Md. Ruhul Quddus, Associate Professor, Surgery, Satkhira Medical College
3. Dr. Md. Rashiduzzaman, RS, Surgery, Satkhira Medical College Hospital
4. Dr. Md. Mahabubur Rahman, Asstt. Professor, Surgery, Mugda Medical College, Dhaka
5. Dr. Md. Shafiur Rahman, Senior Consultant, Surgery, Magura Sadar Hospital
6. Dr. Md. Atiqul Islam, Asstt. Professor, Surgery, Satkhira Medical College

Introduction

Colorectal cancers are the third most common cancers and the third leading cause of cancer related death in both males and females.(1,2) They constitute 10% of all cancers.(1,2) Globally the highest incidence rates are seen Western countries, and the lowest rates in Africa and Asia.(3,4) Overall, 60% of the cancers are from developed countries. . Although the incidence of colorectal cancer in this country is no less than the Western World, there is no broad based study about it. The geographical variation is attributed to

differences in diet, particularly consumption of red and processed meat, fiber, alcohol, body weight and physical activity (8,9). Age standardized incidence rate is less for women than for men in almost all the countries.(10) A decreasing trend is seen in the developed countries because of the regular screening and detection of the cases at an earlier stage(11-13), while an increasing tendency is seen in Asian coulntries due to westernization of the diet.(14,15) It is not clear whether there are any differences in anatomical distribution and stage of presentation in between developed and developing countries.The aim of our study was to analyze colorectal cancers according to age, sex, site, and stage. It may help in understanding the disease and helps in adopting strategies to reduce the burden, morbidity and mortality of the disease in developing countries

Methods:

Study design and population

We conducted a observational cross-sectional study using the data base of 134 patients of Colorectal cancer which was taken place in the Department of Surgery of Khulna Medical College & Hospital, Khulna. The study period was from May, 2015 to Jan, 2018. Information regarding age, sex, clinical presentation, anatomical site, histopathological type, stage of the disease and including metastasis, treatment modalities were recorded. Descriptive data on the type of treatment, patterns of recurrence and metastasis, survival, and the coexistence of disease were not the focus of our study.The age of the patients were categorized into three different age groups, less than 45 years, between 45 and 64 years and greater than 65 years. The stratification was arbitrary to simplify the analysis. The anatomical location of the malignancy was classified as lower rectum (1-5cm from anal verge [AV]), middle rectum (6-10cm from AV), upper rectum (11-14cm from AV), right colon (cecum to hepatic flexure), and left colon (splenic flexure to sigmoidcolon). The carcinoma was staged according to the Tumor-Node-Metastases (TNM) staging system of the International Union against cancer. The diagnosis of colorectal cancer was performed by colonoscopy, CT abdomen and pelvis, and confirmed by biopsy of the tumor. Baseline investigations were done to assess the patient's fitness for surgery. Treatment modalities included surgery, neoadjuvant or adjuvant chemotherapy and radiotherapy. Descriptive statistics were used for analysing the data using SPSS version 20 and results were presented in percentage and simple frequency.

Results: Study population age and sex distribution:

Total of 134 patients with histopathologically confirmed as colorectal cancers formed the study population. Rectal cancers constituted 107 patients and colon cancers constituted 27 patients. The male to female ratio in rectal cancers was 1.26:1. In colon cancers male to female ratio was 1:1.3. The age group varied from 16 to 82 years with a mean age of 47 years for males and 51 years for females in both groups. The commonest age group is 45-64 years, followed by less than 45 years in our study. Less than 45 years age group constituted 38% of the cases (65 patients) (Table-1).

Table 1: Distribution according to age in colorectal cancers

Site	Total	Sex	Total patients		<45 Years		45-64 Years		>65 Years	
			n	%	n	%	n	%	n	%
Rectum	107 (80%)	Male	59	44	19	14	27	20	14	10
		Female	47	35	21	15	18	13	10	7
Colon	27 (20%)	Male	13	9	7	5	3	2	3	2
		Female	15	11	6	4	9	6	3	2
Total	134 (100%)		134	100	53	39	57	41	30	20

Clinical presentation, anatomical sites, histological patterns and tumor stage:

The duration of symptoms at presentation ranged from 2 weeks to 1 year with mean duration of 6 months. In rectal cancers bleeding per rectum was the chief complaints in 52% of the patients, followed by altered bowel habits in 40% of the patients and difficulty in passing the stools in 27% of the patients. Pain and mass per abdomen was the presenting symptom in colon cancer group. There were 107 cases of carcinoma rectum, of these 75 (71%) cases are within 5cm. The distance measured is arbitrary measured by clinical digital examination and colonoscopy. In colon cancers right colon constituted 14 cases and left colon 13 cases and one case is multiple polyposis with right colon growth.

Pathologically adenocarcinoma was observed in 97% of the cases, lymphoma in 3 cases, melanoma in two cases and gastrointestinal stromal tumor in one case. According to TNM staging in rectal cancers 55 cases (51%) are in stage III, 30 cases (28%) are in stage II, 12 cases (11%) are in stage IV and 13 cases(10%) are stage I (Table-2). In colon cancers 14(51%) cases are in stage III, 7(26%) cases in stage II, 5(20%) cases in stage IV and 1(3%) cases in stage I (Table-3).

Table 2: Distribution of stage according to subsite in rectal cancer

Table 2: Distribution of stage according to subsite in rectal cancer														
Site	Total		sex	Total		Stage I		Stage II		Stage III		Stage IV		
	N	%		N	%	N	%	N	%	N	%	N	%	
Lower third 1-5cm	75	71	Male	41	39	4	4	8	7	24	22	6	6	
			Female	33	31	4	4	9	8	16	15	4	4	
Middle third 6-10cm	25	23	Male	14	13	1	1	5	5	7	7	1	<1	
			Female	11	10	-		4	4	5	5	1	<1	
Upper third 11-14cm	7	6	Male	5	5	2	1	3	2	2	2			
			Female	2	2	-		1	1	1	<1	-		
Total	107	100		107	100	13	10	30	28	55	51	12	11	

Table 3: Distribution of stage according to subsite in colon cancer

Table 3: Distribution of stage according to subsite in colon cancer											
STAGE	Total		sex	I		II		III		IV	
	N	%		N	%	N	%	N	%	N	%
Right colon	14	51	Male	-		-		3	11%	2	9%
			Female	-		2	9%	1	3%	2	9%
Left colon	13	49	Male	1	3 %	2	6%	3	11%	-	
			Female	-		3	11%	7	26%	1	3%
Total	27	100 %		1	3 %	7	26%	14	51%	5	20%

Treatment modalities

Treatment plan was made according to the stage of presentation assessed by clinical examination, radiological findings. Operability and type of surgery was assessed by the operating surgeon by clinical examination and examination under anaesthesia. Neoadjuvant, adjuvant chemotherapy and radiotherapy was given according to protocols. Total of 90 patients underwent surgery, 14 patients were found locally advanced and inoperable (Table-4); 12 patients refused surgery and 18 patients were in stage IV.

Discussion

Incidence of colorectal cancer varies throughout the world. Colorectal cancer (CRC) is the third most cancer in men (6663,000 case, 10% of total cancers) and the second in women (570,000 cases, 9.4% of the total case) worldwide, and lowest in Africa and South-central Asia.(1,2) The trend is increasing in developed Asian countries like Japan, South Korea and Singapore. But still the age adjusted rates of CRC in Bangladesh are very close to the lowest rates in the world (1,2).

The mean age of presentation was 69 years in the western population, whereas in our study population the mean age is around 48 years (16). About 38% of colorectal

cancers are younger than 45 years. Similar younger age of presentation was foundin African and Chinese populations.(17,18) The aetiopathogenesis and genetic causes for this presentation need to be studied The male predominance is seen in accordance with the previous studies.(10)

Table 4: Type of surgery performed in carcinoma rectum and colon

Site	Sex	APR	AR	RT Hemicolectomy	LT Hemicolectomy	Inoperable
Rectum Lower third 1-5cm	Male	25	7	-	-	6
	Female	12	7	-	-	3
Middle third 6-10cm	Male	1	9	-	-	2
	Female	-	5	-	-	2
Upper third 11-14cm	Male	-	4	-	-	-
	Female	-	2	-	-	-
Right colon	Male	-	-	4	-	2
	Female	-	-	4	-	-
Left colon	Male	-	-	-	3	-
	Female	-	-	-	7	-
Total		38	34	8	10	15

APR: abdominoperineal resection; AR: anterior resection

High incidence of colorectal cancer under 45 years of age group resulted in a diagnostic problem, being treated as benign disease and are referred with a delay of around 3-6 months. Hence these patients presented at an advanced stage, and also disease was found to be aggressive in this population.

Regarding anatomical location of the tumor, rectal cancers predominate in our study group due to referral bias but some studies have shown predominance of rectal cancer in Bangladeshi population (21) in contrast to the West, where right sided colonic tumors predominate. Exact cause is not known for the predominance of rectal cancers further studies need to be done.

In accordance with other studies (22, 23), in our study 98% of the colorectal malignancies are adenocarcinomas. Other colorectal malignant pathologies observed in our study group are two cases of lymphoma, two malignant melanoma of the anorectum, and one case of gastrointestinal stromal tumor. 70% of the patients presented at an advanced stage. Advanced stage of presentation results in increased morbidity and mortality. Studies have shown decreased incidence and survival of colorectal cancers in Bangladesh.(24) Early diagnosis is only possible by routine screening and early evaluation of bleeding per rectum. In our study the commonest surgery done for rectal cancer was APR, as majority of patients presented in a locally advanced stage and low location of the tumor in the rectum. About 10% of the patients did not undergo complete resection because of locally advanced disease.

The limitations of our study are, more often the patients in advanced stages are referred to our center, and patients with rectal cancer are referred more frequently than colon cancer. Hence, our study group may not exactly reflect the prevalence of colorectal cancer in the whole population in this region. Despite these limitations, our institution being a major tertiary centre in this region, it may reflect the nature of the disease in this population and emphasizes the significance of early diagnosis by proper and timely evaluation, and management of the disease. It also indicates the differences in the presentation of the malignancy in our population, which needs to be evaluated for the possible etiological factors which

may differ from the western population. Proper accumulation of data through cancer registries need to be encouraged in developing countries to know the actual burden of the disease.

Conclusion

In conclusion, the current study has documented a high proportion of young age rectal cancer in a hospital based study. A significant number of patients present with advanced stage of disease. Among rectal cancers most of them are palpable by per digital examination indicating the importance of DRE(digital rectal examination). People should be educated for an early consultation for symptoms and high risk individuals should be encouraged for screening.

References

1.Parkin DM, Pisani P, Ferlay J. Global cancer statistics. CA Cancer J Clin 1999;49:33-64.

2.Sung JJ, Lau JY, Goh KL, Leung WK, Asia Pacific Working Group on Colorectal Cancer. Increasing incidence of colorectal cancer in Asia: Implications for screening. Lancet Oncol 2005;6:871-6.

3.National Cancer Registry Programme. Population based cancer registries 2004-2005. New Delhi: Indian Council of Medical Research; 2008.

4.Center MM, Jemal A, Smith RA, Ward E. Worldwide variations in colorectal cancer.CA Cancer JClin.2009;59:366-378.

5.Sankaranarayanan R, Black RJ, Parkin DM. Cancer survival in developing countries. Lyon(France): IARC Scientific Publications,No. 145; 1999.

6.Sankaranarayanan R, Swaminathan R, Brenner H, et al. Cancer survival in Africa, Asia, and Central America: a population-based study. Lancet Oncol2009;11:110-111.

7.Coleman MP, Quaresma M, Berrino F, et al. Cancer survival in five continents: a worldwide population-based study (CONCORD). Lancet Oncol2008;9:730-756.

8.Alexander DD, Cushing CA. Red meat and colorectal cancer: a critical summary of prospective epidemiologic studies.Obes Rev.2010 Jul 21. [Epub ahead of print].

9.Key TJ. Fruit and vegetables and cancer risk. Br J Cancer. 2010 Nov 30. [Epub ahead of print]

10.Stewart RJ, Stewart AW, Turnbull PRG, et al. Sex differences in subsite incidence of large bowel cancer.J Am Soc Colon Rectal Surg1983;26:658-660.

11.Mandel JS, Bond JH, Church TR, et al. Reducing mortality from colorectal cancer by screening for fecal occult blood. Minnesota Colon Cancer Control Study.N Engl J Med1993;328:1365-1371.

12.Zauber AG, Lansdorp-Vogelaar I, Knudsen AB, Wilschut J, van Ballegooijen M, Kuntz KM. Evaluating test strategies for colorectalcancer screening: a decision analysis for the U.S. Preventive Services Task Force.Ann Intern Med2008;149:659-669.

13.Muller AD, Sonnenberg A. Prevention of colorectal cancer by flexible endoscopy and polypectomy. A case-control study of 32,702 veterans.Ann Intern Med1995;123:904-910.

14.Center MM, Jemal A, Smith RA, Ward E. Worldwide variations in colorectal cancer.CA Cancer J
Clin 2009;59:366-378.

15.Center MM, Jemal A, Ward E. International trends in colorectal cancer incidence rates.Cancer Epidemiol Biomarkers Prev 2009;18:1688-1694.

16.Ali R, Barnes I, Kan SW, Beral V. Cancer incidence in British Indians and British whites in Leicester, 2001â€"2006.Br
J Cancer.2010;103:143-148.

Original Article

OPERATIVE PROCEDURE OF DISPLACED SUPRA CONDYLAR FRACTURE OF HUMERUS IN CHILDREN (BY CROSS K WIRE)

MMA Siddique[1], AHSM Kamruzzaman[2], PK Das[3], E Hafeez[4], F Alam[5], MM Hossain[6]

ABSTRACT:

Objective : Treatment out come of open reduction & internal fixation by cross Kwire through triceps nondisturbing posterior approach used In type III supracondylar fracture of humerus in children. **Methodology :** This study was done at district hospital, Satkhira from January 2012 to December 2014. 25 children with type III supracondylar fracture came at this hospital with in a week of occurence and close trial was failed. These cases were evaluated by clinicaly & radiologically before surgery. All of the cases were operated & the fractures were fixed by cross K wire through a triceps non disturbing posterior approach. All the patients were advised to attend at O.P.D. regularly for followup & the results were measured according to Flynn criteria. **Results :** The mean age was 08 years, out of 25 cases 23 (92%) were extension variety & 02 (8%) were flexion variety. 60% of these cases were initially treated by bonesetters.The average delay for appearing in this centre was 35 hours.04 (16%) patients devloped Pin track infection post operatively & only 01 (4%) had transient ulnar neuroprexia. **Conclusion :** Type III supra condylar fracture which were failed in close reduction could be satis factoricaly reduced by open reduction & fixation by cross k wire through a posterior triceps nondisturbing approach.

Key words : Type III Supracondylar Fracture, Open reduction, Posterior approach.

1. Dr. Md. Mahmudul Anam Siddiqui , Associate Professor, Orthopaedic Surgery, SMC
2. Dr. AHSM Kamruzzaman, Professor, Orthopaedic Surgery , Satkhira medical College
3. Dr.Probir Kumar Das, Junior Consultant , Orthopaedic Surgery , SMCH
4. Dr.Enamul Hafeez, Assistant Professor, Orthopaedic Surgery, Satkhira medical College
5. Dr.Faqrul Alam, Lecturer, Microbiology , Satkhira medical College
6. Dr. Md. Monawar Hossain, Lecturer, Forensic Medicine , Satkhira medical College

Introduction

Supra condylar fracture of humerus is most common fracture in children [1.2] This fracture some times is a challenging event for orthopaedic surgeon because multiple complications such as arterial occlusion or damage, compartment syndrome, Volkman's ischaemic contractures, nerve injuries, myositis ossificans & physical deformity may occur [1-3]. Proper management should be taken in proper time. The treatment plan should be taken to achieve both functional & cosmetically acceptable limb. There are various types of treatment protocol for this fracture e.g. close reduction & immobilization by plaster, percutaneous fixation by K-wire, skin or skeletal traction & ORIF by K-wire.

Each method has it's advantages & disadvantages. Close reduction & percutaneous pinning is most popular procedure but radiological facility in the operation room should be available which is not present in all district hospitals. Due to lack of proper reduction or loss of anatomical position during casting, cubitus varus has higher rate in close reducation method [3-5-9]. Traction treatment is not popular due to prolonged stay at hospital & the consequence is uncertain [6-9]. In type III supracondylar fractures, above methods are not eftective & failure rate is higher in these centres. Operative procedure like ORIF by cross kwire in the case of type III supracondylar fracture is popular method, in these centres where image intensifiers are not available. In this procedure soft tissue trauma is minimal, in comparison with repeated in close reduction attempts & obtaining & maintaining proper reduction with out disturbing extensor mechanism of elbow.

This study was how due to describe the treatment out come of ORIF by cross K-wire through a triceps non disturbing posterior approach used in the management of type III supracondylar fracture of humerus in children.

Methodology

This study was done in district hospital Satkhira from January 2012 to December 2014. In this study 25 cases were included with type III supracondylar fracture of humerus. These patients came at this centre with in one week of injury & operative manoevure was Indicated due to failure of satisfactory close reduction. Patients with open fractures, Gartland's type I & II fracture with huge swelling with blisters were excluded from this study. After coming to this centre, these patients were examined for neurovascular injuries, other associated injuries. Radiograph of anterior, posterior & lateral veiw was done & evaluated. Firstly close reduction was attempted under general anaesthesia & long arm back slab given with flexion & pronation of limb. Post reduction radiograph (Lateral & Jones view) was taken. Bauman's angle 5 - 8 degrees & humero capitellar angle with in 10 degree of the contralateral side was acceptable. Those patients with satisfactory radiological criteria were continued conservative treatment & they were not included in this study. Preanaesthetically the patients attendances were counselled that operative measure would be taken on same anaesthesia after failure of close reduction. In operative measure, posterior midline incision was given, starting 2 cm distal to the tip of olecranon extending prcximally for about 8 cm. Elevation of deep skin flap, ulnar nerve was identified, isolated & secured with a sling. Tricep aponeurosis & muscle was not disturbed, small incision were given on exposed medial & lateral epicondyle both & extended prcximaly 2 - 3 cm along the supra condylar ridges. Appropriate reducation of the fractured fragment was done & fixed with cross Kwires passing from medial & lateral epicondyles in to the opposite cortices in the metaphyseal diaphyseal regions. After cleaning with normal saline the skin was sutured by proline & limb immobilized by long arm backslab. After checking the wound & the patients were discharged on 2nd post operative day, radiograph was also done on operated elbow before discharge. Patients were advised to attend out patient door after 03 weeks.

The stitches were removed on 3rd week & back slab was also discarded. Radiograph was taken, intermitent range of movement excercises was started & the limb was retained in elbow bag.

On six week, radiograph was taken for evaluating healing process of fractured fragments, K-wires were removed but elbow bag was continuing for another three weeks. Patients were advised to do excercise regularly. These patients were advised to attend everymonth at O.P.D. for another 06 month. On there followup important regained R.O.M & fracture healing were assesed. These patients were advised to attend on 09 month, 1 year. Status of elbow was assessed according to Flynn criteria which is given below [1] .

Results

In this study total 25 cases with displaced fracture supra condylar type III were included. Out of 25 cases 23 (92%) were extension type & 02 (8%) were flexion type. 19 (76%) of them were male while 06 (24%) were female. The age range of them was 05 years to 15 years with mean age of 08 years. 18 (72%) patients came with in 24 hours of injury while 05 (20%) came with in 72 hours & 02 (8%) came with in one week. All of the cases came with history of fall.

Eleven patients (44%) had come in this centre after taking initial treatment from traditional bone setters in the form of wooden splint, bandage e.t.c which indicates that traditional bone setters are primary treatment provider in this region. The patients who devloped complications like blisters, compartment syndrome, huge swelling e.t.c. due to primary intervention by bone setters were excluded from this study. Those patients whose were initially treated by bone setters & didn't devlop complications included in this study.

All 25 cases, the posterior midline extensor mechanism sparing approach was used. After proper anatomical reducation which was assessed through medial & lateral windows created along the supracondylar ridge & the fractured fragments fixed by medial & lateral cross Kwires. Five (20%) patients devloped Pin site infection which was controlled by oral antibiotics. Removal of Kwire prior to 06 weeks for controlling infection was not required for any patient. Deep wound infection was not found for any case.

Ulnar nerve neuroprexia was noted in 02 (8%) patients which resolved in three months time & explortion didn't required for any case (table-2)

Fractures of all cases were united with in 06 weeks with formation of reasonable callus.

Out come of treatment was measured at one yr. according to the Flynn criteria. 19 (76%) patients out come of treatment was excellent in 04 (16%) patients were good with only 5 - 10 degres flexion deformity & 5 - 10 degrees decrease in carrying angle.

Three (12%) of the patients with good results have an extension lag of 5 - 10 degrees but the carrying angle was normal in them. The patients who had communition at the medial supra condylar pillars suffering from decrease carrying angle. Most of the patients 76% had almost normal range of movement & normal carrying cengle. In three cases (12%) extension lag was 5 - 10 degrees but carrying angle was normal & function was good.

Discussion

Among the paediatric fracture supracondylar fracture humerus is the most common, especially more common after Infancy of children [1-3]. This fracture usually occurs between olecranon & coronoid fossa just proximally to articular surface. This anatomic factor makes difficult this fracture to reduce & it is difficult to maintain it's reduction.

The mean age of patients with type III supracondylar fracturs in this study is

comparable with other studies on the same topic [9,11,12].

Most of the cases range from 5-12 years, it is the period when bones are relatively weak in comparison with adloscents. In this age group the activity is much more than the pre-School children, so the average age remained around 5-8 years in most studies.

The ratio between male & female in this study was 3 : 1 & male predominence was also noted in other studies [8,11,13]. The main explanation of the occurence because boys are more extroverted & involved in more physical phenomenon than female.

In this study 44% of patients were attended by traditional bone setters. Primarily which indicates that in the local town or rural area, these bone setters activities are pre dominant, for this reason patients came late to hospitals. On the other hand, smaller proportion of these group come earlier at metropolitan cities [14]. This indicates the difference of health care between these two regions. Average delay of patients in our study was 30 hours, this delay was 34 hours in series of Kumar [12]. This delay was due to primary intervention of primary bone setters.

This tradtional bone setters have some peculiar name e.g. Jahar puri, Boga, bagat e.t.c. & they estblished these centres many years before. Some of them are inherrited. But they don't have authentic medical education. The illeteracy rate in this regicn is higher which is favourable to them to divert the affected people easily. They use wooden splint on aftected limb which is wrapped by multi layer bandage after im proper reduction. They perform their events with out anesthesia even in supracondylar fracture they immobilize the elbow in full extension. Two patients (8%) the fracture were flcxion type. Rest 23 (92%) petients were extension type. The incidence of flexion type fracture noted in other studies were 2%, 13%, 4% & 3% respectively [1,3, 6,15].

Ulnar nerve neuroprexia was noted in 02 (8%) cases & all of them recovered after 03 month, no surgical Intervention was required, ulnar herve neuroprexia found Bopara R et al [3]. Iaotrogenic ulnar herve injury ranged from 2-8% to 16.5% in other studies [16,12].

Pin site infection occured in 05 (20%) & all of them resolved after oral antibiotics administrtion.

Infection was noted in 40%, 18%, 8.6% & 1-21% by other authors respectively [3.5, 18, 9]. In this study, K-wires left out of the skin for easy removal which were more vurnable for pinsite Infection in these patients. No deep wound infection devloped in this study where as it was found in 4%, 2.5%, 0% in their study [1,3,12]. A minor degrees of cubits varus was found in only 02 (8%) patients. Similar lower rate of complication were observed by Bopara R etal who used open reduction for treatment of these fractures.

The deformity rate is lower in this study due to the following factors :

First : only one attempt was made for close reduction, repeated attempt avoided which prevent comminution or further damage to the fracturs site Second : Wider exposure e.g medial, lateral windows made the reduction properly, further soft tissue damage thus prevented. Third : The qualitiful reduction of supra condylar pillars were easy to monitor under vision, thus horizontal rotation, coronal tilting, and displace ment of the distal fragments which are the main cause of cubitus varus were prevented. Fourth : medial & lateral Kwires were passed instead of two lateral Kwires, so a stable fixation done which

reduces the chance of displacement.

An extension lag of 5 - 100 was noted in 03 cases while decrease R.O.M was noted in 4% patients in another study [20].

In fracture supracondylar stiffness is one of the hazardous consequence which is due to soft tissue damage in intial trauma, repeated manipulation or surgical Inter vention. Earlier the posterior approach was associated with elbow stiffness but past decade the use of posterior approach didn't show any increase rate of stiffenss in elbow [1]. This type of improve ment results regarding range of movement of elbow is due to avoiding multiple attempts at close reduction, using extensor mechanism sparing posterior approach which provides wide exposure of fracture site through medial & lateral windows that made accurate reduction easy, so rough handling can be avoided, triceps or brachialis is almost spared.

The results obtained in the study 80% excellent or good, 5-10% with flexion deformity, 03 (12%) poor, while another study these were 85% excelent or good, 5.7% fair & 8.5% poor, study conducted by Kumar R et al12 showed exeellent, good results in 84%, fair & poor in 16% of the patients. Our study are compatible with all these studies.

In this study it reveals that operative measure i.e. ORIF by cross K-wire through posterior Triceps non disturbing approach can be used safely for treatment of type III supra condylar fracture which could not be reduced by close method. In this approach soft tissue trauma is less. This approach ensures ulnar nerve safety, chance of injury to anterior stouctures is less because medial & lateral subcutaneos windows along the supra condylar ridges are used to make under vision to reduce the fracture anatomicaly. In this procedure elbow stiftness is minimum due to less soft trauma & elbow deformity is also less due to proper anatomical reducation. Ulnar nerve is also secured in this procedure. Rehabilation is also easier in this approach.

Table : 1 Reduction assesment by Flynn criteria.

	Cosmetic factor-loss of carying angle (degree)	Functional Factor-loss of motion (degree)
Excellent	0 - 5	0 - 5
Good	6 - 10	6 - 10
Fair	11 - 15	11 - 15
Poor	> 15	> 15

Table - 2 : Post Operative Complications

Complication	No. of Patients	Percentage
Pin tract infection	5/25	20%
Ulnar Nerve neuroprexia	02/25	8%
Elbow stiffness > 15 degree extension loss	03/25	12%
cubitus varus > 10 degree change in carrying angle	02/25	8%

Table - 3 : Results at one year follow up using flynn criteria

Flynn group	No. of patients	Percentage
Excellent	19/25	76%
Good	4/25	16%
Fair	2/25	8%

Conclusion

Posterior approach with out disturbing tricps is a safe & ettective method for open reduction & cross K-wire fixation of type III supra condylar fracture which is not reduced by close method and it is also suitable for those centres like district hospitals of this country where Image intensifier is not available.

References

1. Beaty JH, Kasser JR. Supracondylar fractures of the distal humerus. In: Beaty JH, Kasser, JR, editors. Rockwood and Kilkins Fractures in children. 5th ed. Philadelphia: Lippincott Williams & Wilkins; 2001.p.577-624.

2. Canale ST, Beaty JH. Campbell's operative orthopaedics. 11th ed. Philadelphia: Mosby; 2008.

3. Boparai R, Sharma R, Kapila R, Pandher DS, Diwan RP. Supracondylar fractures in children-closed reduction vs open reduction, Indian J Orthop 2006;40:103-7.

4. Singh RP, Shrivastava MP, Shah RK. Analytical study of the management of supracondylar fractures of children in our setup. Nepal Med Coll J 2006;8:276-9.

5. Pirone AM, Graham HK, Krajbich JI. Managment of displaced extension-type supracondylar fractures of the humerus in children. J Bone Joint Surg Am 1988.70.641-50.

6. Hadlow AT, Devane P, Nicol RO. A selective treatment approach to supracondylar fracture of the humerus in children. J Peadiatr Orthop 1996;16:104-6.

7. Yusof A, Razak M, Lim A. Displaced Supracondylar fraeures of humerus in children-comparative study of the results of closed and open recuation. Med J Malaysia 1998;53:52-8.

8. Shoaib M, Hussain A, Kaman H, Ali J. Outcome of claosed Reduction and Casting in displaced supracondylar fracture of the humerus in children. J Ayub Med coll Abbottabad 2003;15:23-5.

9. Ahmad I, durrani Z. Managment of displaced supracomdylar fracture of humerus in children by side arm traction. Pak J Surg 2006;23:159-61.

10. Flynn JC, Mattews JG, Beriot RL. BUCD pinning of displaced supracondylar frature of humerus in children. J Bone Joint Surg 1974;56:263-72.

11. Shab RA. Displaced Supracondylar fracture of the humerus in children, treatedby closed reducation and percutaneous pin fixation. Ann Abbasi Shaheed Hosp Karachi Med Dent Coll 2004;9:596-600.

12. Kumar R. Kiran EK, Mlhotra R. Bhan S. Surgical Management of the severely displaced supracondylar fracture of the humerus in children. Injury 2002;33:517-22

13. Tariq MA, Ali A, Shafi M. Supracondylar fractures: comparison of medial and lateral approach for fixation of humerus in children. Professional Med J 2006;13:244-52.

14. Kahn T, Hussain FN, Ahmad A, Jokhio W. Management of delayed supracondylar fracture of humerus. J Coll Physicians Surg Pak 2000;10:421-3.

15. Omid R, Choi PD, Skaggs DL. Supracondylar humeral fractures in children. J Bone Joint Surg Am 2008;90:1121-32.

16. Gosen T, Bongers KJ. Nuerovascular compications and functional outcome in displaced supracondylar fractures of the humerus in children. Injury 2003;34:267-73.

17. Skaggs DL, Hale JM. Operative treatment of supracondylar fractures of the humerus in children: the consequences of pin placement J Bone Joint Surg Am 2001;83:735-40.

18. El-Adl WA, El-Said MA, Boghdady GW, Ali AS. Results of treatment of displaced supracondylar humeral fractures on children by percuteneous lateral cross-wiring technique. strategies Trauma Limb Reconstr 2008;3:1-7.

19. Battle J, Comnicheal KD, Incidence of pin track infection in children's frctures treated with K wire fixation. J Paediatr Orthop 2007;27:154-7. Iqbal J. Supracondylar Fracture of humerus in children: an experience of closed reductin and percutaneous pinning. Ann King Edward Med Coll 2001;7:278-80.

Original Article

Clinico Pathological Study of Hypopharyngeal Carcinoma in Bangladesh

NP Sanyal[1], MZ Islam[2], ARM MHaque[3], MSBS Khan[4]

ABSTRACT:

Introduction: Hypopharyngeal carcinoma is an uncommon tumour. The world wide incidence should be below 1 per 1,00,000. Clinically, cancers of the hypopharynx tend to be aggressive and demonstrate a natural history that is characterized by diffuse local spread, early metastasis, and a relatively high rate of distant spread. More than 50% of patients with hypopharyngeal cancer have clinically positive. **Objectives:** To see the pattern of presentation of hypopharyngeal carcinoma. **Methodology:** This was a cross sectional study conducted in department of Otolaryngology and Head Neck Surgery of Bangabandhu Sheikh Mujib Medical University, Dhaka, Dhaka Medical College Hospital, Dhaka, Mitford Hospital, Dhaka. from July 2005 to June 2007. Consecuitive 60 patients were selected purposively upon inclusion and exclusion criteria. **Results:** Majority of the patients i.e. 49 (81.66%) patients, presented with symptom of progressive dysphagia, ranging from 2 weeks to 6 months had this complaint. 38 patients had ulcerative growths in contrary to the 22 exophytic growths involved lymph node was found mostly in piriform fossa growth. It was 37 out of 45 cases, in postpharyngeal growth 2 cases was found to have lymph node metastasis. All of 12 cases of postcricoid region shows no nodal involvement. **Conclusion:** Hypophayngeal carcinoma is one of the significant causes of cancer morbidity and mortality in the industrialized and also in developing countries. It needs further elaborate study on a larger number of patients over a longer period of time.

1. Dr. Narayan Prosad Sanyal, Asst. Prof ENT, Satkhira Medical College.
2. Dr. Md. Zahidul Islam Asst .Professor ENT , Satkhira Medical College.
3. Dr. ARM Morshedul Haque , Senior Consultant , ENT, Satkhira Medical College.
4. Dr. Mohd. Shamim Bin Shahid Khan, Asst. Prof., Kurmitola General Hospital, Dhaka.

Introduction

Hypopharyngeal carcinoma is an uncommon tumour. The world wide incidence should be below 1 per 1,00,000. High incidence of hypopharyngeal carcinoma in Europe and Asia is in countries like France, Switzerland, Spain, Slovakia, Slovenia and in India in the cities of Bombay and Madras. (Franceschi, Bidoli, Herrero 2000). In the United States, hypopharyngeal cancers are more common in men than in women (Canto, Devesa 2002). This cancer is extremely rare in children (Siddiqui, Sarin, Agarwal 2003) (Wynder, Hultberg, Jacobsoon 1957). Clinically, cancers of the hypopharynx tend to be aggressive and demonstrate a natural history that is characterized by diffuse local spread, early metastasis, and a relatively high rate of distant spread. More than 50% of patients with hypopharyngeal cancer have clinically positive cervical nodes at the time of presentation. In 50% of these

individuals, a neck mass is the presenting symptom (Horwitz, Caldarelli, Hendrickson 1979) (Keane 1982). The word pattern means design or model, in hypopharyngeal carcinoma it denotes the characteristic mode of occurrence, presentation, tumour biology and subsequent response to treatment. In clinical presentation two principal subsites the pyriform fossa and postcricoid area differ greatly in pattern of occurrence and clinical behavior (John C, Mark N, Janet A 2000). Regarding occurrence postcricoid carcinoma is the only cancer in buccopheryngeal region more common in women than men with wide geographical distribution. Hypophayngeal carcinoma is one of the significant causes of cancer morbidity and mortality in the industrialized and also in developing countries. There is little study on this topics in our country. Community based study is not available. Here hospital based study was done. This study will disclose the pattern and relations of the disease with study variables and will help in future diagnosis and subsequent management of such patients and will improve the quality of services with limited time and resources.

Methodology

This was a cross sectional study conducted in Department of Otolaryngology and Head Neck Surgery of Bangabandhu Sheikh Mujib Medical University, Dhaka, Dhaka Medical College Hospital, Dhaka, Mitford Hospital, Dhaka from July 2005 to June 2007. Consecuitive 60 patient were selected purposively upon inclusion exclusion criteria. Data were collected by a pre designed proforma. Statistical analysis done by SPSS programme.

Reults:

Majority of the patients i.e. 49 (81.66%) patients, presented with symptom of progressive dysphagia, ranging from 2 weeks to 6 months had this complaint. The duration of pain ranges from 2 weeks to 4 months with an average duration of 3 months. In all 27 patients who had referred pain to the ear, it was the referral of pain which drove them to the doctor during the last 2-4 weeks of the duration of pain. Hoarseness ranges from 2 weeks to four months with an average duration of 2-3 months. Hoarseness comes third in the list with a total number of 36 patients Next comes the appearance of neck mass complained by 32 of the patients. As a symptom it ranges from 2 months to 8 months with an average duration of 5 months. 5 patients shows significant weight loss within 3 months. Statistical analysis with chi squire test shows that result is significant. 38 patients had ulcerative growths in contrary to the 22 exophytic growths. The ulcerative growths were covered by slough while the exophytic growths showed fungations, necrosis, sloughing and in 2 cases bleeding surface. 14 patients had normal laryngeal movement while 24 patients had fixation of the hemilaiynx and 22 patients had impaired laryngeal movement. Enlargement of the cervical lymph nodes was observed in 39 patients. Location of the primary lesion was seen by endoscopy examination 45 patients had lesion in the pyriform fossa, 28 arising from the right and 17 arising from the left. Only 12 patients each belonged to the groups of postcricoid region and 3 in posterior pharyngeal wall. Size of the primary lesion categorized as UICC classification. Out of 60 patients Tj lesion was found in 6 patients, T2 lesion in 1patients, T3 lesion found in 28 patients and T lesion in 7 patients. Statistical analysis with chi squire

test shows non significant result. Level of lymph node involvement was determined by clinical examination and imaging study. Out of 39 cases having lymph node metastasis, 13 cases were seen to involved L III lymph node which is 33.33%, L IV lymph node was found in 19 cases. 2 cases was found to involved L VI lymph node which have ipsilateral metastasis in 2 cases. Bilateral lymph node metastasis was seen in 1 case in L VII. So in presentation most of the patients shows mostly to involved L III and L IV lymph node metastasis which is overall 82.04%. Involved lymph node was found mostly in piriform fossa growth. It was 37 out of 45 cases, in postpharyngeal growth 2 cases was found to have lymph node metastasis. All of 12 cases of postcricoid region shows no nodal involvement.

Table 1 Symptoms at presentation

Symptom	Duration	Average	No of Pt	Male	Female	Percentage
Dysphagia	15 days to 6m	$2\frac{1}{2}$ month	49	45	4	81.66
Pain in throat and or earache	15 days to 4 m	3 month	46	42	4	76.66
Hoarseness of voice	15 days to 4 m	$2\frac{1}{2}$ month	36	35	1	60
Neck swelling	1-8m	5 month	32	31	1	53.3
Haemoptysis	4-6m	5 month	15	15	0	25
Significant weight loss	-	3 month	5	1	4	10

(X2 = 40.5, P = < 0.001)

Table- 11: Incidence of lymph node involvement according to primary site.

Site	No of Lymph node	Percentage (%)
Piriform fossa	37	61.66
Post pharyngeal wall	2	33.33
Post cricoids	0	0

Discussion

It was observed that patients belongs to different age groups ranging from 32 to 75 years with average age of 54.15 years with a sex ratios of 7.57:1 (Male : Female). Most patients were in between to 51 to 60 years of age in both male and female. It is quite consistent with the statements of Ackerman & delRegato (1970) who quoted the incidence as predominantly found in men between 40 to 60 years of age. However, no definite commitment is possible regarding postcricoid carcinomas, as, stated by Turner (1920) who showed 85 female cases out of 98. No definite role can be incriminated to occupational distributions or income of the patients if these are considered on a national basis. But still personal habits may have role to play in this disease as evidenced from the study. 55 patients were smokers inclusive of 2 females, 51 patients had chewing habits, 5 had the habit of drinking alcohol. Betel leaf chewing with its other gradients like lime, betel nut, catechu, raw tobacco zarda which are all either physical or chemical irritants to the mucosa. These were also incriminated in the production of carcinoma of oral cavity & pharynx by Vincent &Marchetta (1963). Dietary habits of the patients may also play some role. 68% of the patients used to have poor to average diet. 19 were habituated with highly spicy food preparations particularly chilies. The fact cannot be denied that more or less all our people are habituated with spicy foods which are again irritants. As regards nutritional status should have some role in development of carcinoma hypopharynx. Only 15 patients was found with normal nutritional status. 45 patients was ranged mild (40%), moderately (25%) and severe (10%) malnutrition. Here dietary habit does not correlate closely

with nutritional status. The disease process itself and other pathological factors may contribute to this picture. In our study delayed presentation was seen in 36 patients as revealed by examination findings and endoscopic examination. Mostly was due to maltreatment by quacks and next due to personal negligence. In the context of general population both factors are the result of poor educational status and poor socioeconomic condition. In local examination which include both clinical examination and endoscopic finding. 38 patients has ulcerative groups in contrary to 22 exophytic growth. 14 patients had normal laryngeal movement 22 impaired laryngeal movement. In 45 patients lesions was in pyriform fossa: 28 from right side and 17 arising in left side. Post cricoid growth seen in 12 patients and 3 patients had growth in post pharyngeal wall. The primary lesion was T, in 6 patients, T2 lesions seen in 19 patients, T3 lesions in 28 patients and T4 in 7 patients. So most of the patients presented with T3 and T4 lesion of primary site. Enlargement of cervical lymph node was seen in 39 patients. In 13 cases lymph node involvement was seen to involve Lympnodes, LiV lymph nodes in 19 cases. Bilateral lymph node was seen in 2 cases. So in hypopharyngeal carcinoma level IV nodes is the commonest site of lymph node metastasis. As a symptom, difficulty in deglutition was the commonest at presentation, 81.66% (49 patients), with an average duration of the symptom of 2 and half months. Pain in the throat ranked second with 76.66% (46 patients) with average duration of 3 months. Hoarseness of voice came third with 60% (36 patients). 53.3%, (32 patients) with neck swelling. In 7 cases direct extension of the primary growth was later detected as with lymphnodes, 25% (patents) presented with foreign body sensation in the throat. Other complaints were made by smaller number of patients. As regards subsite classification, (Bryce 1967) showed pyriform fossa lesions in 61% in a group of 230 patients and (Mac Comb and Fletcher 1967) showed 75% out of 245 patients. Here pyriform fossa lesion was 75% post pharyngeal wall growth 10% and post cricoid group 20%. Me Comb - Fletcher puts the figure for postcricoid lesion at 2% as against

24% by Bryce. All these cases were confirmed by histopathological examination which showed squamous cell carcinoma in all cases. This result is supported by the study of almost all hypopharyngeal cancers are mucosal squamous cell carcinomas (SCCs) (Mendenhall, Riggs, Cassisi 2005) with majority 71.66% (43 patients) having Grade II lesions. Grade III and I to follow 'with 15% (9 patients) and 13.33% (8 patients) respectively. None had grade IV lesions. On the contrary (StellMaran 2000) shows that 65% of pyriform fossa lesion had lymph node involvement and bilateral in 5% cases. Postcricoid 20% and post pharyngeal wall 85%, does not correlate with the result of observation. So it seems that pyriform fossa lesion stay closer to the figure of the above worker, but other figure shows marked difference. Koilonythiaglositis pallor stomatitis including all other signs of severe anaemia seen in both the female patients with post cricoid carcinoma. Side by side, 65% (39 patients) had cervical lymph node involvement. Of these 61.66% (37 patients) had their primary lesions in the pyriform fossa. Where as Dailey (1968) showed that 66% of his patients had lymph node involvement, with the primary in the

pyriform fossa and posterolateral wall and postcridoid region with 55% and 42% to follow the suit.

Conclusion

It needs further elaborate study on a larger number of patients over a longer period of time. However A thorough clinical examination of a patient, without any preoccupied idea of a particular condition, is the key to the management of a patient as a whole.

Referrences:

Ackerman, Lauren V, Del Regato, Juan A 1970. Cancer diagnosis, treatment and prognosis. (4th Ed.), New York; The CV Mosby Co.345-351.

Ahlbom HE 1936: Simple achlorhydricanaemia, Plummer-Vinson syndrome, and carcinoma of the mouth, pharynx, and oesophagus in women. Br Med J; 2 (3945): 331-3.

Amos A: Women and smoking 1996. Br Med Bull; 52 (1): 74-89.

Barnes L, Johnson JT 1986. Pathologic and clinical considerations in the evaluation of major head and neck specimens resected for cancer. (Part I) PatholAnnu; 21: 173-250.

BhattaCharjee NK 1984. Clinical presentation of carcinoma of the hypopharynx- A study of 60 cases, BCPS (Dissertation).

Bichards SH 1970. Postcricoid carcinoma and the patersonkelly syndrome. Journal of laryngology; vol. 85:141-152.

Blot WJ, McLaughlin JK, Winn DM 1988. Smoking and drinking in relation to oral and pharyngeal cancer. Cancer Res; 48 (11): 3282-7.

Braakhuis BJ, Tabor MP, Kummer JA 2003. A genetic explanation of Slaughter's concept of field cancerization: evidence and clinical implications. Cancer Res; 63(8): 1727-30.

Canto MT, Devesa SS 2002. Oral cavity and pharynx cancer incidence rates in the United States, 1975-1998. Oral Oncol; 38(6): 610-7.

Dailey VM 1968. "Cancer of the laryngopharynx". Journal of laryngology; 82: 407-419.

Day GL, Blot WJ, Shore RE 1994. Second cancers following oral and pharyngeal cancers: role of tobacco and alcohol. J Natl Cancer Inst; 86(2): 131-7.

Franceschi S, Bidoli E, Herrero R 2000. Comparison of cancers of the oral cavity and pharynx worldwide: etiological clues. Oral Oncol; 36(1): 106-15.

Godballe C, Jorgensen K, Hansen O 2002. Hypopharyngeal cancer: results of treatment based on radiation therapy and salvage surgery. Laryngoscope; 112 (5): 834-8.

Gray RF, Hawthorne M 1992. Chapter 12-13, Synopsis of Otolaryngology, (5th end.), Bombay, KM Varghese company; 287-316.

Helliwell TR 2003. Evidence based pathology: squamous carcinoma of thehypopharynx. J ClinPathol; 56 (2): 81-5.

Hinerman RW, Amdur RJ, Mendenhall WM 2002. Hypopharyngeal carcinoma. Curr Treat Options Oncol; 3 (1): 41-9.

Horwitz SD, Caldarelli DD, Hendrickson FR 1979: Treatment of carcinoma of the hypopharynx. Head Neck Surg; 2 (2): 107-11.

Jacobs A, Kilpatrick GS 1964. The patersonkelly syndrome. Journal of laryngology; 85:79-80.

Jones RF, Men, 1961, "The paterson-Brown Kelly syndrome. Its relationship to iron deficiency and post-caricoid carcinoma." Journal of Laryngology; 74 (1):544 (11).

Keane TJ 1982. Carcinoma of the hypopharynx. J Otolaryngol; 11 (4): 227-31.

Kotwall C, Sako K, Razack MS 1987. Metastatic patterns in squamous cell cancer of the head and neck. Am J Surg; 154 (4): 439-42.

Original Article

Metastatic Squamous Cell Carcinoma of Necknodes of Unknown Primary – Management Experience in NICRH.

MZ Islam[1], AKM Saifuddin[2], KU Patuari[3], MK Arefin[4], SAA Ahsan[5], MSBS Khan[6]

ABSTRACT:

Introduction: Metastases of squamous cell carcinoma to cervical lymph nodes from carcinoma of unknown origin (CUP) represent 2% to 3% of head and neck cancers. **Objective:** To present experience of management of these patients treated with curative intent at National Institute of Cancer research and Hospital Mohakhli , Dhaka. **Methodology:** This was a cross sectional study upon 53 patients presenting with metastases to cervical lymph nodes the primary cancer remains occult despite thorough evaluation and under went surgery (MRND) were selected in the period of July 2011 to December 2012. **Results :** 46 (86.%) patients received more than 40 Gy postoperative radiotherapy and 10 (14%) patient received Chemo radiation by the decision of Tumour Board of NICRH. Regular follow up was done. Post operative relapse case were found in 18 (33%) patients. They were treated with palliative chemotherapy. **Conclusion:** Out come of this management is satisfactory.

1. Dr. Zahidul Islam, Asstt. Professor, ENT, SMC
2. Dr. AKM Saifuddin, Asstt. Professor, ENT, ShSMC
3. Dr. Khabir Uddin Patuari, Asstt. Professor, ENT, ShSMC
4. Dr. Mostafa Kamal Arefin, IMO, ENT, DMCH
5. Dr. Sayed Asif Ali Ahsan, IMO, ENT, DMCH
6. Dr. Mohd. Shamim Bin Shaid Khan, Asst. Prof., Kurmitola General Hospital, Dhaka.

Introduction

Metastases of squamous cell carcinoma (SCC) to cervical lymph nodes from primary of unknown origin represent 2% to 3% of head and neck cancers[1].The term carcinoma of unknown primary (CUP) should be used if no evidence of primary tumour is found after adequate clinical examination, fibreoptic endoscopy and conventional radiological investigations. The presentation of metastatic carcinoma involving neck nodes without clinical evidence is an unusual but not a rare situation. Squamous cell carcinoma is the most common histological tumour type and posses the greatest diagnostic dilemma because of the large number of primary upper aero digestive sites from which nodal metastases may arise[2]. The unusual form of presentation are may be due to spontaneous regression of the primary small submucosal primary autoimmune destruction of the tumor accelerated tumour.

The five-year overall survival rates range between 40% to 60% in recent international series. However, the optimal management of these patients remains controversial. The lack of randomized

studies comparing treatment options. Different facilities in diagnostic and therapeutic procedures in different institute. Poor patient compliance [3].

Treatment of metastatic neck gland is an integral part of management of head and neck cancers. Although surgery and radio therapy with or without chemotherapy are the modalities available for treating neck gland, wide surgical excision of the whole regional lymphatic chain enblock is mostly favored. Radical Neck dissection is the operation for such disease, designed previously but now modified radical neck dissection is becoming popular for last few decades to reduce morbidity [1,3].

Materials and Methods

The study included 53 patients with metastases of SCC to cervical lymph nodes from CUP treated with curative intent between July 2011 to December 2012. The study excluded patients who received palliative therapy because of advanced or co-morbid disease, with histology other than SCC and distant metastases at the time of diagnosis. The provisional diagnosis of neck node metastases with unknown primary was made after a comprehensive clinical examination of the upper aerodigestive tract failed to detect a primary lesion.All patients underwent FNAC, chest X-ray, barium swallow, X-ray of the nasopharynx and paranasal sinuses, ultrasonography of whole abdomen & computerized Tomography (CT). Subsequently patients underwent a meticulous examination under anesthesia with panendoscopy (direct laryngoscopy, oesophagoscopy, nasopharyngoscopy and bronchoscopy) and palpation of nasopharynx and base of the tongue. Some time directional biopsies from tonsil, base of the tongue and/or nasopharynx was performed. If these investigations failed to reveal the primary tumor, diagnosis of cervical node metastases from CUP was established. Patients were followed-up at regular interval; endoscopy and/or imaging were performed if patient was symptomatic or clinical examination raised suspicion of primary. Follow-up were completed by OPD visit, telephone calls etc. Ethical clearance was taken from Ethical Review Board of NICRH. The data was analyzed using SPSS for windows version 16 statistical software.

Result

The median age of patients was 55 years (range 31 to 80 years). Most of the patient are between 40-70 years. There were 50 men and 03 women male female ratio is 16.6: 1. 37 patients had involvement of right sided cervical nodes and 16 had left sided nodes.

The frequency of metastatic lymph nodes at various neck levels were as follows: level I, 5 patients (7.43%); level II, 35 patients (66%); level III, 25 patients (47.5%); level IV, 3 patients (5.6%); level V, 1 patient (1.8%) Histologically well differentiated 62% , moderately differentiated 28.6% , poorly differentiated carcinoma 9.4% AJCC staging reveals in this current series N1 13.4% , N2a 30.6% , N2b 22.6%, N3 33.4% All patients underwent neck dissection and were advised postoperative RT. Among 53 cases MRND done in 42 csaes and RND done in 11 cases, among MRND 16.6 % cases type I, and in 59.52% cases type II, 23.80% cases type III was done. 86% patient under went post operative radiotherapy alone and 14 % patient under went Chemo-radiation. Dose of the RT 6000cGy in 30# . Relapse case was 18 (33 %) which were treated with palliative CT in 12 cases and local excision in 6 cases.

Discussion

In our current series the median age of

patients was 55 years (range 31 to 80 years). Most of the patient are between 40-70 years. There were 50 men and 03 women male female ratio is 16.6: 1. 37(69.8%) patients had involvement of right sided cervical nodes and 16(30.2%) had left sided nodes. Lymphnodes involved more in level II & III respectively 35 patients (66%) and 25 patients (47.5%); it is similar with many international sereies. Histologically well differentiated 62%, moderately differentiated 28.6% , poorly differentiated 9.4%carcinoma. It is also similar to different study[2,3,6]. AJCC staging reveals in this current series N2a 30.6% , N2b 22.6% ,N3 33.4% which is similar with a study in Tata memorial Hospital India in 2008. The diagnosis of cervical node metastases from CUP is made after thorough assessment fails to reveal the presence of tumor in the upper aero-digestive tract. In addition to the array of investigations, many reports have advocated tonsillectomy, blind biopsies and/or washings for cytology from nasopharynx, and base tongue. However, six of the patients reported in this study underwent routine blind biopsies and no primary detected on subsequent follow-up, also it is reported in different literatures, thus questioning the role of these investigations in the work up for CUP.

Hence we believe that imaging of the neck, if performed, should be define the extent of nodal disease and its resectability rather than search for a primary. However some authors recommend routine imaging so as to avoid missing an occult primary and unnecessary radiation to mucosal areas. On the other hand the following investigation may help to identify the primary in little extent, Positron emission tomography (PET) ,Single-photon-emission computed tomography (SPECT) have been utilized useful in limited subject, Laser-induced fluorescence imaging, Epstein-Barr virus (EBV) evaluation in metastatic lymph nodes by in situ hybridization, Human papilloma virus (HPV) detection by polymerase chain reaction[1,3,4].

Pre operative RT was once advocated on the grounds that the tumours will shrink prior to surgery, making operation easier however in more circumstances pre operative irradiation is considered preferable for several region. Proper pathological staging, Use of free and pedicle flap in reconstruction neck surgery, microscopic tumour relatively easier to eradicate with radiation therapy. The application of postoperative RT resulting satisfactory out come although role of post RT still debatable [5]. Inspite of Surgery and post operative RT relapse cases are noted 33.33% which is similar to many International studies [6]. There is evidence that patients receiving postoperative RT to bilateral neck nodes and potential primary sites have higher reported control rate. The role of chemotherapy in the management of CUP with cervical metastases is also indistinct and deficient.

Conclusion

The optimal diagnostic and therapeutic approach still eludes us. The first randomized trial proposed by the European Organization for Research on Treatment of Cancer (EORTC), Radiation Therapy Oncology Group (RTOG), and other cooperative groups from Australia, Canada, Denmark and Germany is ongoing. The results of this trial will help in expounding several questions regarding passable management of cervical metastases from CUP. Here we share our experience in management of CUP in NICRH in our local context.Spectrum of

management will increase day by day. Diagnostic facilities may help to reduce the incidence rate of this CUP and Evidence based practice will give best results.

Referrence

1..Nieder C, Gregoire V, Ang KK. Cervical lymph node metastases from occult squamous cell carcinoma: Cut down a tree to get an apple? Int J Radiat Oncol Biol Phys 2001;50:727-33.

2.Sinnathamby K, Peters LJ, Laidlaw C, Hughes PG. The occult head and neck primary: To treat or not to treat? Clin Oncol (R Coll Radiol) 1997;9:322-9.

3.Grau C, Johansen LV, Jakobsen J, Geertsen P, Andersen E, Jensen BB. Cervical lymph node metastases from unknown primary tumours. Results from a national survey by the Danish Society for Head and Neck Oncology. Radiother Oncol 2000;55:121-9.

4.Colletier PJ, Garden AS, Morrison WH, Goepfert H, Geara F, Ang KK. Postoperative radiation for squamous cell carcinoma metastatic to cervical lymph nodes from an unknown primary site: Outcomes and patterns of failure. Head Neck 1998;20:674-81.

5Reddy SP, Marks JE. Metastatic carcinoma in the cervical lymph nodes from an unknown primary site: Results of bilateral neck plus mucosal irradiation vs. ipsilateral neck irradiation. Int J Radiat Oncol Biol Phys 1997;37:797-802.

6.Erkal HS, Mendenhall WM, Amdur RJ, Villaret DB, Stringer SP. Squamous cell carcinomas metastatic to cervical lymph nodes from an unknown head-and-neck mucosal site treated with radiation therapy alone or in combination with neck dissection. Int J Radiat Oncol Biol Phys 2001;50:55-63.

Original Article

Clinical and Financial Aspect of Cholecystectomy: Laparoscopic Cholecystectomy versus Open Cholecystectomy

M A Hanif[1], M M Hoque[2], M Asaduzzaman[3]
Z Rahman[4], M J Hossain[5]

ABSTRACT:
This cross-sectional study was carried out among 100 gallstone disease patients from the Department of Surgery at Rangpur Medical College Hospital, Rangpur in Bangladesh. There were taken 50% laparoscopic cholesystectomy and 50% open cholesystectomy cases during the period of May 2006 to April 2007 to carry on the study. Results divulged to contribute 6% of laparoscopic cholesystectomy needed conversion to open cholesystectomy. The mean operative time was 80.5 min for laparoscopic cholecystectomy which was 41.5 min for open cholecystectomy. There was shorter hospital stay time (2.43 days) in laparoscopic cholecystectomy and faster returning to normal activities and the mean operation cost was BDT 14000 on open cholecystectomy and BDT 21300 on laparoscopic cholecystectomy.

Keywords : Cholecystectomy, Laparoscopy, Mortality and morbidity, Conversion

1. Dr. Mohammad Abu Hanif Department of Surgery, Sheikh Hasina Medical College, Tangail, Bangladesh
2. Dr. Md. Mozammel Hoque Department of Surgery, SMC
3. Dr. Md. Asaduzzaman Department of Pediatric Surgery, Sheikh Hasina Medical College, Tangail, Bangladesh
4. Dr. Zahidur Rahman Department of Surgery, Sadar Hospital, Jhenaidah, Bangladesh
5. Dr. Mohammad Jamil Hossain Department of Surgery, Sher-e-Bangla Medical College, Barisal, Bangladesh

Introduction

Gallbladder disease is one of the major public health perils in the world, especially in the developing countries. Open cholecystectomy is on action more than century years throughout the world as the standard treatment modality for cholelithiasis and symptomatic gallbladder diseases. It has been demonstrated to have acceptably low morbidity, high efficacy and minimal mortality rates [1-4]. The usual course of recovery from this procedure was a 5 days hospital stay and 3-6 weeks of covalescence, but the procedure is still painful and patients suffer from much postoperative discomfort and disability. There is increasing patients' demand of non-operative treatment for their gallstones due to fear of an operation with its legacy of a "large" scar and the long duration of recovery [5-7]. The laparoscopic cholecystectomy has been introduced in the new era of minimal access surgery as the newest treatment modality for the management of symptomatic gallbladder disease and it has largely replaced the open cholecystectomy. The advantages of this

approach related primarily to patients satisfaction, shorter hospital stay, ease of recovery, earlier return to work and cosmetic consideration [8-10]. Laparoscopic cholecystectomy was first accomplished in June 1987 by a French gynaecologist named Philippe Mouret in Lyons. In Bangladesh, it was first demonstrated on two patients in BIRDEM and IPGM & R (BSMMU), Dhaka in December 1991 by a Japanese surgical team. Now it is practiced all over the country in both public and private hospitals. The existence of calculus biliary tract disease can be traced back to the prehistoric era. Surgery, the accepted treatment of calculus biliary tract disease, is the development of the last 100 plus years only. Gallstones were first described by a Greek physician, Alexnder Trillions, in the 5th century [5]. Early treatment of the disorders arising from them (i. e. gallstones) considered of attempts to dissolve the stones to stimulate the expulsion of stones from the gallbladder by "taking waters" from the great spas without understanding the symptoms due to lack of means for accurate diagnosis. The surgical treatment of cholelithiasis had its origin in the 17th century. Joineries have received credit for the first successful cholecystectomy in 1676, although he apparently extracted gallstones from a biliary fistula of the abdominal wall following spontaneous drainage of an abscess [11]. On June 15, 1876, Jahn Bobbs of Indiana performed the first cholecystectomy for mucocle of the gallbladder and the patient survived. In 1878, Kosher performed a successful cholecystectomy for empyema and in the same year, Sins operated for an enlarged gallbladder with long standing jaundice. He removed 60 stones but the patient died on the 8th postoperative day from hemorrhage, a complication of surgery in jaundice which discouraged the surgeon for the next 65 years [12]. Credit goes to Carl Langenbunch who for the first time thought that simple removal of stone is not ideal, as the retained gallbladder may produce stone again. Acting on this belief, he performed the first cholecystectomy on July 5, 1882, and thereby started the procedure of choice for cholelithiasis was started [11].On January 21, 1890, Courvoisier performed the first successful choledochotomy. The transduodental sphincteroplasty was also another important additional operative procedure for biliary tract disease. The term "sphincteroplasty" was coined by Dr. Louis L Smith and S. Austin Jones of the USA in 1952 [13]. Extracorporial shock wave lithotrispy along with oral dissolution therapy was introduced for treatment of gallstone in 1986 [14]. But as the procedure has many limitations and result was not satisfactory and so it failed to obtain acceptance among the surgeons. Therefore, the current study was conducted to evaluate the comparative assay of laparoscopic cholecystectomy and open cholecystectomy for the patients of Bangladesh.

Methodology

This comparative study was conducted in the Department of Surgery, Rangpur Medical College Hospital, Rangpur, Bangladesh from May 2006 to April 2007 using multistage random sampling method. All the patients were admitted and a detailed history and clinical examination was carried out as per the well-structured proforma. Patients were classified into two groups namely laparoscopic and open cholecystectomy cases consisting 50 cases in both groups. Various postoperative complications, operation durations, hospital staying

durations, operation charges, rent of seats and medicine buying cost were in consideration to run the respective study. The tabular, chart and graphical icon at MS Excel and mean, range and percentage at statistical section were in application in representing the study findings.

Results

There were no major complications developed in case of laparoscopic cholecystectomy. 6% of laparoscopic cholecystectomy found perforation of gallbladder and spillage of stone in the peritoneal cavity. In 2% of patients developed superficial wound infection in case of open cholecystectomy and 1% of patient developed superficial wound infection in case of laparoscopic cholecystectomy (Tab. I).

Tab. I. Morbidity and mortality in laparoscopic and open cholecystectomy.

Complications	No. of LC* (%)	No. of OC** (%)
Injury to CBD/hepatic duct/hepatic artery	0 (0)	0 (0)
Injury to duodenum/intestine	0 (0)	0 (0)
Perforation of gallbladder and spillage of stone	3 (6)	0 (0)
Cystic artery bleeding (ligation)	0 (0)	0 (0)
Postoperative bile leak	0 (0)	0 (0)
Postoperative vomiting	2 (4)	3 (6)
Superficial wound infection	1 (2)	2 (4)
Decreased pulmonary function and chest infection	1 (2)	1 (2)
Morbidity	5 (10)	3 (6)
Mortality	0 (0)	0 (0)

*LC= Laparoscopic choecystectomy and
**OC= Open cholecystectomy

The tab. II showed that the mean time required to perform laparoscopic cholecystectomy was 80.5 min which was 41.5 min in case of open cholecystectomy in the study culture.

Tab. II. Operation time in surgical cases.

Operative procedures	Operative time	
	Range (min)	Mean (min)
LC	18-150	80.5
OC	25-60	41.5

There were shorter hospital stay for conducting laparoscopic cholecystectomy (2.43 days), faster returning to normal activities and much reduced postoperative pain requiring analgesia than open cholecystectomy (Tab. III).

Tab. III. Recovery of patients from operation.

Conditions	LC		OC	
	Range (days)	Mean (days)	Range (days)	Mean (days)
Hospital stay (postoperative)	1-5	2.43	4-7	4.8
Oral solid diet	1-3	1.6	2-4	3.45
Postoperative pain requiring analgesia	1-3	2	2-4	2.75
Return to normal activities	7-20	10	18-35	24

According to the fig. I findings, 6% of surgical cases were converted into open cholecystectomy due to gross adhesions.

The findings proved that the mean cost of surgery was higher for laparoscopic cholecystectomy (BDT 18400-28000) than the open cholecystectomy (BDT 10500-22000).

Discussion

Cholelithiasis is a common diseases entity. Frequent occurrence and serious complications have made this one of the most important surgically correctable diseases [15]. There were problems even with century old mastered open cholecystectomy but it does not require modern sophisticated technology [16]. The main sufferers of gallstone diseases in our

study were female as compared to males. Out of total 100 cases, 7 cases were males, which were very much similar to those observed by Fraze et al and Ubrggren et al [15, 17 and 18]. In Carbajo Caballero et al's study the rate of complications was more in the open procedure than laparoscopic cholecystectomy [19-21]. In present study, postoperative wound infection was found 1% cases of LC and 2% in OC. Siddiqui et al [22] observed wound infection 2% and 6% respectively in LC and OC. These findings are in contrast with our study.The period of hospital stay was taken from day of surgery to day of discharge. The total period of hospital stay in our study was 2.43 days for LC and 4.8 days in OC. Early discharge from hospital has a positive influence on the patients as it promotes early return to work and also prevents nosocomial infections. Early discharges also decrease hospital costs. Studies by Jeffrey SB [23], Ahmed A [24], Majeed AW et al [25] and Tuula K et al [26] also showed a much shorter stay in both groups which is similar to our study. Cox MR noted in his series of 418 laparoscopic cholecystectomises that the conversion rate was 33.7% in acute cholecystisis, 21.7% for chronic cholecystisis and 4% in no inflammation group [27]. In our study, the conversion rate was only 6%. According to Stevens HP et al, the cost involves in open surgery is found to be more than in laparoscopic surgery. In a study by Carbajo CM et al [19], there was not much cost difference between both procedures. According to author's study, laparoscopic surgery worked out to cost BDT 18400-28000 (mean BDT 21300) and open surgery BDT 10500-22000 (mean BDT 14000).The results support the view that laparoscopic cholecystectomy is safe and justified replacement for open cholecystectomy. There is a definitely learning curve for surgeons who are newly exposed. The complications rate reduced as the surgeon become more experienced in these procedures to a level comparable with open cholecystectomy. The study supports that laparoscopic cholecystectomy safer, officious and offers definitive advantages over open cholecystectomy. Laparoscopic cholecystectomy can be considered the gold standard against which other procedures have to be compared. The spatial microsimulation modeling can be constructed in designing effective policies and see the governments and NGOs, environmental and spatial effects across different countries to overcome these health horrors because these tools are in vast application in most of the developing countries. The I/I nutrition counseling with the help of modified mass energy equivalence in nutritional epidemiology can be an effective measure to solve the operative complications in postoperative condition.

Conclusion

Gallstone disease is one of the common surgical problems around the globe. The open cholesystectomy have been performed worldwide as a standard treatment model of cholelithiasis although the procedure is still painful and having more postoperative morbidity and mortality. There is increasing demand for minimal access surgery on laparoscopic cholesystectomy due to its short hospital stay, easy recovery and less morbidity and mortality. Health microsimulation modeling technique should be explored in further study.

References

[1] Cheslyn-Curtis S and Russel RCG. New trends in gallstone management. Br J Surg 1991; 78: 143-9.

[2] Rahman A and Hakim MA. Malnutrition prevalence and health practices of homeless children: a cross-sectional study in Bangladesh. Sci J Public Health 2016; 4 (1-1): 10-15.

[3] Rahman A and Hakim MA. An epidemiological study on hygiene practice and malnutrition prevalence of beggars children in Bangladesh. Int J Nutr Diet 2016; 4 (1): 29-46.

[4] Rahman A et al. Dietary practices, health status and hygiene observance of slum kids: a pilot study in an Asian developing country. JP J Biostat 2016; 13 (2): 195-208.

[5] Springier V. Gallstones and laparoscopic cholecystectomy. Surg Endosc 1993; 7: 271-9.

[6] Kamruzzaman M and Hakim MA. Livelihood status of fishing community of Dhaleswari river in central Bangladesh. Int J Bioinfo Biomed Engg 2016: 2 (1): 25-29.

[7] Kamruzzaman M and Hakim MA. Family planning practices among married women attending primary health care centers in Bangladesh. Int J Bioinfo Biomed Engg 2016; 1 (3): 251-255.

[8] Ferguson CM. Electrosurgical laparoscopic cholesystectomy. Am J Surg 1992; 58: 96-9.

[9] Hakim MA and Rahman A. Health and nutritional condition of street children of Dhaka city: an empirical study in Bangladesh. Sci J Public Health 2016; 4 (1-1): 6-9.

[10] Hakim MA and Kamruzzaman M. Nutritional status of street children in central Bangladesh. Am J Food Sci Nutr Res 2015; 2 (5): 133-37.

[11] Roslyn JJ, Binns GS, Hughes EX, Saunders-Kirkwood K, Zinner MJ and Gates JA. Open cholecystectomy: a contemporary analysis of 42,474 patients. Ann Surg 1993; 218: 129-37.

[12] Hill AG, Finn P and Schroeder D. Postoperative fatigue after laparoscopic cholecystectomy. Aust NZ J Surg 1993; 63: 946-51.

[13] Mallick RK. Laparoscopic cholecystectomy as a new approach to surgical management of gallbladder disease: a study of 50 cases in Dhaka. Bangladesh College of Physicians and Surgeons, 1994.

[14] Nath RK. Postoperative complication of biliary surgery: a study of 100 cases in Dhaka. Bangladesh College of Physicians and Surgeons, 1991.

[15] Ahmed S, Iqbal T and Abdullah MS. Open cholecystectomy versus laparoscopic cholecystectomy: a comparative study. PJMHS 2014; 8 (2): 382-85.

[16] Shivakmar CR and Girish SN. A comparative study of conventional cholecystectomy and laparoscopic cholecystectomy. Int Surg J 2016; 3 (2): 707-10.

[17] Richard DCF et al. open versus laparoscopic cholecystectomy: a comparison of postoperative pulmonary complications. Ann Surg 1991; June: 651-3.

[18] Berggren U et al. laparoscopic versus open cholecystectomy: hospitalization, sickleave, analgesia and trauma responses. Br J Surg 1994; 81: 1362-5.

[19] Carbago CM et al. Surgical treatment of acute cholecystitis in the laparoscopic age-a comparative study: laparoscopic against laparotomy. Rev Esp Enfem Dig 1998; 90 (11): 788-93.

[20] Supe AN et al. Laparoscopic versus open cholecystectomy. Ind J Gastroenterology 1996; 15 (3): 94-96.

[21] Verma GR. Laparoscopic versus open cholecystectomy. Ind J Gastroenterology 1997.

[22] Siddiqui K and Khan AFA. Comparision of frequency of wound

Original Article

Different Presentation of Ectopic Pregnancy

Afroza Akhter [1], SP Biswas[2], N Akhter[3], MR Khatun[4], F Hossain[5], E Ara[6], K Fatema[7]

ABSTRACT:

Introduction: An ectopic pregnancy is one in which the fertilized ovum becomes implanted in a side other than the normal uterine cavity. The possible sites from above downwards are abdominal cavity, ovary, fallopian tube, broad ligament, rudimentary horn of a bicornuate uterus and cervix. **Aims & Objectives:**The aim of this study is thorough clinical evaluation of cases of ectopic pregnancy for early and accurate diagnosis, prompt and effective management of ectopic pregnancy cases with identification of risk factors in our situation. **Materials and methods :** This was a cross sectional type of descriptive study conducted in the Department of Obs & Gynae, Khulna Medical College Hospital, Khulna from July 2006 to June 2007. Among the ectopic pregnancy patient. Sample size 56 cases selected on the basis of inclusion and exclusion criteria. **Results:** Out of 1855, 56 cases were ectopic pregnancy. So, in this study incidence was 3.01, most of our patients (75%) age was between 20 to 30 years. In our study age range was 19 to 45 years, the peak incidence (71.43%) of ectopic pregnancy was among the para 1 to 3 and incidence is low (16.07%) among those who are para more than 3. The majority of the patient (50 %) present with pain and vaginal bleeding and 21 % patient present with massive intraperitoneal haemorrhage with collapse. 89.28% cases present with lower abdominal pain and 85.71% cases had history of amenorrhoea, also 14.29% had no history of amenorrhoea and this cases were difficult to dignosis. 71.43% cases present with abnormal pervaginal bleeding and many patients 42.86% having syncopal attack, 39.29% having early pregnancy signs and symptoms. **Conclusion:** That much of the morbidity of the patient due to ectopic pregnancy can be prevented by better obstetrical and family planning care. Introduction and re-enforcement of family planning program at grass root level should be provided.

1. Dr Afroza Akhter , Asst. Prof Obs & Gynae , Satkhira Medical College
2. Dr. Sankar Prosad Biswas, Associate Professor, Obs & Gynae, Satkhira Medical College.
3. Dr. Nasrin Akhter, Asstt. Professor, Obs & Gynae, Khulna Medical College
4. Dr. Mst Rahima Khatun, Asst. Prof Obs & Gynae , Satkhira Medical College
5. Dr. Farhana Hossain , Asst. Prof Obs & Gynae , Satkhira Medical College
6. Dr. Ehsen Ara , Senior Consultant , Obs &Gynae , Sadar Hospital Satkhira
7. Dr. Kaniz Fatema , Junior Consultant , Obs &Gynae , Sadar Hospital Satkhira

Introduction:

An ectopic pregnancy is one in which the fertilized ovum becomes implanted in a side other than the normal uterine cavity. The possible sites from above downwards are abdominal cavity, ovary, fallopian tube, broad ligament, rudimentary horn of a bicornuate uterus and cervix. By far the commonest is the fallopian tube (95%). Tubal pregnancy present as a cronic or an

acute illness or as an acute on cronic. Acute picture is so dramatic that in tends to receive more attention. Ectopic pregnancy, probably first described in AD 963 by Albucasis, an Arab writer and the first successful operation for ectopic pregnancy was performed in 1883 by Lawson Tait of Birmingham [2]. The Incidence of ectopic pregnancy varies from place to place even in the same country [3]. The incidence varies greatly throughout the world ranging from 1 in 28 to 1 in 300 [4]. This may be at least in part to a higher incidence of salphingitis, an increase ovulation induction. After one previous ectopic pregnancy approximately two thirds will never subsequently bear a living child and at least one out of ten will have a second ectopic pregnancy [5]. Fertility control measure seems to have some influence in increasing incidence of ectopic pregnancy. Ectopic pregnancy has been reported to occur in approximately 2-5% of all clinical pregnancies after IVF-ET. Blastocyst transfer should be associated with a lower incidence of ectopic pregnancy compared to cleavage stage transfer.6More ectopic pregnancies occur in infertile women, in lower socioeconomic group and in women who have had a previous ectopic pregnancy. A factor with potential etiologic importance is induced abortion. Women who have had previous tubal surgery are more prone to tubal ectopic pregnancy.

Materials and Methods

Type of Study: Cross sectional type of descriptive study conducted in the Department of Obs & Gynae, Khulna Medical College Hospital, Khulna from July 2006 to June 2007 among the ectopic pregnancy patient. Sample size 56 cases selected on the basis of inclusion and exclusion criteria.

Data collection procedure:After taking informed consent from each patient, a very careful history with particular attention to socio-demographic, menstrual, obstetric and contraceptive history, a thorough physical examination was done and diagnosis was established clinically in majority of eases. Pregnancy test and ultrasonography were done in most cases to support the clinical diagnosis. Haemoglobin estimation and blood grouping were done in all cases. Finally, laparotomy was done to confirm the diagnosis and manage the case. All the data were collected in a pre- designed data collection sheet.

Results

During the period of July 2006 to June 2007 total number of patient admitted in the department of Obs & Gynae ward in Khulna Medical College Hospital was 1855. Out of 1855, 56 cases were ectopic pregnancy. So, in this study incidence was 3.01, most of our patients (75%) age was between 20 to 30 Years. In our study age range was 19 to 45 years, the peak incidence (71.43%) of ectopic pregnancy was among the para 1 to 3 and incidence is low (16.07%) among those who are para more than 3. The majority of the patient (50%) present with pain and vaginal bleeding and 21 % patient present with massive intraperitoneal haemorrhage with collapse. 89.28% cases present with lower abdominal pain and 85.71% cases had history of amenorrhoea, also 14.29% had no history of amenorrhoea and this cases were difficult to dignosis. 71.43% cases present with abnormal pervaginal bleeding and many patients 42.86% having syncopal attack, 39.29% having early pregnancy signs and symptoms. Only 35.71% present urinary symptoms. In this series 60.71% patient were without contraception and 32.15% were under contraceptive coverage but somehow it

fails. Most the patients 53.75% present within 8 weeks of amenorrhoea, history of MR (42.85%), pelvic infection (28.57%) and sub fertility (12.50%) constitute the main bulk of risk factors for ectopic pregnancy. Only 10.71 % had previous H/O Ectopic pregnancy, caesarean section and appendectomy. On examination positive clinical signs were anaemia in 92.86 % cases, abdominal and pelvic tenderness in 89.29 % cases, pervaginal bleeding 71.43% , pain on movement of the cervix was present in 67.86% cases , only 35.71% had a palpable lump in adnexa. 21.43% patient present with shock. Most of the cases (89.29%) needed blood transfusion as lifesaving, only 10.71% didn't need blood transfusion.

Table : Age incidence of Ectopic Pregnancy (n=56)

Age in Years	Number of patients	Percentage %
Up to 19 years	2	3.57
20 to 30 years	42	75.00
31 to 45 years	12	21.43

Table : Mode of presentation (n=56)

Mode of presentation	Number of patient	Percentage %
Acute:		
Massive intraperitonealhaemorrhage with collapse	12	21.43
Subacute:		
Irregular vaginal bleeding with syncopal attack	10	17.86
Pain with vaginal bleeding	28	50.00
Chronic	6	10.7

Table : Presenting Symptoms of Ectopic Pregnancy (n=56)

Symptoms	Number of cases	Percentage %
Abdominal pain	50	89.28
H/O amenorrhoea	48	85.21
P/V bleeding	40	71.43
Syncopal attack	24	42.86
Early pregnancy S/S	22	39.29
Urinary problem	20	35.71
H/O no amenorrhoea	8	14.29

Discussion

This cross sectional type of descriptive study on ectopic pregnancy was conducted in Obstetrics and Gynecology department of Khulna Medical College Hospital, Khulna. This study was conducted from July 2006 to June 2007. In this study diagnosis of ectopic pregnancy was made by history and clinical features. An ectopic pregnancy is an emergency situation. Early diagnosis is very important for preventing complications and thereby to decrease the morbidity and mortality. For preservation of normal anatomy and function of the female reproductive organs, early diagnosis and treatment of ectopic pregnancy is very important. Recently mortality from ectopic pregnancy has been reduced due to prompt diagnosis which is in turn due to good diagnostic facilities such as transvaginal ultrasonography and serum beta-hCG. Other causes of decreased mortality are surgery in appropriate time, improvement in anesthesia, availability of blood transfusion facilities and use of appropriate antibiotics. In Bangladesh the most important cause of ectopic pregnancy is pelvic infection. When there is inflammation in the tubes, then they are damaged and there is intratubal adhesion and ciliary function of the lining epithelium is lost. As a result, transport of fertilized ovum through the tubes is hampered and it is implanted in the tubes. The incidence of ectopic pregnancy varies

greatly throughout the world, even in the same country ranging from 1 in 28 to 1 in 300. In my study ectopic pregnancy occurred in 0.01% of the total gynaecological admitted cases 1855. Khan et. al.27 showed that ectopic pregnancy occurred in 7 % of the total gynecological admitted cases (4284) , and Shahina A [21] showed 6.81 % of the total gynecological admitted cases (3215). Ectopic pregnancy causes major maternal morbidity and mortality with pregnancy loss and its incidence is increasing worldwide. In the United States of America, the number of ectopic pregnancies has increased dramatically in the past few decades. Based on hospital discharge data, the incidence of ectopic pregnancy has risen from 4.5 cases per 1000 pregnancies in 1970 to 19.7 cases per 1000 pregnancies in 1992. The rise can be attributed part to increases in certain risk factors but mostly to improved diagnostics. The cases- fatality rate has declined from 35.5 maternal deaths per 10,000 ectopic pregnancies in 1970 to only 3.8 maternal deaths per 10,000 ectopic pregnancies in 1989. Even though overall survival has increased, the risk of death associated with ectopic pregnancy remains higher among black and other non-white minority women. No death occurred from ectopic pregnancy in my observation period. Age of the patients were analyzed. It was found that out of fifty six patients forty two patients (75%) age was between 20-30 years , 12 patients were between the age of 31 to 45 years. and 2 patients were below 19 years. If we compare this study with that of Shamima's. In her study she showed majority of the patient's age was in between 20- 30 years. Sahela Jesmin shows in her study that 53.33 % patients were between the ages of 31-40 years. Khan et. al [27]. in a local study of 300 cases , showed 79.99 % patients in 15-34 years age group . In another study by Parveen R, 65% of cases were between the ages of 26-35 years. All of the above studies indicate that highest incidence of ectopic pregnancy in highly fertile period.In this study, the peak incidence (71.43%) of ectopic pregnancy was para - 1-3 and Para >3 is low incidence 16.07 % . Khan et al [27] have shown almost similar observation such as highest incidence among Para 1-3 (38 %), para - 0 (30 %), para 3-5 (20 %) and para - 5 (12 %) Kulsum SU [32] showed peak incidence among para - 1 (37 %), para - 2 (25 %) , then the incidence gradually declines with the increasing Para. Zabin F [29] and Parveen R [30] have also showed that higher incidence of ectopic pregnancy was present among women of low pariety (para-2). The presenting symptoms of ectopic pregnancy were analyzed. 89.28 cases had lower abdominal pain, 85.71 % had history of amenorrhoea , 71.43 % had P / V bleeding , 42.86 % gave history of syncopal attack. Zabin F [29] and Parveen R have reported more or less similar findings. rchibong et al. [15] has found that the presenting symptoms in order of frequency were : abdominal pain 93%, vaginal bleeding 61% amenorrhoea 46%, fainting attack 500 and shock 2%. Khan et al.[27] in a local study showed pain abdomen 97%, history of amenorrhoea 65.33 % , P / V bleeding 7%, H / O syncopal attack I 5.33 % , hypovoluemic shock 22 % . In local study conducted by Zabin F[29] 94% patients presented with shock. This may reflect the fact that our poor patients reach to a tertiary level hospital like KMCH late when the patient's condition is in a very critical stage. Inadequate investigation facilities in the community level may be an important factor which causes delay in diagnosis and

medical management. In this series 60.71 % patients were without contraception and 32.15 % were under contraceptive coverage but somehow it fails. This indicate low coverage of contraceptive in our setting. In 14.29 % of cases, no H / O amenorrhoea could be detected. Among the patients who presented with amenorrhoea, majorities 53.57 % had short period (6-8 weeks) of amenorrhoea. In a study by Khatoon MR[31] 6-8 weeks amenorrhoea was observed in 62.5 % of patients. Zabin F[29] has mentioned that 56 % gave history of amenorrhoea of 6-8 weeks duration and 11 % had no history of amenorrhoea .Kulsum SU[32] have shown 93 % with history of amenorrhoea , among them 62 % had 6-8 weeks amenorrhoea and 7 % had no history of amenorrhoea . Khan et al. [27] showed that 35 % had no history of amenorrhoea and 65 % had history of amenorrhoea and among them 61.67 % had 6-8 weeks amenorrhoea . So all the study including me have shown that commonest duration of amenorrhoea is 6-8 weeks. Among the risk factors identified in this series history of previous MR (42.85 %), history of pelvic infection (28.57 %) and history of infertility (12.50 %) constitute the main bulk of risk factors or ectopic pregnancy. Next comes to the history of C/S, appendectomy & previous ectopic pregnancy 7.14 %. Zabin F[29] and Parveen R[30] have also identified pelvic infection and past history of MR as the main risk factor for ectopic pregnancy in our setup. In this series the number of patients with II.O IUCD (7.14 %) is low whereas in a study by Archibong et al. [15], the number has been stated to be 17%. This may reflect the status of low contraceptive practices in our country. In this series I have found (60.71 %) patients were without any contraceptive method during the disease, only 32.15 % on a contraceptive method . In contrast the incidence of unsafe abortions by untrained and indigenous abortion practitioners is quite high which increases the risk of ectopic pregnancy in our country .Physical findings seem to run along with important symptoms. Abdominal tenderness was present in 92.86% cases of ectopic pregnancy in this series. Shahina A [II] have shown 100 % having abdominal tenderness. Zabin F[29] has reported 100 % cases had abdominal tenderness while Parveen R[30] has mentioned that in 96.6 % of her cases abdominal tenderness could be elicited. JJ Walker et al.[33] have shown 91% cases had abdominal tenderness. Khan et al.[27] have also shown 80% patients have abdominal tenderness. So abdominal tenderness is more or less a constant sign in most observations. Adnexal lump was present in 35.71 % of cases, while cervical excitation test could be elicited in 67.86% cases in this study . Khan et al.[27] have shown palpable adnexal mass in the fornix in 80 % of cases and positive excitation test in 68% cases. Zabin F[29] has observed 10% cases with adnexal lump and 60% had positive cervical excitation test Archibong [5] found that palpable adnexal mass was present in only 2 % of cases while positive cervical excitation test was present in 56 % . This may be due to the fact that, cases may have been diagnosed earlier due to the presence of better investigation facilities. In this study 89.29 % cases needed blood transfusion as a life saving measure and 10.71 % did n't need blood transfusion. The commonly used investigations are blood Hb%, grouping and Rh factor, cross matching, urine for pregnancy test, Ultrasonography serum β-hCG level, posterior colpopuncture. In this study only in doubtful cases investigations were performed. Urine for

pregnancy test 24 cases positive and abdominal ultrasonography positive findings in 30 cases. Which is similar to study of Umme P. Laparotomy was performed in all cases along with resuscitative measures (if needed) and peroperative findings were evaluated. After opening the abdomen tubal ectopic pregnancy were detected in 87.50 % cases . Most of our patients (69.64 %) had ruptured tubal pregnancy which reflects lack of health facilities in the community level and delay in the diagnosis takes our patients to tertiary level hospital in the moribund state. 17.85% cases were diagnosed to be tubal abortion and ampullary part was involved in 61.22 % cases of tubal ectopic pregnancy. Almost similar observation has been made by Parveen R[30] and Zabin F[29] in two local studies. J. Bouyer et al.[34] in 10 year population based study of 1800 cases have shown that most (70%) of the tubal pregnancy occur in ampullary part, this study also shows that current IUCD use protects against interstitial pregnancies, which are the most difficult to manage.

The other sided tube was examined and in 53.57 % of cases, it was found normal looking and in 8.93% cases it was pathological (that is inflamed, peritubal adhesions). Almost similar observation has been made by Parveen R[30] and Kulsum SU[32]. After laparotomy surgery appropriate for each case was performed and unilateral salpingectomy was done in 53.57 % of cases with contralateral tubectomy in 30.36 % of cases as they were parous and completed family. Four cases having unilateral salpingoophorectomy as there were organized tubo-ovarian masses. In this study we have seen one pregnancy in rudimentary horn of bicornuate uterus of 20 weeks durati on presented with massive intraperitoneal haemorrhage and shock and resection of rudimentary horn was done. Only in two cases salpingostomy was done. Milking of the tube was done in another two cases.

In a local study by ZabinF[29], 98 % patients underwent salpingectomy whereas Archibong et al.[15] has noted that in 90 % cases salpingectomy was performed. Most of patients presented with ruptured or grossly damaged tube when conservative treatment where not possible. But Parveen R[30] has shown that salpingectomy was performed in 90 % of cases. This may be due to the fact that conservation of ovary is getting more attention than removal. Khan et al.[2] have shown unilateral alpineectomy in 7100 cases, unilateral salpingoophorectomy in 2 % cases, unilateral salpingectomy with other sided tubectomy in 24.66 % cases, salpingostomy done in 4 cases, removal of abdominal pregnancy in 4 cases and resection of rudimentary horn in 3 cases. Most of the patients had uneventful post operative recovery, only two patients had wound infections.

Conclusion

As the number of cases in the study is comparatively small and duration of study only one year, so more detailed work with large number of cases over several years is desirable to draw any meaningful num inference. It can be concluded that much of the morbidity of the patient due to ectopic pregnancy can be prevented by better obstetrical and family planning care. Delivery should be in total aseptic condition by a skilled birth attendant to prevent incidence of pelvic infection. Medical termination of pregnancy should be by an authorized and trained person and in aseptic condition. Introduction and re-enforcement of family planning program at grass root level should be

diagnostic accuracy as serial human chorionic gonadotropin measurements Am J ObstetGynecol 1994; 170:1822-5.
20. Vally VT, Mateer JR, Aiman EJ, ThomaMI , Phelan MB,. Serum progesterone and endovaginalsonography by emergency physician in the evaluation of ectopic pregnancy. AcsdEmerg Med 1998:5:309-13.
21. Shahina A. study of Ectopic Pregnancy a prospective study of 100 cases. Dissertation.
22. Sadek AL, Schiotz HA. Transaginalsonography in the management of ectopic pregnancy. ActaOlstetGynaccolScand 1995:74:293-6.
23. Ankum WM, Van der Veen F. Hamerlynck V. Lammes FB Suspected ectopic pregnancy. What to do when human chronic gonadotropin levels are below the diseriminatory zone. J Reprod Med 1995:40:525-S
24. McCord ML, Muram D, Buster JE, Arheart KL, Stovall TG Carson SA. Single serum progesterone as a screen for ectopic pregnancy: exchanging specificity and sensitivity to obtain optimal test performance. FertilSteril 1996; 66:513-6
25. Heather Murray, HanadiBaakdah, Trevor Bardell. Togas Tulandi, Diagnosis and treatment of ectopic pregnancy, CMAJ. October 11, 2005; 173 (8): 911.
26. Clausen I. Conservative versus radical surgery for tubal pregnancy A review ActaObstetGynecolScand 1996; 75:12
27. ShamimaSiddiqua, MM Alam, MA Iaher Khan. Ectopic pregnancy-A diagnostic dilemma, Bangladesh J ObsterGynaecol 2004:19 (1):7-10. 81
28. SalehaJesmin. An. analysis of sixty cases of Tubal pregnancy 2003 January. P-64; Dissertation.
29. Zabin F. Study on clinical presentations, management and operative findings of ectopic gestation, IPGMR. Dhaka 1987 Dissertation
30. Parveen R. Clinicopathological study of ectopic tubal pregnancy- A study of 60 cases. IPGMR, Dhaka, 1992; Dissertation.
31. Khatoon MR. Clinical presentation and management of ectopic gestation. IPGRM. Dhaka 1987; Dissertation
32. Kulsum SW. Study on ectopic pregnancy. A prospective study of 100 cases. Department of Obstet and Gynacoloty. BSMMU. Dhaka 2001 (Dissertation)
33. JI Tay, Lecturer, J Moore, Research Fellow, JJ Walker, Professor, Clinical review of ectopic pregnancy. BMJ 2003:320:916-919.
34. J Bouyer, Coste H, Fernandez, Pouly JL and N Job-Spira. Sites of ectopic pregnancy: A 10 years population based study of 1800 cases-Human Reproduction 2002;17(12):3224-3230.

Original Article

Safety, Efficacy & Treatment Outcome of MDR-TB in Chest Diseases Hospital, Khulna, Bangladesh

PK Chowdhury[1], SP Biswas[2], SRM Saiful[3], SMM Haque[4]

ABSTRACT:

Background: Multidrug resistant tuberculosis is a significant public health problem worldwide. It is also a major health problem in Bangladesh since long. **Aims & objectives:** The aims of the present study were to assess the treatment outcome in real life situation and find out the factors that may determine the treatment outcome. **Methods:** This prospective observational study was done in MDR-TB ward of chest Disease Hospital, Khulna, Bangladesh from 19th June 2013 to 19th July 2017.118 patients were registered in our study and provided them treatment using DOTS (Directly observed treatment short course) strategy. Treatment outcomes to Cat-IV anti- TB therapy, any interruptions in treatment, adverse drug reactions, smear conversion etc. were evaluated from the record **Result:** Out of 118 patients, 76(64.4%) were declared cured, 18(15.26%) patients died, 6(5.08%) patients defaulted in treatment and 18(15.26%) patients had treatment failure. Treatment failure was significantly higher in male patients (36.14%), patients with concomitant disease (95.65%) and also bad personal habit (80.77%). **Conclusion:** The treatment success rate of MDR-TB patients had shown improvement under programmatic conditions. But still it is far away from WHO targets.

Keywords: Programmatic conditions, MDR-TB, Treatment outcome

1. Dr. Paritosh Kumar Chowdhury, Professor, Respiratory Medicine, Khulna Medical College.
2. Dr. Sankar Prosad Biswas, Associate Professor, Obs & Gynae, Satkhira Medical College.
3. Dr. SRM Saiful, Respiratory Medicine, Khulna Medical College
4. Dr. SM Moinul Haque, Asstt. Professor, Respiratory Medicine, Khulna Medical College.

Introduction:

Multidrug resistant tuberculosis is defined as tuberculosis (TB) resistant to at least isoniazid and rifampicin, the most potent anti-TB drug [1]. Drug resistant TB (DR-TB) possesses a significant threat to control of TB worldwide. The emergence of drug resistance in tuberculosis (TB), particularly multidrug resistant TB (MDR-TB) is a significant public health problem worldwide. Globally, an estimated 3.5% of the new cases and 20.5% of previously treated cases have MDR-TB and there was an estimated 480000 new cases of multidrug resistant TB (MDR-TB) and additional 100000 people with rifampicin resistant TB (RR-TB) in 2015, which were also eligible for MDR-TB treatment [2].

NTP (National Tuberculosis Control

Programme) Bangladesh has conducted countries first nationwide drug resistance survey in 2010-2011. According to this survey report, the proportion of new TB cases with MDR-TB is 1.4% and that of retreated cases with MDT-TB is 28.25%. On this assumption the estimated total number of MDR-TB cases in 2011 to 2015 in the country were 21,905. But only in 2015, the notified new pulmonary cases were 157026 and retreatment pulmonary TB cases were 8645.[2]

The treatment of MDR tuberculosis is difficult because it is expensive, prolonged and complicated which in turn result in poorer outcome [3]. Treatment and control of MDR-TB requires a sound infra-structure with well-equipped laboratory facilities to provide quality and prompt diagnosis [4]. Since the drug treatment of MDR-TB is extended up to 24 months and associated with major adverse drug reactions (ADRs), well trained vigilant healthcare workers are essential to provide the treatment services and ensure compliance [5].

Tuberculosis is a major public health problem in Bangladesh since long. Under the Mycobacterial Disease Control (MBDC) unit of Directorate- General of Health Service (DGHS), the National Tuberculosis Control program is working with a mission of eliminating TB from Bangladesh. The NTP adopted the DOTS strategy and started its field implementation in November 1993. Now the DOTS services are available throughout the countries including the metropolitan cities. DOTS – Plus program follows a standardized regimen of treatment (labeled as Cat IV) which has shown feasibility and effectiveness with 61% successful outcome in MDR-TB in resource limited countries[2].

It is evident that there is a great scope of improvement in the program. Regular surveillance of the program highlighting both its success and failure is important find weak areas which need intervention for better program outcome [6]. This study was done under controlled and standardized conditions. The aims of the present study were to assess the treatment outcome in real life situation and find out the factors that may determine the treatment outcome.

Materials and Methods:

This prospective observational study was done in MDR-TB ward of chest disease Hospital, Khulna, Bangladesh from 19th June 2013 to 19th July 2017. It was conducted with prior permission from medical superintendent of chest disease hospital, Khulna. This hospital is 50 bedded clinical institution.118 patients were registered in our study and provided them treatment using DOTS (Directly observed treatment short course) strategy. This institution is the pioneer in providing treatment for MDR-TB patients in south west part of Bangladesh since 2007. Patients enrolled in this study were treated with daily supervised regimen in the MDR- TB ward in this institution during intensive phase of treatment.

Culture proven admitted cases of MDR-Pulmonary TB patients were included in this study. We administered six drugs during intensive phase including one injectable aminoglycoside (Kanamycin), quinolone, (Levofloxacin/ ofloxacin), Ethonamide (Eto) & Cycloserine (Cs) from second line and also included Ethambutol (E), Pyrizinamide (Z) from first line of drug theraphy. Duration of intensive phase was extended from 8-12 months.

After completion of intensive phase, patients were discharge with one month of oral medication of continuation phase and

advised to report to the nearest MDR-TB clinic within one month. They were followed in outpatient clinic monthly. During continuation phase, five drugs such as Ofloxacin (Ofx) / Levofloxacin (Lux), Ethambutol (E), Pyrazinamide (Z), Ethonamide (Eto) and Cycloserine (Cs) were given daily for at least one year. Pyridoxine was administered to all patients as a supplement.

Each of the patients was followed up every month for clinical assessment, body weight, sputum smear examination, chest x-ray and ADRs (Adverse Drug Reactions) till completion of 24 months therapy. Monthly two early morning samples of sputum specimen were examined for smear microscopy. After that every 3 monthly smear was done till the end of therapy. For the first 6 months, hematological and biochemical tests (liver and renal function tests) were done every monthly & thereafter as when required

Treatment outcome was categorized as cured, default (lost of follow up), failure and death as per the NTP guide line of PMDT (programmatic management of drug resistance Tuberculosis). A patient was declared cured after complete treatment for at least 24 months with last five smear microscopy became negative. However, patients having two or more last smear positive result were considered as failure, where completed treatment patients did not meet the criteria for cure or failure due to lack of bacteriological results. Patient who interrupted treatment for two or more consecutive months was labeled as default (lost to follow up).

The data was recorded in Microsoft work sheet and analyzed by fisher's exact test and paired students'T' test with the help of Graph pad prism 5.0 soft. P value <0.05 was considered statistically significant.

Result:

Between 19th June 2013 to 19th July2017, total 118 MDR –TB patients were admitted in MDR –TB ward of chest disease hospital, Khulna. Out of which 95 (80.5%) patients became MDR –TB after taking category -1 drug and also 23(19.5%) patients after taking category-11 drug. The most of the patients were relapsed case after completion of both category of drug. All the patients were treated for more than two years including intensive phase and continuation phase. After completion of standardized treatment regimen, 76 (64.4%) patients had a successful outcome. Remaining 42(35.6%) patients had unsuccessful outcome (death, default,& failure) (Table-1). The patients with successful outcome had a weight gain of 8.3+4.6 kg which was significantly higher than those with unsuccessful outcome (P- value < 0.01).

Ninety two (77.97%) patients showed sputum smear negative within 9 months. But maximum patients (72, 61.01%) became negative within 3 months and also 11 patients became smear negative within 6 months. However, out of remaining 26 patients who remained smear positive, 18 patients died, 6 defaults and 1 had treatment failure. Twenty nine (24.58%) patients had suffered from adverse drug reactions. Gastrointestinal intolerance (vomiting& jaundice) 7, neurological &psychiatric disturbance 7, vertigo& impaired hearing 4, joint pain 9 and also allergic reaction 2 which were the common side effects (Table-2).

In this study (resistance to any drug and multidrug) failure were analyzed against age, sex, concomitant disease, personal bad habit, radiological improvement during treatment, effect of Gene expert MTB & rifampicin resistance. Any drug

resistance as well as treatment failure was significantly higher in association with male patients (36.14%), patients with concomitant disease (86.96%) and also bad personal habit (95.65%)(Table-III). Further MDR –TB was also significantly higher in radiological no improvement group during treatment phase and Gene expert MDR-TB & Rifampicin registrant patients.

Table: 1: Treatment outcome among MDR-TB Patients.

Treatment outcome	Number of Patients (n=118)	Percentage
Cure	76	64.4%
Death	18	15.26%
Default	06	5.08%
Treatment Failure	18	15.26%

Table-II: Discontinuation of ATT due to adverse drug effects:

Name of causal drug	Number (percentage) 29 (24.58%)	Reason for discontinuation
Pyrazinamide	9(7.63%)	Joint pain
Cycloserine	7 (5.93%)	Neurological & psychical disturbance
Kanamycin	3 (2.54%)	Decrease hearing
Ethionamide	2 (1.70%)	Vomiting
Kanamycin	3 (2.54%)	Vomiting
Ethionamide/ pyrazinamide	2 (1.70%)	Jaundice
Ethionamide	2 (1.70%)	Allergic reaction
Kanamycin	1 (0.84%)	Vertigo

Table: III: Demographic & clinical factors associated with treatment outcome in MDR-TB patients (n=118)

Characteristics factors	Number of the patient (n=118)	Successful outcome 76 (64.4%)	Failure Rate 42 (35.6%)
Gender :			
Male	83	53 (63.86%)	30 (36.14%)
Female	35	23 (65.71)	12 (34.29%)
Age in years:			
<45	73	44 (60.27%)	29 (39.73%)
>45	45	32 (71.11%)	13 (28.89%)
Concomitant disease			
Yes	23	1(4.35%)	22(95.65%)
No	95	75(78.95%)	20(21.05%)
Personal habit	52	10 (19.23%)	42 (80.77%)
Smoking	32	07 (21.88%)	25 (78.12%)
Alcohol	01	00	01(100%)
consumption	21	05 (23.81%)	16(76.19%)
Tobacco chewing			
Radiological improvement			
Yes	76	64 (84.21%)	12 (15.79%)
No	42	10 (23.81%)	32(76.19%)
Gene expert MTB & Rifampicin resistance	118	76(64.41%)	42(35.59%)

Discussion:

Tuberculosis is a major public health problem in Bangladesh since long. The history of tuberculosis in Bangladesh has different stages. This present study was done to evaluate a four years prospective data on the treatment outcome of MDR-TB under programmatic condition. Our study showed convincing results with 64.4% success rate in treating MDR-TB. This outcome is consistent with Indian study & also recently published meta-analysis report [6-9]. Similar study from other Asian countries had also shown different success rates ranging from 37%-70%[10,11].Though the treatment outcome had improved over a period of time but is still far away from the WHO targets of 75%-90% success rate [2]. So this calls for the need to further review & improve DOTS plus program and also eliminate the factors that are the predictors

of poor outcome.

In spite of treatment, 15.26% of patients (n=18) died in the course of treatment. This result is better than in Indian study but higher than the results of recent two meta-analyses [6,7,8]. Maximum death (66.66%) in our study occurred within six months of initiation of treatment. Possible causes included bilateral extension of pulmonary disease leading to respiratory failure, supper added infection and adverse drug reaction. Early detection of complications by the DOTS provider and early referral might help in reducing mortality. Our study also showed the treatment default rate of 5.08 %(n=6) which is significantly better than 21% as achieved in Indian study [6,12]. Treatment default is an important parameter to judge the performance of the program. Patients counseling and treatment supervision might help the treatment outcome of the program.

Sputum smear & culture examination indicates the bacteriological load, infectious status of the patient & bacteriological improvement. Initial sputum culture in first 3 months and negative conversion is essential to label the patients non-infections. The sputum culture conversion rate varies from 74% to 92%in different studies across the globe [5,13,14]. But in Chest Disease Hospital, Khulna has no culture facility. So we had to depend on smear examination result only. Surprisingly our study showed 72(61.02%) patients became sputum smear negative within first 3 months of treatment.

The study also showed that maximum female patients became sputum smear negative and radiological improvement within three month which was associated with successful outcome. So success rate (65.71%) was more in female. As females were more vigilant and comply with drug treatment as compared with female. They are also less liable to (default) loss of follow up during the treatment. Radiological improvement to MDR-TB treatment was a good predictor of a successful outcome with a strong correlation [15,16]. The successful patients achieved radiological improvement

Different factors affect the results of our study. Smoking & Tobacco chewing and alcohol had been associated with poor outcome including death, default & treatment failure. This result is consistent with other study throughout the Globe 17,18. However tobacco related factor grossly affect the outcome of our study. Most of the failure cases (80.77%) have had a history of having bad habit.

Conclusion:

The category IV regimen of DOT-plus under PMDT program in MDR-TB patients produced significant improvement in body weight, bacteriological and radiological examinations result. Treatment success rate in MDR-TB had shown improvement over the year. But it is still far away from WHO target. So the result suggest that any interventions should be taken to improve nutritional status of the patients as well as measures to ensure training of the DOT care provider & raise public awareness about the programme of MDR-TB patients management.

References:

1. World health organization. Guidelines for the programmatic management of drug- resistant tuberculosis. Emergency update (WHO/HTM/TB/2008.402). GENEVA, SWITZERLAND 2008

2. World health organization. Global Tuberculosis Report:2016S

3. Tahaoglu K, Torun T, Sevim T, Atac G, Kir A, Karasulu l. The treatment of multi drug resistant tuberculosis in Turkey. N England J Med 2001; 345:170-4.

4. Nathanson E, Lambregts-Van Weznbeek C, Rich Ml.gupta R, Bayona J, Blondal K et al. Multidrug-resistant tuberculosis in resource-limited settings. Emerg Infect Dis 2006;12:1389-97

5. Singla R, sarin R, khalid UK, Mathuria K, Singla N, Jaiswal A, et al. Seven-year DOTS-plus pilot experience in India: results, constraints and issues.Int J Tuberc Lung Dis 2009;13:976-81

6. A.K.Janmeja, Deepak Aggarwal,RuchidaDhillon. Analysis of treatment outcome in multidrug resistant tuberculosis patients treated under programmatic conditions. International Journal of Research in Medical science 2017;5(6) :2401-2405.

7. Kibret KT,Moges Y,Memiah P,Biadgilian S. Treatment outcomes for multidrug –resistant tuberculosis under DOTS- Plus; A systemic review and meta-analysis of published studies. Infec Dis Poverty 2017;6:7

8. Johnston JC, Shahidi NC, Sadatsafavi M, Fitzgerald JM. Treatment outcome of multidrug –resistance tuberculosis: a systemic review and meta-analysis. PloS one2009; 4:6914.

9. Orenstein EW, Basu S, Shah NS, Andrews JR, Friedland GH, Moll AP, et al. Treatment outcome among patient with multidrug-resistance tuberculosis: systemic review and meta- analysis. Lancet Infect Dis 2009; 9:153-61.

10. Jeon DS, Shin DO, Park SK, Seo JE, Seo HS, Cho YS, et al. Treatment outcome and mortality among patients with multidrug- resistant Tuberculosis in tuberculosis hospital of public sector. J Korean Med Sci 2011; 26:33-41.

11. Van Deum A, Salim MA, Das AP, Bastian I, Portaels F. Result of standardized regimen for multidrug-resistant tuberculosis in Bangladesh. Int J Tuberc Lung Dis.2004;8:560-7

12. Jain K, Desai M, Solanki R, DikshitRk. Treatment outcome of standardized regimen in patients with multidrug resistant tuberculosis. J PharmacolPharmacother 2014; 5:145-9.

13. Van DA, Salim MA Das AP, Bastian I, Portaels F. Results of a standradised regimen for multidrug-resistant tuberculosis in Bangladesh. Int J Tuberc Lung Dis 2004; 8:560-7.

14. Prasad R, Verma SK, Sahai S, Kumar S, Jain A. Efficacy and safety of kanamycin, ethionamide, PAS, and cycloserine in multidrug-resistant pulmonary tuberculosis patients. Indian J chest Dis Allied Sci 2006; 48:183-6.

15. Park SK, Lee WC, Lee DH, Mitnick CD, Han L, Seung KJ. Self-administered, standardized regimens for multidrug-resistant tuberculosis in South Korea. Int J Tuberc lung Dis 2004; 8:361-8.

16. Kliiman K, Altraja A. predicators of poor treatment outcome in multi-and extensively drug-resistant pulmonary TB. Euerespir J 2009; 33:1085-94.

17.Shean KP, Willcox PA, Siwendu SN, Laserson KF, Gross L, Kammerer S, et al. Treatment outcome and follow-up of multidrug-resistant Tuberculosis patients, West Coast/Winelands, South Africa, 1992-2002.Int J Tuberc Lung Dis 2008; 12:1182-9.

18. Shin SS, Pasechnikov AD, Gelmanova IY, Peremitin GG, Strelis AK, Mishustin S, et al. Treatment outcomes in an integrated civilian and Prison MDR-TB treatment program in Russia. Int J Tuberc Lung Dis 2006; 10:402-8.

Original Article

Evaluation of the Incidence of Hypovitaminosis-D in Patients With Suggestive Clinical Features.

A Kader [1], MHM Alamgir[1], AHSM Kamruzzaman [2], MM Rahman [3], SM Shahnewaj[4]

ABSTRACT:
Hypovitaminosis-D is an under diagnosed neglected epidemic in our country. Most of the females and many males are suffering from the problem. As the symptoms vary according to the severity of the deficiency, most patients are reluctant to treat the condition. Due to a wide variety of musculoskeletal symptoms it has a negative impact on a person's daily activities. All patients having suggestive clinical features should be investigated for the deficiency and treated accordingly.

Key word: Hypovitaminosis-D

1. Dr. Abdul Kader. Senior consultant (ortho), Shahid Sheikh Abu Naser Specialised Hospital, Khulna.
1. Dr. MHM Alamgir, Associate Professor of orthopaedics, Shahid Suhrawardi Medical College, Dhaka.
2. Professor Dr. AHSM Kamruzzaman, Professor of orthopaedics, Satkhira Medical College, Satkhira.
3. Dr. Md. Mustafijur Rahman, Junior Consultant (ortho), Shahid Sheikh Abu Naser Specialised Hospital, Khulna.
4. Dr. SM Shahnewaj, Junior Consultant (ortho), Sadar Hospital, Bagerhat.

Introduction:

One billion people worldwide have hypovitamenosis-D.[1] German researcher Adolf Windaus first discovered three forms of vitamin D which he called D1, D2 and D3. It was later learned that the vitamin –D1 was a mixture of compounds rather than a pure vitamin-D product. So, the term D1 is no longer used. Vitamin-D2 or ergocalciferol comes from plant sources and vitamin-D3 or cholecalciferol is the internal form that we make in our body when the UV light (UV-B) of sunray fall on the bare skin. 90% vitamin-D thus produced in our body with the help of sunray and only 10% comes from the food sources. Dietary sources are fatty fish like salmon, tuna, mackerel etc, beef liver, cheese, egg yolk and some mushrooms. Daily need of vitamins-D is around 600 I.U / day[2-7]. In a fair skinned person, 20-30 min of sunlight exposure on the face and forearms of midday is estimated to generate the equivalent of around 2000 I.U.of vitamin-D[6]. Two to three such exposures to sunlight each week is sufficient to achieve healthy vitamin-D level[6]. There may be no clinical feature in mild to moderate vitamin-D deficiency for years. But in severe deficiency, patients may come with bone and muscle pain, general malaise, muscle weakness esp of

proximal limb muscles, backache, difficulty in walking or walking upstairs and getting out of a chair, repeated falls, stress fractures etc[6]. Very low levels of vitamin-D (<10 ng/ml) for prolonged period is required to produce osteomalacia (bone softening) or rickets. Normal vitamin-D3 level of healthy people is 30-100 ng/ml.

Materials and methods:

We reviewed the results of vitamin-D3 level of patients presented to us with features of hypovitaminosis-D. The study was conducted between June-2014 to September – 2018 in some Government and private hospitals of Khulna. Dhaka and Satkhira and the results of vitamin- D3 level was recorded and finally analysed in several ways.

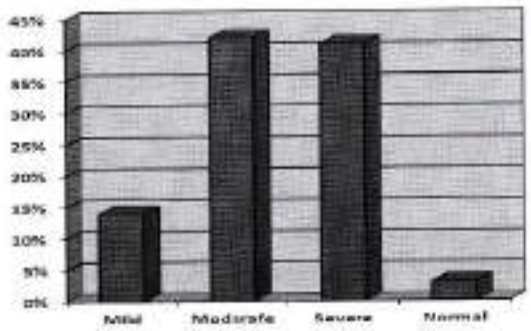
Results:

We reviewed the results of vitamin-D level in total 173 patients. Deficiency status was categorized an mild (vitamin-D level - > 20 - < 30 ng / ml), moderate (vitamin-D -10-20 ng/ml) and severe (< 10 ng / ml).

Patient selection criteria-

a. chronic back pain.
b. chronic bony pain.
c. chronic muscle aches.
d. Unexplained weakness, fatigue.
e. chronic muscle cramps.

There was mild deficiency in 25 patients, moderate deficiency in 72 patients, severe deficiency in 70 patients and normal vitamin- D level was found in only 06 patients. Deficiency category among 173 patients. n=173



Among the vitamin-D deficient patients there was 4 % males and 96% famales. n= 167.

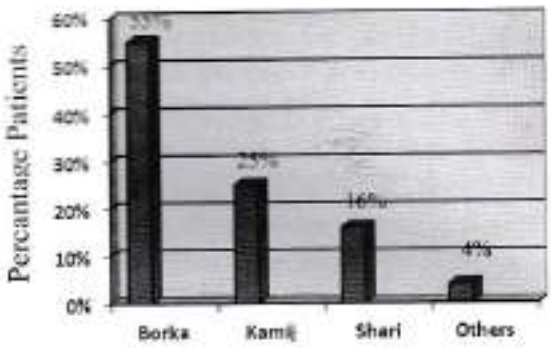
64% patients came from rural areas and 36% patients from urban areas. n= 167

Among the severely deficient patients of vitamin-D, 32% was in the age grump of 12–30 years, 31 % in 31-50 years and 52 % in > 50 years age group. (n=70)

Among the mild and moderately deficient patients of vitamin -D, 32% was in 12-30 years age group, 27% was in 31-50 years age group and 41% was >50 years old.

Among the vitamin-D deficient patients (n=167) 93% was muslim and 7% was Hindu.

The dress code among the vitamin-D deficient patients (n=167) was as follows-Borka-55%, Kamij-25%, Shari-16% and others-4%.



Discussion:

Vitamin-D deficiency is a global problem. One billion people worldwide have hypovitaminosis-D1. In U.K. > 50% adult population have hypovitaminosis-D and 16 % develop severe deficiency in winter and spring1. In countries with prolonged winter season people have the risk to develop more hypovitaminosis-D. In our country, though there is no shortage of sun shine but people esp the females have greater risk to develop hypovitaminosis-D due to their dress habits. Due to their religious and social bindings they wear

clothing's covering the whole body (like borka, kamij etc) with small chance to get sun shine directly on to their skin. 90% vitamin-D is produced when sun shine (B-ultraviolet ray), fall directly onto the skin. A series of chemical reaction occurs in skin, liver and kidneys to produce the ultimate active form of vitamin-D. Only 10 % vitamin-D comes from dietary sources[1]. Most of the tissues in our body have receptors of vitamin-D and many functions of vitamin-D is yet to be discovered besides their action on bones, teeth and intestine.

In our study 96% ware female patients that correctly reflects the need for adequate exposure to sun shine. Among our patients 83% were suffering from moderates to severe deficiency of vitamin -D denoting it as an overlooked major health hazard. Our study mentioned, exposure to sun shine is more important than the habitat - either rural or urban. Elderly people (> 50 years of age) were the major group suffering from severe hypovitaminosis-D (52%) probably due to their prolonged stay at home & less sun exposure.

The risk factor of hypovitaminosis-D is dark skinned people, children and elderly (>65 years), pregnancy, obesity, heavy clothing, exclusive breast fed infants (<6 months of age), prolonged house bound or hospitalized persons, poverty, vegetarians, alcoholism, living countries at high altitudes and family history of vitamin-D deficiency.

Melissa K. et al[2] found that hyporitaminosis-D is common in general medical inpatients, including those with vitamin-D intakes exceeding the recommended daily amount and those without- apparent risk factors for vitamin-D deficiency.

Md Zahirul Islam at al[3] found that vitamin-D deficiency and borderline vitamin D status was very common in different groups of adult Bangladeshi women - veiled & non - veiled.

Shakil Mahmood et al[4] found a high prevalence of vitamin D deficiency in the Bangladeshi female garment workers (100%), GR et al[5] found that vitamin-D deficiency is prevalent in epidemic form in all over the Indian subcontinent (70–100 %) & subclinical vitamin -D deficiency is highly prevalent in both urban & rural settings.

Conclusion :

Hypovitaminosis-D is an under diagnosed neglected epidemic in our country. We should care for hypovitaminosis-D in every aspect of our daily practice.

References:

1. Podd, Daniel. Hypovitaminosis-D: A common deficiency with pervasive consequences. Journal of the American Academy of Physician Assistants, February 2015-volume 28- Issue 2 . P 20-26.

2. Melissa K. Thomas, M.D. Donald M. Lloyd. Jones, M.D., Ravi I. Thadhani. et al. Hypovitaminosis-D in medical Inpatients. N. Eng J Med 1998; 338: 777-783.

3. Md. Zahirul Islam, Mohammed Aktheruzzaman and Christel Lamberg-Allardt. Hypovitaminosis-D is common in both veiled and nonveiled Bangladeshi women. Asia Pac J clin Nutr 2006; 15 (1): 81-87.

4. Shakil Mahmood, Matiur Rahman, Subrata Kumar Biswas, Shaikh Nazmus Saqueeb, Shiblee Zaman. Vitamin-D and parathyroid hormone status in female garment workers: A case control study in Bangladesh. Hindawi Bio Med Research International. Volume 2017.

5. GR. Gupta A. Vitamin-D deficiency in India: Prevalence, Casualties and Interventions. Nutrients 2014 Feb 21: 6(2); 729-75.

6. Endocrine society of India Expert group. Vitamin-D deficiency in India: Recommendations for prevention and treatment. Indian J Endocrinol Metab. 2016.

Original Article

Immediate Post Partum Complication – A Cross Sectional Study in Shaheed Suhrawardy Medical College and Hospital

MR Khatun[1], Afroza Akhter [2], F Hossain[3]
E Ara[4], K Fatema[5], S Zahan[6]

ABSTRACT:
Introduction: Social and medical progress in the twentieth century has eliminated many of dangers of child bearing female. In South Asia a woman dies as a result of complications arising from pregnancy and childbirth, 40 women suffer from painful and permanent disability. **Objectives:** The main aim of the study was to evaluate the common problems encountered in immediate puerperium in our country with special attention to identify the preventable risk factors so that appropriate measures can be taken to reduce the morbidity and mortality during this period. **Methodology:** This is a cross sectional study conducted in a tertiary hospital of Bangladesh- Shaheed Suhrawardy Medical College And Hospital. over a period of one year January 2007 to December 2007. One hundred randomly selected patients who were admitted for delivery. **Results:** Majority of patients (78%) admitted were between the age range of 18 to 30 years. Only 4 percent of the patients were less than 18 years and 18 percent were more than 30 years. **Conclusion:** Haemorrhage is the most common cause of postpartum death. Prevention and treatment of anaemia, hospital delivery for high risk pregnancy, supervision of each labour by skilled personnel, appropriate and active management of third stage and judicious use of oxytocin, ergometrin, prostaglandin or other uterine stimulant can prevent a considerable proportion of postpartum haemorrhage.

1. Dr. Mst Rahima Khatun, Asst. Prof Obs & Gynae , Satkhira Medical College.
2. Dr Afroza Akhter , Asst. Prof Obs & Gynae , Satkhira Medical College.
3. Dr. Farhana Hossain , Asst. Prof Obs & Gynae , Satkhira Medical College.
4. Dr. Ehsen Ara , Senior Consultant , Obs &Gynae , Sadar Hospital Satkhira .
5.Dr. Kaniz Fatema , Junior Consultant , Obs &Gynae , Sadar Hospital Satkhira.
6. Dr. Sharifa Zahan, Lecturer, Community Medicine, Satkhira Medical College.

Introduction:

Social and medical progress in the twentieth century has eliminated many of dangers of child bearing. South Asia is the region of 22% of world population, but accounts for 50% of world's maternal deathThe technology to save women's lives and prevent their disability is available today, yet in every two minutes, somewhere in South Asia a woman dies as a result of complications arising from pregnancy and childbirth, 40 women suffer from painful and permanent disability.

Expert from around the world acknowledge, however that almost all

maternal deaths could be prevented if all women were cared for by a professional health worker (midwife, nurse, doctor) with the midwifery skills in the most critical period during and immediately after childbirth. Having a health worker with midwifery skills present at child birth, back edup by transportin case of emergency referral if required, is perhaps the most critical intervention for making motherhood safer [1]. Much attention has been focuse don antenatal care for preventing maternal mortality. But very few studies have examined postpartum care, even though over half of all maternal death occurs in the post partum period[2].

In developing countries maternal mortality was referred to as a neglected tragedy in 1985[3]. The lack of attention to postpartum care in developing countries is another neglected tragedy, and requires immediate attention.

This study examines the incidences of postpartum complications by reviewing puerperal cases in immediate postpartum period (first twenty four hours following delivery). The study also focuses on distribution and type of postpartum complications, period of highest risk, important risk factor and recommended postpartum activities to prevent death from postpartum complication.

Methodology

•This is a cross sectional study conducted in a tertiary hospital of Bangladesh-Shaheed Suhrawardy Medical College and Hospital, over a period of one year January 2007 to December 2007. One hundred randomly selected patients who were admitted for delivery.

Detailed history with special attention to previous antenatal records were taken, from each patients. Then to identify the risk factors (many patients had no antenatal checkup) a through clinical examination was performed. Urine was examined for protein, Hb percentage by haemoglobin paper and blood grouping and Rh typing was done in all cases and ultrasonography was done in some cases when it was available.

The patients were categorized as risk when they were diagnosed as cases of teenage pregnancy, grand multiparity, severe anaemia, pre-eclampsia, eclampcia, antepartum haemorrhage (APH), prolonged labour, obstructed labour and prolonged ruptured membrane. Labour was monitored in all the cases. Partograph was maintained in those case sthat-were selected for vaginal delivery; Whenever there was any deviation from normal appropriate measures were taken immediately. Active management policy was adopted in managing third stage of labour. The patients were closely observed for 24 hours following birth of the baby to detect any abnormalities and they were managed with due attention.

The complications encountered thoroughly and were evaluated in tabulated form (some in graphs) and analyzed by statistical method. Sample was taken upon i8nclusion and exclusion criteria.

Results

Majority of patients (78%) admitted were between the age range of 18 to 30 years. Only 4 percent of the patients were less than 18 years and 18 percent were more than 30 years. Among 100 patients 45 percent were primi and 25 percent were multlgravida. About 30 percent of the admitted patients were in between the above two groups. Out of 100 patients, 99 percent of the patients were clinically anaemic. Only 1 percent of patients was found to be severely anaemic. At the time of admission, most of the patients (91%) had normal temperature. Some patients presented with mild rise of

temperature (due to premature rupture of membrane, obstructed/ prolonged labour, trial at home). Only 4% patients presented with features of chorioamnionitis (temperature more than 101°F). Among the admitted patients 12 percent were pre-eclamptic and 6 percent patients were admitted with ante partum haemorrhage. Out of 100 patients 13 percent were admitted with prolonged labour and 2 percent were admitted with obstructed labour. Out of 100 patient 8 percent, were admitted with prolonged ruptured membrane. Out of 100 patient only 34 patient needed LSCS. Among them 29 were high-risk group and 5 were of non riskgroup. Only 1 patient under went subtotal hysterectomy and 1 needed caesarean hysterectomy who had placenta accrete and other patient who had gangrenous uterus following chorioamnionitis. Spinal headache was experienced in 2% of patient with PE, in 3% of patient of prolonged labour, 2% percent of with obstructed labour, in 1% of patient of patients with prolonged ruptured membrane. Post operative pain was experienced in 1% of teenaged .pregnant patient, in 1% of grand multipara patient, patient with severe anaemia and in patient with prolonged ruptured membrane, in 3% patient of PE, in 2% patient of APH and in 1 % of patient of prolonged labour. Temperature was raised in 1% of patient with prolonged labour and obstructed labour and in 3% of patient with prolonged ruptured membrane. Tachycardia was found in 1% of patient with severe anaemia and in patient with prolonged labour, 1% of patient with APH, 1% of patient with obstructed labour and in 3% of patient with prolonged ruptured membrane. 1% of patient with prolonged labour and 1% of patient with obstructed labour experienced paralytic ileus. Urinary retention was found in 1% of non-risk group patient and in 2% of patient with prolonged labour.Out of 100 patients, 9 patients suffered from postpartum haemorrhage due to atonic uterus. 3 were treated conservatively, manual removal of placenta was done in 1 patients, whileno patients needed dilatation and curettage .Only 1 patient needed intrauterine inflation of balloon catheter and B-Lynchbrace suture of uterus was given in 1 patient. Repair of perineal tear was not done any patient; cervical tear was repaired in 1 patient. Exploration of broad ligament hematoma by laparotomy was not needed in anypatient. Among 100 patients who were under observation death rate is 1%. One patient died due to obstetric shock.

TABLE I: DISTRIBUTION OF PRESENT MODE OF DELIVERY BY RISK GROUP OF PATIENTS (N=100)

Present mode of delivery	Non Risk Group		Risk Group	
	No. of patients	Percent	No. of patients	Percent %
Normal vaginal delivery without episiotomy	25	25	9	9
Normal vaginal delivery with episiotomy	15	15	8	8
Ventouse extraction	3	3	2	2
Forceps delivery	2	2	0	0
Lower Segment caesarean section	5	5	29	29
Subtotal hysterectomy following ruptured uterus	0	0	1	1
Caesarean hysterectomy	0	0	1	1

Discussion

This study was conducted in Shaheed Suhrawardy Medical College And Hospital where a large number of patients (particularly from lower socio-economic condition) seek admission for management. A total of 100 patients were randomly selected who attended. the obstetric ward for confinement. At first patient were categorized taking some known risk factors as variables. Age distribution of patients about 78% were of 18-30 years of age. Only 4% were aged below18 years and 78% were above 30 years. The study by Afsana Rin Mymensingh Medical College Hospital (MMCH) showed the number of patient between18 30 years of age group were 80% and only 20% were above 30 years[4-6]. In this study shows only 0.33% of teenage pregnant woman had PPH due to perineal tear.-'According to 45% of the admitted patients were primi and 25% patients were grand multipara. In Afsana's study the percentage were 31% and 20.5% respectively [7-8]. In my study shows 1% of grand multipara had PPH due to atonic uterus.

Out of 100 patient only 1 patient was detected as severely anaemic. These cases were managed timely and adequately. Only one patient with severe anaemia suffered from PPH due to atonic uterus.

• Incidence of postpartum haemorrhage following prolonged labour was 4.7 percent by Jeff cote, in Arun's study it was 6%, in Dr. Maliha's study it was 4%26and in my study it was only 2% [7-9].

• Out of 16 patients with pre-eclampsia, only 2 had PPH due to atonic uterus. One patient had perinea! tear and one patient had cervical tear. Patients with APH were 5 in number and only 1 had atonic uterus. This low percentage of PPH in risk group of patient was due to active management of third stage of labour with injection oxytocin two ampoule IM following birth of baby. Analogue of prostaglandin E1 are effective uterotonic preparations of a new generation[9-11]. Any oxytocic drug administered in the third stage of labour reduces the blood loss with approximately 40% and the incidence of postpartum haemorrhage from 10% to 6%. Therefore, routine active management of third stage with an oxytocic drug is strongly advocated. Because of the fewest side effects oxytocin of is regarded as the best drug available at this moment [12]. Injectionoxytocin into umbilical vein seems to be effective, quick and safe in the management of retained placenta and decreases the risks associated with the use of anaesthesia and puerperal complication such as infection and trauma to the uterus• Intraplacental injections of collagenase via umbilical cord arteries may help to detach retained placenta in women. Injection of oxytocin into umbilical vein or intra placental injection of collagenase are not practiced here.

One patient with atonic uterus was treated with balloon catheter and B-Lynch brace suture was given in.uterus in one case.

The B-Lynch Suturing technique (Brace suture) may be particularly useful because of its simplicity of application, life saving potential, relative safety and its capacity for preserving the uterus and thus fertility One patient had broad ligament haematoma which could not be managed conservatively and needed laparotomy followed by hysterectomy. Prevention of complication that gives rise to hysterectomy andoptima lly timed surgery should decrease maternal morbidity and mortality [13]. Puerperal haematoma is a grave but fortunately rare postpartum complication. The different risk factors

include primiparity, instrumental extraction of the foetus, pre-eclampsia, twin pregnancy and the presence of vulva-vaginal varicose-veins [13]. Placenta increta, placenta acreta, placenta percreta, placenta praevia, uteroplacentalapoplexy, scar disruption uterus rupture, atony, sepsis puerperalis, abruptio placentae, haematomaparavaginale as urgent indication.

A total of 15 patients were admitted with prolonged labourand obstructed labour and only 2% had postpartum abdominal distention due to paralytic ileus. This low percentage of complication was due to adequate management with nasogastric suction, withholding oral food, IV infusion, IV administration of H2 blocker andantibiotics.

This study shows temperature was raised in 6 patients out of 8 patients with prolonged ruptured menbrance, in 1 patient with obstructed labour and in 1 patient with prolonged labour. Whereas shows a total number of 9 patients had ranging from 99°F to 101°F. The number of patients with postpartum raised temperature was significantly reduced due to use of broad spectrum antibiotics and restricted pervaginal examinations. Group A and group B streptococci are wide spread and may cause sepsis and important lifelong morbidity or mortality of the newborn. Obstetricians today try to establish cost-effective prophylactic measures during labour to prevent these neonatal infections [9]. Restriction of multiple pelvic examinations during the antepartum period and of prophylactic use of broad spectrum antibiotic reduced the severity ofinfection.

This study showed occurrence of complete perineal tear, in that case an episiotomy results in complete perineal tear(though it is very unlikely). The baby was big enough weighing 3.9 kg. Special attention should be directed toward risk factors for this complications. Symptoms of anal incontinence should be elicited at follow-up after delivery. Sphincter tears were associated with nulliparity, postmaturity, fundal pressure, midline episiotomy and fetal weight [8].

Headache due to spinal anesthesia was present in 7 patients . All these cases were treated conservatively with IV fluid (1.5 .L to 2.5 L), tablet paracetamol and tablet stemetil.

One study described a patient with ITP who presented with postpartum haemorrhage. In our study we did not find any patients with ITP.

In our study maternal mortality is 1%. There is paucity of research data on maternity related deaths in Bangladesh. During the 1950s a hospital based study in selected urban areas of Bangladesh estimated a maternal mortality rate of 20/1000 live birth (Islam, 1971) and a study at Dhaka Medical College Hospital reported a maternal mortality of 34/1000 births (Robinson, 1967 [3-6].

In two studies in Bangladesh 1st in 1967-1968. Matlab and 2nd in 1968-1970 in Matlab, the maternal mortality rates for a rural community of Bangladesh without access to modern health services were found to be 7.7 and 5.7 deaths per thousand live birth. At present MMR is 4.2 per thousand live birth (according to Bangladesh Bureau of statistics, 1999) though a reduced number has been reported by many NGOs. Maternal mortality declined from 3.2 per thousand live birth in 2001 to 1.94 per thousand live birth in 2010, a 40% decline in 9 years.

Survey conducted in western countries show that most of the maternal emergencies requiring admission to an intensive care unit. Actually those of the prenatal period; some are specific to hypertensive disorder of pregnancy , post delivery haemorrhage, acute fatty liver of pregnancy; other such as septic or embolic shock, cardio-myopathy. In B.K.Z.M .C. &S.S.H. during the study period no cases were diagnosed as obstetric emergency due to acute fatty liver of pregnancy embolic shock or cardio-myopathy.

Conclusion

Primary prevention for the most part should occur during labour and delivery, or even earlier (prepregnancy and antenatal care). Many of the complications cannot be predicted accurately or prevented.

Haemorrhage is the most common cause of postpartum death. Prevention and treatment of anaemia, hospital delivery for high risk pregnancy, supervision of each labour by skilled personnel, appropriate and active management of third stage and judicious use of oxytocin, ergometrin, prostaglandin or other uterine stimulant can prevent a considerable proportion of postpartum haemorrhage.

References

1. Bhuiyan AB, Begum F. An update: Skilled Birth attendance (Grameen Midwife) Training Pilotprogram.
• In: Perinatal News (Bangladesh perinea! society) January 2003; Issue-2:5.

2. Alauddln M. Maternal Mortality 13angladesh, Tangall District; Stud Fam Planning 1986; 17:3-21.Livingstone Pvt. Ltd, New Delhi 1998; 175-267.

3. Rosenfield A. Main D.Maternal Morality-aneglected tragedy: where is the MinMCH? Lancet1985; 446:83-85.

4. Novy MJ. Normal puerperium. In: Dechrney AH, Nathan L, editors. Current Obstetrics and Gynaecologic Diagnosis and Treatment. 8thEdition. Prentice Hall International, Inc. 1994;240-274.

5. Dutta DC .Normal puerperium.In: Text Book of obstetrics including perinatology and contraception.
ih Edition. New Central Book Agency (P) Ltd, 201-1;-144-153.

6. Howie PW. The puerperium. In:Edmonds DK, editor. Dewhurt's Textbook of Obstetrics and Gynaecology for post graduates. 6th Edition. Oford:BlackwellScienceltd,2001;342°353.

7. Ganong WF. The Gonads: Development and functions of reproductive system. In: Review of Medical Physiology. 20th Edition. Mcgraw for post graduates. 6th Edition.Mcgraw-HillMedicalPublishingDivision 2001:398-399.

9. Donald I. Postpartum Collapse. In: Practical obstetric problems. 5th Edition. PG publishing-Pte, New De.lhi1988;716-747.

10.Dutta DC. Complication of third stage of labour. In: Text Book of obstetrics including perinatology and conceptration. 5th Edition. New Central Book Agency (Pl Ltd.,20011;441-453.

11.Arias F. Postpartum Problems. In: Practical guide to High-Risk .pregnancy and delivery. 2nd Edition. Singapore: Harcart Brace &Company Asia Pte. Ltd.,433-449.

12.Decherney AH, Nathan L. Postpartum haemrrhage and the abnormal puerperium. In: Current obstetrics and Gynaecologic Diagnosis and Treatment. 8th Edition. Prentice Hall International, Inc. 1994; 574-593.

13.Vaginal bleeding after child birth. Managing complications in child pregnancy and child birth: A guide for midwives and doctors. IMPAC [Integrated management of pregnancy and child birth) WHOUNICEF:WORLD BANK SHR Department of reproductive health and research. World Health Organization, 2000; S- 25.

Original Article

Clinical Evaluation of the Normal Elbow Carrying Angle in Adults : Its Sex and Side Difference

S A Islam[1], A Afroze[2], M Hasanuzzaman[3], S Sharmin[4], M Ferdous[5], A Akhter[6], T K Das[7]

ABSTRACT:

Background: The laterally opened angle between the long axis of the extended forearm with the long axis of the arm is called carrying angle. Due to the presence of carrying angle forearm becomes straightened out during the usual working position of almost full pronation. **Objective:** To evaluate the normal elbow carrying angle by clinical method in both sexes and to find out sex and side difference of carrying angle evaluated by clinical methods. **Materials and Methods:** A total 50 respondents were selected as sample purposively for this cross-sectional type of descriptive study. Carrying angle was measured in the living with manual goniometer. **Results:** The carrying angle ranged from 156° to 172° with a mean of 163.00° ± 3.095 by clinical method; 163.70° ± 3.182° in males and 162.30° ± 2.901° in the females; 162.78° ± 3.234° on right side and 163.22° ± 3.119° on left side. **Conclusion:** The study concluded that the mean carrying angle difference between the sexes and sides was not statistically significant ($p>0.05$). The study helps establishing a reference data-base on carrying angle, its sex and side difference in Bangladeshi population. It also helps the orthopedic surgeons to manage elbow disorders and evaluate elbow reconstruction occurring after supracondylar fracture of humerus.

1. Dr. Syed Amanul Islam, Assistant Professor, Anatomy, Satkhira Medical College.
2. Prof. Dr. Akhtari Afroze, Head of Anatomy Department, Rajshahi Medical College.
3. Dr. Md. Hasanuzzaman, Junior Consultant, Surgery, OSD, DMCH.
4. Dr. Shahin Sharmin, Lecturer, Anatomy, Rajshahi Medical College.
5. Dr. Mokerroma Ferdous, OSD-Attachment, BSMMU.
6. Dr. Afroza Akhter, Assistant Professor, Obs & Gynae, Satkhira Medical College.
7. Dr. Tarun Kanty Das, Assistant Professor, Paed, Satkhira Medical College.

Key Words: Carrying angle, elbow joint and goniometer.

Introduction:

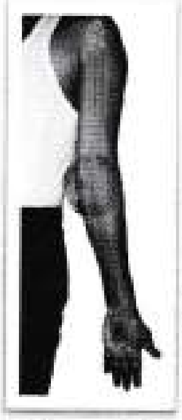
The laterally open angle between the long axis of the extended forearm with the long axis of the arm is called carrying angle [1]. Apes and humans are different from other primate species due to presence of carrying angle at the elbow. The carrying angle ranged from 155° to 180° or, if one uses the supplementary angle, usually 0° –25° [2,3].

A curved ridge which joins the prominences of the coronoid and olecranon processes of the ulna fits the groove in the trochlea of the humerus. The obliquity of the shaft of the ulna to this ridge accounts for most of the carrying

angle at the elbow.

Due to the presence of carrying angle forearm becomes straightened out during the usual working position of almost full pronation. The evolution of carrying angle in human increases the manual precision of upper limb [4]. This elbow angulation is inversely related to the height of a person [5]. The carrying angle permits the forearms to clear the hips in swinging movements during walking and is important when carrying objects [6].

Materials & Methods:



In this Descriptive Cross Sectional Study 50 adult (age ≥18 years) respondent are selected purposively, of them 25 were male and 25 were female. Clinical measurement of carrying angle of both elbow joints was done in each individual.

An improvised instrument goniometer was used for measurement of carrying angle in the livings. The fixed arm of which was placed on the median axis of the upper arm, the movable arm adjusted as to lie on the median axis of forearm and the angle was read on the goniometer in degree. The lateral border of the cranial surface of the acromion, midpoint of the lateral and medial epicondyles of the humerus on the biceps brachii tendon at the crease of the elbow, midpoint of the distal radial and ulnar styloid processes on palmaris longus tendon at the wrist were palpated and marked as anatomical landmarks to demarcate the median axes of the arm and the forearm respectively [7]. Measurement of carrying angle was taken on both side of the respondent.

Results:

Among the 50 respondents 25 were male and 25 were female. Male female ratio was 1:1. Mean age of the participants were 33.78 ± 8.96 years, ranged from 20-56 years. The carrying angle was measured on both sides of all the 50 participants by clinical method.

Table 1: Clinical Measurement of Carrying Angle, Sex and Side Difference

Sex (N)	Side (N)	Mean	SD	Paired T-Test	Ave. C.A. by Gender				Ave. C.A. Living	
					Mean	SD	Z-Test	Range	Mean	SD
Male (25)	Right (25)	163.48°	3.417°	T=1.438,	[illegible]	[illegible]	Z=[illegible],	[illegible]	[illegible]	[illegible]
	Left (25)	163.92°	3.121°	P=0.163						
Female (25)	Right (25)	162.08°	2.943°	T=-1.622,	[illegible]	[illegible]	P=[illegible]	[illegible]		
	Left (25)	162.52°	3.016°	P=0.118						

Table 2: Clinical Measurement of Carrying Angle, Side and Sex Difference

Side (N)	Sex (N)	Mean	SD	Unpaired T-Test	Ave. C.A. by Side			
					Mean	SD	Z-Test	Range
Right (50)	Male (25)	163.48°	3.417°	T=1.552, P=0.127	162.78°	3.254°	Z=0.6925,	156.00-172.00
	Female (25)	162.08°	2.943°				P>0.05	
Left (50)	Male (25	163.92°	3.121°	T=1.611, P=0.113	163.22°	3.119°		157.00-171.00
	Female (25)	162.52°	3.016°					

In the living the mean carrying angle in males on right side was 163.48° ± 3.417° and on left side was 163.92° ± 3.121°, and the difference was statistically not significant between the sides of the male respondents where paired t value was 1.438, df 24 & sig. (2-tailed) 0.163 ($p>0.05$). The mean carrying angle in females on right side was 162.08° ± 2.943° and on left side was 162.52° ± 3.016° (Table: 4.1), and the side difference was also statistically not significant in the living female participants where paired t value was -1.622, df 24 & sig. (2-tailed) 0.118 ($p>0.05$).

In both sexes the mean carrying angle by

clinical method was 163.00° ± 3.095°. The sample data were distributed normally; most values were between 160° and 165°, with only a few >170°. The mean carrying angle was 163.70° ± 3.182° in males and was 162.30° ± 2.901° in females (Table:1). The difference between males and females carrying angle was statistically not significant, where t value was 1.626, df 48 & sig. (2-tailed) 0.111 (p>0.05). By the clinical method the carrying angle, irrespective of sex and side, was ranged from 156° to 172°, in male from 158° to 172°, and in female from 156° to 168°.

The mean carrying angle in the living on right side in both sexes was 162.78° ± 3.234°, in males was 163.48° ± 3.417° and in females was 162.08° ± 2.943°. The difference between carrying angles of two sexes on right side was not significant statistically, where t value was 1.552, df 48 & sig. (2-tailed) 0.127 (p>0.05). And on left side in both sexes the mean carrying angle was 163.22° ± 3.119°, in males was 163.92° ± 3.121° and in females was 162.52° ± 3.016° (Table: 4.2). The difference between carrying angles of two sexes on left side was also not significant statistically, where t value 1.613, df 48 & sig. (2-tailed) 0.113 (p>0.05).

In both sexes the mean carrying angle on right side was 162.78° ± 3.234° and on left side was 163.22° ± 3.119°, where z value was 0.6925 thus p>0.05. So side difference was not statistically significant in the living. The carrying angle was ranged from 156.00° to 172.00°, on the right side and 157.00° to 171.00°, on the left side by the clinical method (Table: 2). The majority of the carrying angle values of right and left side were laid between 160 to 165 degrees.

Discussion:

Several investigators have tried to provide information about the standard values of the carrying angle. They tried to distinguish it according to age, sex, sides of the body, anthropometric characteristics, and different measuring methods. Those investigations delivered considerably variable results most likely due to differences in the definition of the angle and the variations in the measuring methods [8]. Some researcher used supplementary angle whereas others used complementary angle as the carrying angle. In the present study complementary obtuse angle was used because of all famous anatomy books adopted this form of angle.

In the present study, the mean carrying angle was 163.00° ± 3.095°; 163.70° ± 3.182° in males and 162.30° ± 2.901° in the females; 162.78° ± 3.234° on right side and 163.22° ± 3.119° on left side. The difference between the carrying angle of matching groups was statistically insignificant (p>0.05). In the present study it was also found that there were no statistically significant difference between the mean carrying angle by sexes and sides (p>0.05).

The present study revealed that there was no statistically significant difference in carrying angle between male and female sexes. This finding was in a general agreement with that of other studies that considered the same concepts [2,5,8-11]. A contrasting finding showing statistically significant difference in carrying angle between males and females was observed by different other researchers [3,7,12-14]. The sex difference was probably due to methodology used and sample size. Atkinson & Elftman and Paraskevas et al. used handmade

wooden goniometer and Erdogan et al. used improvised universal plastic goniometer, but they placed the goniometer along the medial border of the arm and forearm where soft tissue affects the reading of carrying angle. Since the soft tissues, especially fat, are more developed in the female; thus, those investigators found more acute carrying angles in the female. If they would have placed the goniometer on the volar aspect of the arm and forearm according to the bony land marks, the differences in carrying angle between the sexes would not be evident.

The present study also revealed that there was no statistically significant side difference in carrying angle in both sexes together and separately. This finding was similar with some of other studies that considered the same assessment [2,8,11,13,15]. A dissimilar findings showing there were statistically significant differences in carrying angle between the sides, right and left [3,10,16]. The side variation was probably due to difference in methods and number of cases. Paraskevas et al. used handmade wooden goniometer and Tükenmez et al. used improvised universal plastic goniometer, but they placed the goniometer along the medial border of the arm and forearm where soft tissue affected the reading of carrying angle. Since the muscles are more developed in the right arm due to over-use hypertrophy; thus, those investigators found more acute carrying angles in right side. If they would have placed the goniometer on the volar aspect of the arm and forearm according to the bony land marks, the differences in carrying angle between the sides would not be obvious.

The numerical value of the carrying angle of this study was similar to the most of the study conducted in the Asian region but dissimilar to the most of the study conducted in the Europe and American region. Perhaps, this difference is due to different in height and races. According to Khare et al. elbow angulation was inversely related to the height of a person. As the average height of the people of the Asian region is less than the average height of the people of the Europe and American region, the obliquity of the forearm is more marked in the eastern than the western region. The carrying angle values also differ quantitatively in different races that were also reported by other investigators [8,15].

Conclusion:

The goal of this study was to determine the carrying angle in adult population in Bangladesh by clinical method. It aid to establish data on carrying angle, its sex and side difference in Bangladeshi population. The study demonstrated that there was no statistically significant difference of mean carrying angle between the sexes and sides. The findings of the study would be helpful for the orthopedic surgeons to manage pathologies around the elbows.

References:

1. Snell RS 2012, 'The upper limb', in: Snell RS (ed), Clinical anatomy by regions, 8th ed., Lippincott Williams & Wilkins Health, Philadelphia, p. 408.

2. Kumar B, Pai S, Ray B, Mishra S, Siddaraju KS, Pandey AK and Binu S 2010, 'Radiographic study of carrying angle and morphometry of skeletal elements of human elbow', Romanian Journal of Morphology and Embryology, vol. 51, no. 3 pp. 521-526.

3. Paraskevas G, Papadopoulos A, Papaziogas B, Spanidou S, Argiriadou H and Gigis J 2004, 'Study of the carrying angle of the human elbow joint in full

extension: a morphometric analysis', Surg Radiol Anat, vol. 26, no.1 pp. 19–23.
4. Standring S (ed.) 2008, Gray's Anatomy: The Anatomical Basis of Clinical Practice, 40th edn., Churchill Livingstone Elsevier, London, pp. 777-800 & 831-845.
5. Khare GN, Goel SC, Saraf SK, Singh G and Mohanty C 1999, 'New observations on carrying angle', Indian J Med Sci, vol. 53, no. 2, pp. 61–67.
6. Chen AL 2007, 'Carrying angle of the elbow-excessive-Overview', University of Maryland, Medical Center, http://www.umm.edu/ency/article/002316. htm.
7. Chang CW, Wang YC and Chu CH 2008, 'Increased carrying angle is a risk factor for nontraumatic ulnar neuropathy at the elbow', Clinical Orthopaedics and Related Research, vol. 466, pp. 2190–2195.
8. Zampagni ML, Casino D, Zaffagnini S, Visani AA and Marcacci M 2008a, 'Estimating the elbow carrying angle with an electrogoniometer: acquisition of data and reliability of measurements', Shoulder / Elbow Orthopedics, vol. 31, no. 4, pp. 370-380.
9. Steel FLD and Tomlinson JDW 1958, 'The carrying angle in man', J. Anatomy, vol. 92, pp. 315-317.
10. Tükenmez M, Demirel H, Perçin S and Tezeren G 2004, 'Measurement of the carrying angle of the elbow in 2,000 children at ages six and fourteen years', Acta Orthop Traumatol Turc, Vol. 38, pp. 274-276.
11. Zampagni ML, Casino D, Martelli S, Visani A and Marcacci M 2008b, 'A protocol for clinical evaluation of the carrying angle of the elbow by anatomic landmarks', Journal of Shoulder and Elbow Surgery, vol. 17, no. 1, pp. 106-112.
12. Atkinson WB & Elftman H 1945, 'The carrying angle of the human arm as a secondary sex character', Anat. Rec. vol. 91, pp. 49-52.
13. Erdogan AR, Diyarbakirli S, Aydinlioglu A, Keles P, Ezirmik N and Pamir I 1995, 'The examination of carrying angle by age and sex groups', Medical Journal of Ataturk University (MJAU), Turkey, vol. 27, pp. 126-128.
14. Potter HP 1895, 'The obliquity of the arm of the female in extension: The relationship of the forearm with the upper arm in flexion', J Anat Physiol, vol. 29, pp. 488-492.
15. Terra BB, Silva BCM, Carvalho HBF, Dobashi ET, Pinto JA and Ishida A 2011, 'Evolution of the carrying angle of the elbow: a clinical and radiographic study', Acta Ortop Bras, vol. 19, no 2, pp. 79-82.
16. Yilmaz E, Karakurt L, Belhan O, Bulut M, Serin E, and Avci M 2005, 'Variation of carrying angle with age, sex, and special reference to side', Journal of Orthopedics and Traumatology, Firat University, Turkey, vol. 28, no. 11, pp. 1360-1363.

EDITORIAL POLICY

Information to Authors
Journal of Satkhira Medical College

Journal of Satkhira Medical College (JSMC), the official organ of Teachers Association of Satkhira Medical College, is a peer reviewed journal. It is published twice in a year in the month of January and July. Articles are received throughout the year. The journal will published original papers, review articles, case reports and short communication related to Medical Science.

Submission of manuscripts
Papers are accepted for publication with an understanding that they are submitted solely to the Journal of Shatkhira Medical College (JSMC) and are subject to peer review and editorial revision. Statement and opinions expressed in the papers, communications and letters here in are those of author(s) and not necessarily those of the editor(s) or published.

Preparation of Manuscripts
Three copies of the article and the manuscripts on a CD should be submitted to the editor. Manuscripts should be typed in English on one side of white good quality paper with margins of at least 25 mm and using double space through out. Each component of the manuscript should begin on a new page in the sequence of:

1) Title page: The title page should include the title of the article, name of the department(s) and institution(s) to which the work should be attributed, name and address of the author with post code responsible for correspondence and source of support for work in the form of grants, equipment, drugs etc.

2) Abstract: A structured abstract must be provided which should indicate in brief the objective and purpose of the study, a briefly worded description of the study with summary of the results and a statement of the study's conclusion.

3) Introduction.
4) Aims and Objective.
5) Materials and methods.
6) Results.
7) Discussion.
8) Conclusion.
9) Acknowledgment

10) Reference: It should be numbered in the sequences in which they appear in the text and then listed in this order in the reference section.

11) Table and legends for illustrations: Pages should be numbered consecutively in the middle bottom, beginning with the title page.

Measurements should be in SI unit, but blood pressure should be expressed in mm of Hg. Statistical methods should be defined in the method section of the paper. Standard abbreviations should be used. The full terms for which an abbreviation stands should precede its first use in the text.

Original articles are usually upto 1500 to 2000 words and review articles 2000 words long with minimum number of tables or illustrations. Reports on rare or uncommon cases are welcome. Most editorials are solicited, but unsolicited editorials of usually upto 1000 words are considered delightedly.

Manuscript submission in computer disc
Satkhira Medical College Journal encourages manuscript submission on CD, along with the standard three hard copies. Each disc must be labeled with the following: Date, Name of principle author, word processing software and version number, format type, file names.

Manuscript submission in E-mail manuscript submission on e-mail instead of CD is available. The e-mail address is:

Three copies of manuscript submission on paper also necessary.

References

References should be numbered in the order in which they appear in the text. References should be identified in the text, tables, and legends by Arabic numerals (in parenthesis). At the end of the article the full list of references should give the names of authors, unless there are more than six, when only the first three should be given, followed by et al. The authors' name are followed by the title of the article, the title of the journal abbreviated according to the style of the index medicus, year of publication, the volume number, and the first and last page number of the article. Reference to books should give the names of the any editors, place of publication, publisher, year and relevant page(s). Unpublished observations or personal communications should be referred to as such in the text and should not be include in the final list of reference. Paper which have been submitted and accepted for publication should be included in the reference list, the phrase "in press" (in parenthesis) replacing volume and page number.

The references must be verified by the author(s) against the original documents. Example of correct forms of references are given below:

1) Standard Journal articles: (List all authors when six or less; when more than six, list only three and add et al.).

Thakur CP, Kumar M, Kumar P, Mishra BN,

Panday AK. Rationalization of regimens of treatment of Kala-azar with sodium stibogluconate in India: a randomized study. Br Med J 1988; 196: 1556-60.

2) Personal author(s) in a book:

Eisen HN. Immunology: an introduction to molecular and cellular principles of the immune response. 5th ed. New York. Harper and Row, 1974; 406.

3) Editor, complier as number in a book: Robbins SL, Cortan RS, Kumar V, eds. Pathological Basis of Disease. 3rd ed. Philadelphia: WB Saunders, 1984: 236 - 48.

4) Chapter in a book:

Weinstein L, Swartz MN, Pathologic properties of invading microorganisms. In: Sodeman Jr, Sodeman WA, ed. Pathologic physiology: mecganism of disease. Philadelphia: WB Saunders, 1974: 457 - 72.

5) Dissertation or Thesis:

Uddin MM, Study of Hypoglycemic Effect of Fenugreek (Methy) in Type 2 Diabetic Patients (Thesis). Bangladesh: Rajshahi Medical College under Rajshahi University, 2005.

Tables

Each table should be typed on separate sheet. Table should have brief title for each, should be numbered consecutively using roman numerals (I, II, V, X) and be cited in the text in consecutive order. Internal horizontal and vertical rules should not be used.

Illustrations

All drawings should be made with black Indian ink on white paper. Letters, numbers and symbols should be large and thick enough to be visible if and when the figure is reduced for publication. Photographs and photomicrographs should be supplied as glossy black and white prints un-mounted. Figure number, an indication of the top edge and name of first author should be marked lightly on the back of each figure with soft pencil. Legend for each illustration should be referred to as figures numbered consecutively in the text in Arabic numerals (1, 2, 6, 9).