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## Original Articles



## Occasional notes



## Review Articles



## Editorial



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# *Osmani Medical Teachers Association Journal*


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ORIGINAL ARTICLE

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Volume 11 Number 2

# Evaluation of Skeletal Metastasis by Bone Scientigraphy in Patients with Known or Suspected Malignancy.

Kamrun Nahar

## Abstract

The aim of the study was to evaluate the skeletal metastasis among the patients who were referred to do whole body bone scan with known or suspected malignancy. A total of 413 patients were included in this retrospective study. All of them were referred to Nuclear Medicine Center (NMC), Sylhet with known or suspected malignancy in the period from May 2009 to June 2011. Among them 266 patients (64.41%) were female & 147 patients (35.59%) were male. The age ranges from 15 yrs to 90 yrs with mean age 48.5 yrs ± 8.2 yrs. Whole body bone scan was done with dual headed SPECT in both anterior and posterior views in two hours post injection time using $^{99m}$Tc-MDP. Skeletal metastasis were detected in 151 patients (36.56%) & 262 patients (63.44%) showed no evidence of metastasis. Among the positive findings 32 patients (21.19%) showed single hot spot, patients (79.47%) showed multiple hot spots patients (9.27%) showed superscan & four patients (2.64 %) showed photopenic lesions. Positive bone scan for prostatic malignancy was noted in 30 patients (19.87%), Carcinoma breast was 47 patients (31.137%), Carcinoma lung was 21 patients (13.90%), Carcinoma GIT was 11 patients (7.28%), Carcinoma Thyroid was four patients (2.65%), multiple myeloma was three patients (1.99%), others (carcinoma cervix, Ewings' sarcoma) was 14 patients (9.3%) & unknown primary was 21 patients (13.90%). Radionuclide bone scientigraphy is very sensitive diagnostic method to detect skeletal metastasis & thereby helps a lot to manage the patients accordingly.

[OMTAJ 2012; 11(2)]

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## Introduction

A bone scan is a test to find damage to the bones, find cancer that has spread to the bones, and watch problems such as infection and trauma to the bones. A bone scan can often find a problem days to months earlier than a regular X-ray test. Scintigraphic findings of bone metastases include multiple asymmetric, randomly distributed areas of increased uptake, development of new lesions, increased intensity or size of lesion over time, a lesion of unusual shape, a photopenic area, and the appearance of a superscan[1]. $^{99m}$ Tc-MDP used in bone scan is absorbed into bony surfaces, and its uptake depends on both local blood flow and osteoblastic activity. Nearly all metastases are accompanied by osteoblastic reaction and hence are easily detected on bone scans. However, predominantly lytic lesions (eg, multiple myeloma) demonstrate poor or absent uptake on bone scans[2]

## Materials and Methods

The study included 413 patients referred by the physicians of greater Sylhet division for whole body bone scan to exclude skeletal metastasis with known or suspected malignancy. Among them 266 patients (64.41 %) were female & 147 patients (35.59%) were male. The age ranges from 15 yrs to 90 yrs with mean age 48.5 yrs ± 8.2 yrs. Scan was done with dual headed SPECT in both anterior and posterior views in 2 hours post injection time using $^{99m}$ Tc-MDP . Image quality is influenced by the state of

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[OMTAJ 2012; 11(2)]

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## Materials and Methods

The study included 413 patients referred by the physicians of greater Sylhet division for whole body bone scan to exclude skeletal metastasis with known or suspected malignancy. Among them 266 patients (64.41 %) were female & 147 patients (35.59%) were male. The age ranges from 15 yrs to 90 yrs with mean age 48.5 yrs ± 8.2 yrs. Scan was done with dual headed SPECT in both anterior and posterior views in 2 hours post injection time using $^{99m}$ Tc-MDP . Image quality is influenced by the state of

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patient's hydration & renal function. The patients were well hydrated in order to enhance renal excretion & decrease urinary bladder exposure.

## Result

A total 413 patients were included in this retrospective study of whom
266 patients (64.41 %) were female & 147 patients (35.59%) were male. (Table I) The age ranges from 15 yrs to 90 yrs with mean age 48.5 yrs ± 8.2 yrs. (Table II). 151 patients (36.56%) showed skeletal metastasis & 262 patients (63.44%) showed no evidence of metastasis. (Table III). Among the positive findings 32 patients (21.19%) showed single hot spot, 102 patients (79.47%) showed multiple hot spots, 14 patients (9.27%) showed superscan & four patients (2.64 %) showed photopenic lesions (Table IV). Positive bone scan for prostatic malignancy was 30 patients (19.87%), Ca-breast was 47 patients (31.137%), Ca-lung was 21 patients (13.90%), Ca-GIT was 11 patients (7.28%), Ca Thyroid was 04 patients (2.65%), multiple myeloma was 03 patients (1.99%), others (ca-cervix. Ewings' sarcoma) was 14 patients (9.3%) & unknown primary was 21 patients (13.90% ) (Table V).

**Table 1 : Sex distribution of the patients ( Total 413 )**

| Sex | Number & percentage |
|---|---|
| Female | 266 (64.41 %) |
| Male | 147 (35.59 %) |

**Table II : Age distribution of the patients ( Total 413 ):**

| Age range | Total | Negative findings | Positive findings |
|---|---|---|---|
| 15--30 yrs | 52 | 47 (11.38%) | 05 (1.2%) |
| 31—50 yrs | 171 | 97 (23.48%) | 74 (17.91%) |
| 51— 70yrs | 134 | 79 (19.13%) | 55 (13.31%) |
| 71—90 yrs | 56 | 39 (9.44%) | 17 (4.11%) |
| **Total** | **413** | **262** | **151** |

**Table III : Skeletal metastatic findings of bone scan ( Total 413)**

| Findings | Number & percentage |
|---|---|
| No sign of metastasis | 262 (63.44 %) |
| Positive bone scan for malignancy | 151 (36.56 %) |

**Table IV : Pattern of Skeletal Metastasis ( Total 151 ):**

| Types | Number of patients & percentage |
|---|---|
| Single hot spot | 32 (21.19%) |
| Multiple hot spot | 102 (79.47%) |
| Superscan | 14 (9.27%) |
| Photopenic lesions | 04 (2.64%) |

**Table V : Positive Findings of Bone Scan ( Total 151):**

| Indications | Patients | Percentage |
|---|---|---|
| Ca Prostate | 30 | 19.87% |
| Ca Breast | 47 | 31.137% |
| Ca Lung | 21 | 13.90% |
| Ca GIT | 11 | 7.28% |
| Ca Thyroid | 04 | 2.65% |
| Multiple Myeloma | 03 | 1.99% |
| Unknown Primary | 21 | 13.90% |
| Others ( Ca cervix, Ewings' Sarcoma etc) | 14 | 9.3% |

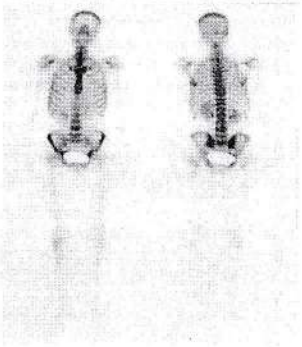

Fig.1

Fig.2

**Fig. 1 : Appearance of normal bone scan**
**Fig. 2 : Bone scan showing multiple metastatic lesions.**

## Discussion

In patients with proven non-skeletal tumors, imaging is useful for screening the skeleton to assess metastatic disease and, if it is present, to determine its extent.[3,4,5]

After the lung and the liver, the skeleton is the most common site of spread of cancers that begin in organs. Metastases to the lung and liver are often not detected until late in the course of disease because

patients experience no symptoms. In contrast, bone metastases are generally painful when they occur.

Bone metastases are often multiple at the time of diagnosis. Common sites for metastases are the vertebrae, pelvis, proximal parts of the femur, ribs, proximal part of the humerus, and skull. More than 90% of metastases are found in this distribution.

Findings of a solitary scientigraphy abnormality or just a few lesions may present special problems in the interpretation of findings. Other patterns include diffuse involvement (superscan), photopenic lesions (cold lesions), normal scintiscans, flare phenomena and soft-tissue lesions [6].

Bone involvement in metastases occurs by means of 3 main mechanisms: (i) direct extension, (ii) retrograde venous flow, and (iii) seeding with tumor emboli via the blood circulation. When interpreting bone scan images, areas of increased and decreased tracer uptake (hot and cold spots) are of clinical significance.

Lesions on the scan are usually presumed to be metastases if the patient has a known primary cancer. Metastases should be suspected in patients who have multiple lesions on bone scan. Although metastases are suspected in patients with known cancer and a single bone lesion, the lesion may not be a metastasis; thus, a needle biopsy of the lesion is often done to confirm the diagnosis of a metastasis.

A review from Hamaoka et al.[7] has highlighted that imaging modalities visualize different aspects of osseous tissues (cortex or marrow) in terms of density, water content, vascularity, or metabolism

In the present study skeletal metastasis from breast & prostate carcinoma accounts for 31.137% & 19.87% accordingly. These findings were consistent with the earlier observation by Rogers LF who showed that carcinomas of the breast and prostate account for most of the bone metastases, with cancers of the kidney, thyroid, and lung following in descending frequency.[8]

Bone scans are also limited by a lack of specificity, with most false-positive results due to trauma, whether recalled by the patient or not. The probability that an abnormal scan represents metastatic tumor is directly related to the number of abnormal foci.

As a result, the diagnosis of metastatic bone disease usually requires radiographic confirmation, especially if the number of lesions is small (fewer than four) and/or limited to the ribs.

Carcinomas of unknown primary site (CUPS) are the seventh most common malignancy. It represents a heterogeneous group of metastatic tumours for which medical history, physical examination and standardized diagnostic work-up fail to identify the site of the cancer's origin at the time of diagnosis. It accounts for 3%–5% of all malignancies, so is relatively common.

More than 1.2 million new cancer cases are diagnosed each year. Approximately 50% of these tumors can spread (metastasize) to the skeleton. Accurate staging of malignancies is essential to guide the clinician in selecting the most appropriate therapy for that patient. The presence of metastatic disease from solid tumors in bone is considered as distant metastases and classifies the tumor as advanced stage IV [9].

Boxer et al.[10] reported that solitary lesions constituted 21% of metastatic bone lesions from breast cancer initial diagnosis and also stated that their figure was higher than previously reported. Our data shows that solitary lesion accounts for 21.19% of the all metastatic lesions irrespective of the primary lesion .

Since metastatic breast cancer confined to the skeletal system is a common complication that can be diagnosed relatively easily, is highly responsive to treatment and whose treatment is frequently associated with extended patient survival [11,12] identification of these patients is very important to clinicians.

In a retrospective study of 539 patients, Constable found that 17% of patients had superscan at presentation or follow-up [13]. In our study 9.27% patients were diagnosed as having superscan. This may be result from earliest diagnosis of metastasis by improved technologies & increased awareness of the patients .When the bone scan results in the headless appearance, diffuse metastatic disease should be immediately suspected . Renal activity is usually faint in such cases, since bone accretes the radionuclide more avidly than the kidneys, leaving less available for excretion [14] In a comparative study, Daldrup-Link et al found sensitivities of 71% for $^{99m}$Tc bone scientiscanning in the diagnosis of skeletal metastasis[15]

In conclusion, radionuclide bone scanning is widely regarded as the most cost-effective and available whole-body screening test for the assessment of bone metastases. It is extremely sensitive for detecting skeletal abnormalities, and numerous studies have confirmed that it is considerably more sensitive than conventional radiography for this purpose.

## References


1. Habibian MR, Delbeke D, Martin WH, Sandler MP. Nuclear Medicine Imaging A Teaching File 1999; 1:437-38.
2. Cook GJ, Fogelman I. The role of positron emission tomography in the management of bone metastases. Br J Cancer 2000; 88 : 2927-33.
3. Downey SE, Wilson M, Boggis C. Magnetic resonance imaging of bone metastases: a diagnostic and screening technique. Br J Surg 1997; 84:1093-94.
4. Peh WC. Screening for bone metastases. Am J Ortho 2000;29 :405.
5. Traill ZC, Talbot D, Golding S, Gleeson FV. Magnetic resonance imaging versus radionuclide scintigraphy in screening for bone metastases. Clin Radiol 1999; 54: 448-51.
6. Krishnamurthy GT, Tubis M, Hiss J, Blahd WH. Distribution pattern of metastatic bone disease. A need for total body skeletal image. *JAMA*. 1977;237 :2504-6.
7. Hamaoka T, Madewell JE, Podoloff DA, Hortobagyi GN, Ueno NT. Bone imaging in metastatic breast cancer BMJ 2004;22:2942-53.
8. Rogers LF. Secondary malignancies of bone , Essentials of Radiologic Imaging. 6th ed. Philadelphia, Pa: JB Lippincott Co; 1993:164-65.
9. Beahrs OH, Henson DE, Hutter RV. Handbook for Staging of Cancer. 1st ed. Philadelphia, Pa: JB Lippincott Co; 1993:3-14.
10. Boxer DI, Todd CE, Coleman R, Fogelman I. Bone secondaries in breast cancer: the solitary metastasis. J Nucl Med 1989; 30: 1318–20.
11. Sherry MM, Greco FA, Johnson DH, Hainsworth JD. Metastatic breast cancer confined to skeletal system. An indolent disease. Am J Med1986; 81: 381–86.
12. Coleman RE, Smith P, Rubens RD. Clinical course and prognostic factors following bone recurrence from breast cancer.Br J Cancer 1998; 77: 336–40.
13. Constable A R, Cranage RW. Recognition of the superscan in prostatic bone scientigraphy. Br J Radiol 1981; 54 : 122.
14. Manier MS, Van Nostrand D, Super bone Scan. Semin Nucl Med 1984; 14 : 46.
15. Daldrup-Link HE, Franzius C, Link TM. Whole-body MR imaging for detection of bone metastases in children and young adults.AJR Am J Roentgenol 2001;177:229-36.

ORIGINAL ARTICLE

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# Maternal Early Puerperal Complications Following Caesarean Section

Nasrin Akther[1], Nadira Begum[2], Mahbuba Alam Khan[3], Abdus Sabur[4] Dipu Das[5], Kamruzzaman[6]

## Abstract

The rising trend in caesarean section rates is not only limited to developed countries but also to developing countries. The frequency is gradually increasing because of extended indications. Still the major abdominal surgery has risks including rare cases of death, infection, excessive bleeding and reaction to medicine. So it is necessary to correlate and to bring the indications in a regular profile which can play a role in reducing unnecessary caesarean section.

The aim of the present study was to find out the maternal early puerperal complications following caesarean section, the risk factors and the ratio between complications of elective and emergency caesarean section. This was an observational cross sectional study carried out from October, 2011 to March, 2012 (2011 to 2012) among the admited 100 pregnant women who were delivered by caesarean section during the last 7 days of prefixed visit to Upazilla Health Complex. 76 patients (76.0%) of them underwent emergency caesarean section and 24 of the patients underwent elective caesarean section, which were considered as group I and group II respectively.

The incidence of caesarean section was 30.04% .The mean age was found 26.87±4.27 years in Group I and 26.58±4.18 years in Group II. 37 patients (64.5%) in group I and 18 patients (83.3%) in group II were primary level passed. Wound infection were more frequent in both groups but the difference were not statistically significant ($P>0.05$) between two groups. Per-operative complication was found in 7 patients (9.2%) in Group I and 3 patients (12.0%) in Group II. Per operative and postoperative complication was high in emergency operation. Post-operative complication was found in 12 (15.8%) patients in Group I and 1 (4.2%) patients in Group II.

Primary caesarian section was significantly ($P<0.05$) higher in emergency caesarian section. Regarding the post operative complications it was observed that wound infection was more frequent in both groups. Caesarian section is a major abdominal operation and as such predisposed to some injuries, which usually do not occur in vaginal deliveries. So caesarian section should be discouraged as it does major operation with documented risks.[1] Even it carries death of mother. Therefore after assessment of risks and benefit, a judicious decision has to be taken for selection of the cases.

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## Introduction

The term Caesarean section denotes the delivery of the fetus, placenta & membranes through an incision in the abdominal & uterine wall after the age of viability. Caesarean section is the most frequently performed major operation in obstetrics. The aim of an obstetrician is to have a healthy mother and a healthy baby. To achieve this goal, caesarean section plays an important role as some of deliveries are not possible through the vaginal route without jeopardizing the life or health of the mother or baby.

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Globally in the past 20 years, the rate of caesarean section has steadily increased from about 5% to 20%[2]. The incidence of caesarean section increased from 11% to 15% during the period 1980 – 1987 in SSMC & Mitford Hospital (Begum and Bhuyan 1992). A study was conducted by Hasan A. in 1981 reported caesarean section rate 9.8% in 1965 to 16.8% in 1979.[3] According to the world health organization (WHO), rates of caesarean deliveries have been rising in many countries. While the WHO recomends rates below 15%, caesarean section account for about 30% of deliveries in US. It is estimated that about one mother in three has a caesarean section (The American College of obstetricians and Gynecologists 2007 and 2009).

The rising trend in Caesarean section rates in not only limited to developed countries but also to developing countries. Still the major abdominal surgery has risks, including rare cases of death, infection, excessive bleeding, reactions to medicines and injury to the baby (The American College of obstetricians and Gynecologists 2007 and 2009). In one series the risk of death of mother from Caesarean section was found to be 26 times greater than with vaginal delivery[2].

Caesarean section should be discouraged as it does represent major operation with documented risks[1]. Even it carries death of the mother. Therefore after assessment of risk and benefit, a judicious decision has to be taken for selection of the cases.

## Materials and Methods

This is an observational cross sectional study was carried out in the department of Obstetrics and Gynecology, Upazilla Health Complex Beanibazar, Sylhet for a period of six month starting from October, 2011 to March, 2012. A total of 100 pregnant women was included in this study, who were delivered their child by caesarean section. All the term pregnant women underwent caesarean section due to elective and emergency indications was included in the study. Caesarean sections done due to failed forceps and failed ventouse, rupture uterus and all medical disorders assocaited with pregnancy were excluded in this study on the day of prefixed visit. Sampling method was non probability convenience sampling . Data were collected in a pre-designed form. All data were analyzed by using computer based SPSS (version 16.0) programme. Statistical analysis was performed, categorical variables were presented in the form of frequency and percentage and analysis of association was made using chi-square test ($\chi^2$) of significance. Quantitative data were presented in the form of mean and standard deviation. Comparison of means made by using student's t-test, a p-value less $<0.05$ were considered statistically significant.

## Results

Total number of pregnant patients admitted during this period was 980. Among these cases, number of cases delivered by LUCS was 294. So the rate of caesarean section in upazilla health complex, Beanibazar during October, 11 to March,12 was 30.04%. Regarding the types of caesarean section it was observed that more than three fourth (76.0%) of the patients underwent emergency caesarean section and 24 (24.0%) patients underwent elective caesarean section.

Majority of the patients was found in the age group of 26-30 years and $\leq 25$ years in Group I and Group II respectively, which was 34(44.7%) in Group I and 12(50.0%) patients in Group II. The mean age was found 26.87±4.27 years in Group I and 26.58±4.18 years in Group II. Majority of the education status was found in primary level in two groups, which was 37(48.7%) in Group I and 18(75.0%) in Group II, followed by secondary level was found 22(28.9%) and 3(12.5%) in Group I and Group II respectively. Regular antenatal checkup received 27(35.5%) in Group I and 4(16.7%) in Group II. Almost two third 50(65.8%) and 21(87.5%) patients completed immunization in Group I and Group II respectively.

**Table I: Proportion of per-operative complications (n = 100).**

| Per-operative complications | Group I (n=76) | | Group II (n=24) | | *P* value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Complication | 7 | 9.2 | 3 | 12.5 | $0.446^{ns}$ |
| No complication | 69 | 90.8 | 21 | 87.5 | |

The per-operative complication of the study patients, it was found that, 7(9.2%) in Group I and 3(12.0%) in Group II. The difference was found not statistically

significant (P > 0.05) between two groups in chi square test. . Per-operative bleeding was found in 3 cases, Hypotension in 3 cases and Haematoma over broad ligament in 1 case in group I. In group II Hypotension was in 1 case, difficulty in operation due to adhesion of bladder in 1 case and Cardiac arrest in 1 case. It was found that, 12(15.8%) in Group I and 1(4.2%) in Group II had the post-operative complication. Wound infection more frequent in both groups but the difference were not statistically significant ($P > 0.05$) between two groups in chi square test.

**Table II: Distribution of per-operative complications associated with nature of operation.**

| Per-operative complications | Group I (n=76) | Group II (n=24) |
|---|---|---|
| Excessive per-operative bleeding (3) | 3 | 0 |
| Hypotension (4) | 3 | 1 |
| Difficulty in operation due to adhesion of bladder (1) | 0 | 1 |
| Cardiac arrest (1) | 0 | 1 |
| Haematoma over broad ligament (1) | 1 | 0 |

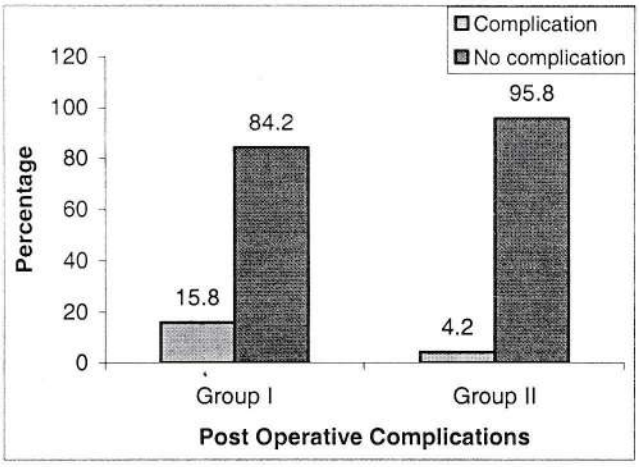


**Fig 1: Bar diagram shows post operative complications of the study patients.**

**Table Ill: Distribution of the study patients according to Postoperative complication (n=100).**

| Postoperative complications | Group I (n=76) | | Group II (n=24) | | *P* value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Wound infection | 4 | 5.3 | 1 | 4.2 | 0.654$^{ns}$ |
| PPH | 4 | 5.3 | 0 | 0.0 | 0.251$^{ns}$ |
| UTI | 1 | 1.3 | 0 | 0.0 | 0.572$^{ns}$ |
| Sub involution of uterus | 1 | 1.3 | 0 | 0.0 | 0.572$^{ns}$ |
| Abdominal distension | 1 | 1.3 | 0 | 0.0 | 0.572$^{ns}$ |
| Peurperal sepsis | 1 | 1.3 | 0 | 0.0 | 0.572$^{ns}$ |
| Breast congestion | 1 | 1.3 | 0 | 0.0 | 0.572$^{ns}$ |
| Lactational failure | 1 | 1.3 | 1 | 4.2 | 0.384$^{ns}$ |
| Spinal headache | 1 | 1.3 | 1 | 4.2 | 0.384$^{ns}$ |
| Peurperal p rexia | 1 | 1.3 | 0 | 0.0 | 0.572$^{ns}$ |
| RTI | 1 | 1.3 | 0 | 0.0 | 0.572$^{ns}$ |

ns= not significant
*P* value reached from chi square test

## Discussion

In modern obstetrics, caesarean section is a major surgical procedure for delivery and there is low rate of maternal morbidity and mortality due to improved surgical technique and modern anaesthetic skill. In this study, in Upazilla Health Complex incidence of C/S is about 30.04%, majority of the patients belonged to 3rd decade, received regular antenatal checkup more than one third (35.5%) in emergency caesarean section and 16.7% in elective caesarean section.

Universally, both emergency and elective Caesarean delivery rate continues to increase. However, elective Caesarean section (CS) is associated with less risk of adverse outcome compared to emergency procedure. Das et al. (2010) determine the indications and outcome of elective CS at their facilities (Bangabandhu Sheikh Mujib Medical University) in an attempt to reduce maternal and foetal morbidity and mortality associated with emergency CS. Major post CS complication was haemorrhage (24.6%), and other complications ranged from 0.5 to 3.7%.[4]

Regarding the types of caesarean section it was observed in this present study that 76 (76.0%) of the patients underwent emergency caesarean section and 24 (24.0%) of the patients underwent elective caesarean section, which were considered as group I and group II respectively. The decision to do a caesarean section would be taken only when a safe vaginal delivery is no longer possible. Elective caesarean performed indiscriminately or as an easy way out for an obstetric or non obstetric indication not only adds to the rising caesarean section rates but also contributes to unnecessary morbidity besides being a hazard to the future of the women's reproductive capability.

In this current study it was observed that the mean(±SD) age was 26.87±4.27 years in Group I and 26.58±4.18 years in Group II and Majority of the patients was found in the age group of 26-30 years and ≤25 years in Group I and Group II respectively, which was 34(44.7%) in Group I and 12(50.0%) patients in Group II. Elvedi-Gasparovic et al. (2006) showed the mean age was 29.21±6.15 years and 31.89±5.06 years in group I and group II respectively.[5] Similarly MCMahon (1996) and Lydon-Rochelle (2001) showed 25 -29 years predominant age group in their study, where the authors obtained 32.4% and 41.7% respectively.[6] Naidoo and Moodley (2009) have showed the mean age was 31 years with range from 20–45 years in elective CS, 30 years with range from 19–43 years in emergency CS and 28 years with range from 24–36 years in urgent CS, which is comparable with the current study.[7]

In this series it was observed that 9.2% and 12.0% emergency caesarean and elective operation respectively developed per-operative complication. In this study it was observed that excessive per-operative bleeding was found in 3 cases, Hypotension in 3 cases and Haematoma over broad ligament in 1 case in group I. In group II Hypotension was in 1 case, difficulty in opening the abdomen due to adhesion in 1 case and Cardiac arrest in 1 case.

Regarding the postoperative complications it was observed that wound infection more frequent in both groups but the difference were not statistically significant (P>0.05) between two groups. Other complications such as PPH, UTI, breast congestion, spinal headache, sub involution of uterus, RTI and peurperal sepsis. Caesarean section is a major abdominal operation and as such predisposed to some injuries, which usually do not occur in vaginal deliveries. Almost similar postoperative complications after the caesarean section obtained by Curran (2005), Figueroa, Garry and Mackenzie (2003). [8,9]

In post-operative complications of the study patients, it was found that, 15.8% in emergency caesarean section and 4.2% in elective operation developed post-operative complications, which was higher in emergency caesarean section but not significant (p>0.05).

In conclusion, in the present series it was observed that 9.2% emergencies and 12.0% elective caesarean section developed per operative complication. Regarding the postoperative complications although wound infection is more frequent in both groups, there were some other life threatening complications such as PPH and puerperal sepsis.

In the last few decades the caesarean section rate are increasing and caesarean birth now accounts for more than 40% birth in some obstetric unit. Now both the professional and public are concerned as an C/S is alarmingly high. Now it is time to take measures to lower the rate providing the option for vaginal child birth as the safest option for mothers and babies.

.As this is a small study conducted over a period of only 6 months it may not reflect the real picture of the whole country. A large scale nation-wide study needs to be conducted to reach to a definitive conclusion.

## References

1. Barau G, Robillard, PY, Hulsey T.C, Dedecker F, Laffite A, Gerardin P, Kauffmanna E. Linear association between maternal pre-pregnancy body mass index and risk of caesarean section in

term deliveries. British J Obs Gynaecol 2006; 113: 1173-7.
2. Begum R, Bhuyan AB. An eight years review of changing incidence and indication in a teaching institute in Bangladesh. Bangladesh Med J 1992; 21: 27-30.
3. Amrika H, Evan TN, Zare WB. Caesarean section: a 15 years review of changes in incidence of induction and risks. Am J obstetric Gynecol 1981; 104: 81-90.
4. Das TR, Halim T, Begum SR.. Maternal and Fetal Outcome in Elective Caesarean Section in Tertiary Hospital of Dhaka. Bangladesh J Med Science 2010; 16: 9-122.
5. Elve|i-Gaparovi V, Klepac-Pulani T, and Peter B.. Maternal and Fetal Outcome in Elective versus Emergency Caesarean Section in a Developing Country. Coll Antropol 2006; 30: 113–8.
6. McMahon MJ, Luther E.R, Bowes WA and Olshan AF. Comparison of a Trial of Labor With an Elective Second Cesarean Section. N Engl J Med 1996; 335: 689-95.
7. Naidoo RP and Moodley J. Rising rates of Caesarean sections: an audit of Caesarean sections in a specialist private practice. SA Fam Pract 2009; 51: 254-8.
8. Curra NCA. Anaesthesia 2005; 20:185.
9. Figueroa R, Garry D, Mackenzie AP, Matern J. Fetal Neonatal Med 2003; 14:130.

ORIGINAL ARTICLE

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# Seroprevalence of Varicella Zoster Virus IgG Antibody in Pregnant Mothers, Newborns and Children of Six Months Age

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## Abstract

This was a cross sectional and observational study, conducted in the Department of Microbiology, Sylhet MAG Osmani Medical College, Sylhet in collaboration with Department of Obstetrics and Gynaecology; and Paediatrics in- patients & out-patient Department of this hospital during the period from July 2010 to June 2011 with a view to explore the Varicella-Zoster virus (VZV) immune status in pregnant mother and neonates up to six months post birth. For this purpose, 60 pregnant women, 60 new born babies and 60 infants aged six months were selected. After selection 5ml of venous blood from pregnant mothers, 3ml of cord blood from newborn babies and 5 ml venous blood from infant aged six months. Immunoglobulin G antibodies to VZV in the sera were measured with a commercially available enzyme-linked immunosorbent assay (ELISA) test (VZV IgG; Human, Germany).

The mean age of the pregnant woman was 28.8 (SD ± 4.7) years. The sex of new born babies and children aged six months was identical [29 (48.3%) male vs 31 (51.7%) male; p=0.715]. There were 49 (81.7%) pregnant mothers, 47 (78.3%) new born babies and 6 (10.0%) infants aged six months were seropositive to VZV IgG. The seropositivity of pregnant mothers and new born babies were almost similar (p=0.648); but the seropositivity to VZV in infant aged six months were significantly lower than that of pregnant mothers and new born baby (p<0.001 each).

In conclusion, a significant proportion of the Bangladeshi pregnant mother is susceptible to varicella and infant aged six months is highly susceptible to varicella.

[OMTAJ 2012; 11(2)]

## Introduction

Varicella is a very contagious and vaccine preventable disease, occurring mostly during childhood, as a consequence of primary infection of varicella zoster virus (VZV). Although it usually presents a benign course, it may cause complications, especially in high risk individuals. Higher morbidity and mortality occurs among adults. The risk of complications may be increased in pregnant women and neonates.[1,2]

When mothers have experienced varicella or received VZV vaccination, infants are considered protected during the first months of life by passive transfer of maternal anti-VZV antibodies.[3] The antibody titer in the newborn has been shown to be proportional to the level in the mother.[4] However, passive immunity declines rapidly, and the exact duration and extent of protection remain uncertain. In other countries, some studies have shown that maternal antibodies were no longer detectable at 6 months,[5] or even as early as 4 months.[6]

In 1995, the United States of America introduced the VZV vaccine to their National Immunization Program which was followed by several other countries in the western world. The epidemiology of VZV infection in these countries had changed drastically with the introduction of the vaccine. The incidence of varicella fell by 90%, mortality from

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varicella declined by 66%, and rates of hospitalization for varicella decreased by 80% after introduction and routine use of the vaccine. In most of the countries in the South Asian region, the VZV vaccine is not included in the National Immunization Programs at present. At present, the immunity to the disease is acquired by contracting the natural infection in a large proportion of the population.[7-9]

Serological tests for VZV-IgG antibody are the mainstay of detecting susceptible persons,[10] but seropositivity of VZV-IgG antibody may vary from one country to another.[11-14]

To date published data in Bangladesh on seroprevalence rate of VZV antibody in pregnant women, new born babies and children at six months is not available. So this study was designed to explore the VZV immune status in pregnant mother and neonates up to six months post birth.

## Material and Methods

This cross sectional and observational study was conducted in the Department of Microbiology, Sylhet MAG Osmani Medical College, Sylhet in collaboration with Department of Obstetrics and Gynaecology; and Department of Paediatrics of this hospital during the period from July 2010 to June 2011 in objective to explore the Varicella-Zoster virus (VZV) immune status in pregnant mothers, neoates and children of six months age. Pregnant women of gestational age at least 37 weeks; newborn babies of same mother born and at least 2500gm birth weight; Infants aged six months were included in this study. Pregnant women born in abroad, previous immunization against Varicella-Zoster virus (VZV), transfusion of blood products during 6 months preceding serum collection, suspected varicella infection or presence of exanthem of unknown etiology at time of serum collection were excluded from the study.

A pre-designed study protocol was approved by the institutional ethical committee of Sylhet M.A.G Osmani Medical College, Sylhet before commencement of the study and informed written consent was taken from each of the participant before taking any interview.

After selection 5ml of venous blood from pregnant mothers, 3ml of cord blood from newborn babies and 5 ml venous blood from infant aged six months was collected. After collection,blood sample was processed immediately at room temperature by centrifugation at 2000 rpm for 10 min and were taken in aphendrop tube with proper labeling. Serum was separated and was stored at -20$^{C}$ degree until further analysis. Immunoglobulin G antibodies to VZV in sera were measured with a commercially available enzyme-linked immunosorbent assay (ELISA) test (VZV IgG; Human, Germany) in the Department of Microbiology, Sylhet MAG Osmani Medical College, Sylhet.

Data were analyzed with the help of SPSS (Statistical Package for Social Sciences) Version 16.0. Quantitative data were presented as mean and standard deviation; and comparison was done between the groups by "Z" test or ANOVA. Qualitative data were analyzed by frequency and percentage, and comparison was performed by chi square ($\chi^2$) test and regression analysis. A probability value (p) of $<0.05$ was considered statistically significant.

## Results

### Age distribution of the pregnant women:

The age of the pregnant women ranged from 20 to 36 years with the mean age of 28.8 (SD$\pm$4.7) years. Figure-1 showed the distribution of the age group of the pregnant women. Maximum pregnant women [21(35.0%)] were in the age between 25 to 29 years, followed by 19 (31.7%) pregnant women were in the age between 30 to 34 years; 11 (18.3%) pregnant women were in the age between 20 to 24 years and 9 (15.0%) were 35 years or above.

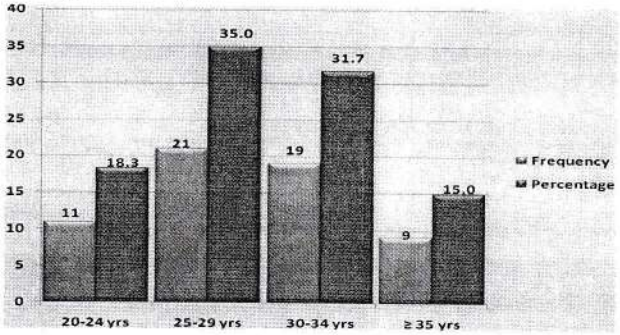


**Figure-1 Distribution of the pregnant women based on age group (n=60)**

Distribution of VZV IgG level among different groups:

The VZV IgG level in pregnant women ranged from 0.15 to 2.3 IU/ml with the mean of 1.0 (SD± 0.6) IU/ml. The VZV IgG level in new born babies ranged from 0.16 to 2.7 IU/ml with the mean of 1.3 (SD± 0.7) IU/ml. The VZV IgG level in infants at 6 months age ranged -from 0.12 to 1.63 IU/ml with the mean of 0.4 (SD± 0.4) IU/ml. The overall VZV IgG level was differed statistically significant among the groups ($p<0.001$). The VZV IgG level was significantly more in new born babies than that of pregnant women ($p=0.013$). The VZV IgG level was significantly lower in infants aged six months than that of pregnant women ($p<0.001$) and that of new born babies ($p<0.001$). Table-II showed the distribution of VZV IgG level among different groups.

**Table-I Distribution of VZV IgG level among different groups**

| Distribution | VZV IgG (iu/ml) | | | *p value |
|---|---|---|---|---|
| | Pregnant women (A) (n=60) | New born babies (B) (n=60) | Infants aged Six months (C) (n=60) | |
| Mean | 1.0 | 1.3 | 0.4 | A vs B 0.013 |
| Standard deviation | ± 0.6 | ± 0.7 | ± 0.4 | A vs C <0.001 |
| Range | 0.15 to 2.3 | 0.16 to 2.7 | 0.12 to 1.63 | B vs C <0.001 |
| | | | | Over all <0.001 |

*ANOVA test was done to analyse the data.

**Distribution of seropositivity of VZV in pregnant mother and new born babies**

Distribution of seropositivity VZV in pregnant mother and new born babies was shown in table-III. Forty nine (81.7%) pregnant mothers and 47 (78.3%) new born babies were seropositive for VZV. The seropositivity of both groups were almost similar ($p=0.648$).

**Table-II Distribution of seropositivity VZV in pregnant mother and new born babies**

| Seropositivity | Pregnant Women (n=60) | New born Babies (n=60) | *p value |
|---|---|---|---|
| Seropositive | 49 (81.7) | 47 (78.3) | 0.648 |
| Seronegative | 11 (18.3) | 13 (21.7) | |
| Total | 60 (100.0) | 60 (100.0) | |

*Chi-Square test was done to analyse the data.
Figure in the parenthesis indicates corresponding percentage.

**Distribution of seropositivity of VZV IgG in pregnant mother and infant aged six months:**

Distribution of seropositivity VZV IgG in pregnant mother and infant aged six months was shown in table-IV. Forty nine (81.7%) pregnant mothers and 6 (10.0%) infant aged six months were seropositive for VZV IgG. The seropositivity against VZV i infants aged six months were significantly lower than that of pregnant mother ($p<0.001$)

**Table-III Distribution of seropositivity VZV IgG in pregnant mother and infant aged six months**

| Seropositivity | Pregnant women (n=60) | Infant aged six months (n=60) | *p value |
|---|---|---|---|
| Seropositive | 49 (81.7) | 6 (10.0) | <0.001 |
| Seronegative | 11 (18.3) | 54 (90.0) | |
| Total | 60 (100.0) | 60 (100.0) | |

*Chi-Square test was done to analyse the data.
Figure in the parenthesis indicates corresponding percentage.

**Table-IV: Distribution of seropositivity against VZV in new born babies and infants aged six months**

| Seropositivity | New born Babies (n=60) | Infants aged six months (n=60) | *p value |
|---|---|---|---|
| Seropositive | 47 (78.3) | 6 (10.0) | <0.001 |
| Seronegetive | 11(18.3) | 54(90.0) | |
| Total | 60 (100.0) | 60 (100.0) | |

Forty seven (78.3%) new born babies and six (10.0%) infants aged six months were seropositive against VZV. The seropositivity against VZV in infants aged

six months were significantly lower than that of new born babies ($p < 0.001$).

### Distribution of seropositivity of infants aged six months against VZV according to sex:

Three (9.7%) male and 3 (10.3%) female infants aged six months were seropositive against VZV. The seropositivity against VZV of both groups were almost similar ($p = 1.000$). Distribution of seropositivity of infants aged six months against VZV according to sex was shown in table-4.10.

**Table-V : Distribution of seropositivity of infants aged six months against VZV according to sex**

| Seropositivity | Male (n=31) | Female (n=29) | *p value |
|---|---|---|---|
| Seropositive | 3 (9.7) | 3 (10.3) | 1.000 |
| Seronegative | 28 (90.3) | 26 (89.7) | |

* Fisher' Exact test was done to analyse the data.
Figure in the parenthesis indicates corresponding percentage

### Validity of previous history of chickenpox and seropositivity:

In this study, sensitivity and specificity of previous history of chickenpox and seropositivity was 87.8% and 81.8% respectively. Positive and negative predictive values were 95.6% and 60.0% respectively. This indicated that 95.6% of cases had seropositive who had previous history of chickenpox and 60.0% of cases had seronegative who had previous no history of chickenpox.

**Table-VI Cross tabulation of previous history of chickenpox and seropositivity**

| Previous history of chickenpox | Seropositivity | | Total |
|---|---|---|---|
| | Positive | Negative | |
| Positive | 43 | 2 | 45 |
| Negative | 6 | 9 | 15 |
| Total | 49 | 11 | 60 |

Sensitivity = 87.8%
Specificity = 81.8%
Positive predictive value (PPV) = 95.6%
Negative predictive value (NPV) = 60.0%

Figure-2 Distribution of pregnant women by previous history of chickenpox.

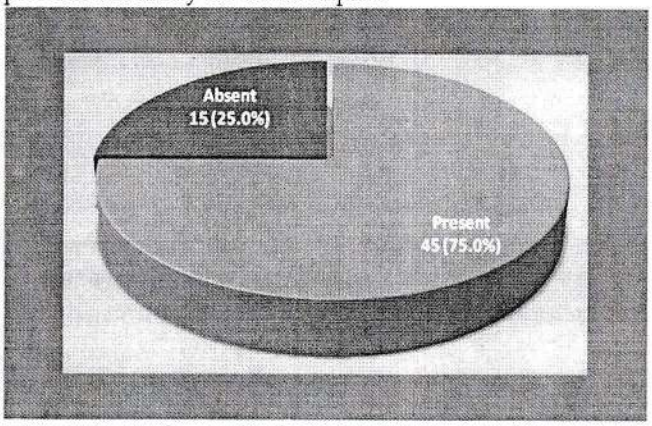


**Figure-2** showed the distribution of pregnant women by previous history of chickenpox. Previous history of chickenpox was present in 45 (75.0%) and absent in 15 (25.0%) pregnant women.

## Discussion

In this study the age of the pregnant women ranged from 20 to 36 years with the mean age of 28.8 (SD ± 4.7) years. This result was almost similar to the study of Talukder et al.[13] that mean age of the Bangladesh-born pregnant women was 26 (SD ± 5) years. Maximum pregnant women [21(35.0%)] were in the age between 25 to 29 years, followed by 19 (31.7%) pregnant women were in the age between 30 to 34 years; 11 (18.3%) pregnant women were in the age between 20 to 24 years and 9 (15.0%) were 35 years or above.

The current study showed that 29 (48.3%) were male and 31 (51.7%) were female among the new born babies whereas 31 (51.7%) were male and 29 (48.3%) were female among the infants aged six months. There was no significant difference between the groups in relation to gender ($p = 0.715$); suggesting the gender of new born babies and infants aged six months were well matched.

The VZV IgG level in pregnant women in this study ranged from 0.15 to 2.3 with the mean of 1.0 (SD ± 0.6). The VZV IgG level in new born babies ranged from 0.16 to 2.7 with the mean of 1.3 (SD ± 0.7). The VZV IgG level in infants at six months age was

between 0.12 to 1.63 with the mean of 0.4 (SD ± 0.4). The overall VZV IgG level among pregnant women, new born and infant was statistically significant ($p<0.001$). The VZV IgG level was significantly higher in new born babies than that of pregnant women ($p=0.013$). The VZV IgG level was significantly lower in infants aged six months than that of pregnant women ($p<0.001$) and that of new born babies ($p<0.001$). In this regards Pinquier et al.[6] found a rapid decline in the level of anti-VZV maternal antibodies during the first few months of life, with a substantial decrease even between the birth to one month and one to two month groups. The percentage of infants with anti-VZV antibody titers above the threshold considered to be protective decreased drastically, from 83% between birth and 3 months to 1% between 6 and 9 months, and after 4 months, most infants seemed no longer to be protected by maternal anti-VZV antibodies.

In this study 49 (81.7%) pregnant mothers and 47 (78.3%) new born babies were seropositive for VZV. The seropositivity of both groups were almost similar ($p=0.648$). This result was consistent with the study of Saha et al.,13 (2002) that 83.0% (62/75) of neonates were seropositive among their series of Bangladeshi neonates. Sharifi and Ghanjin,[15] found in an Iranian study that the seropositivity rate of females of reproductive age was 80.9% in 15-39 years group; which was in agreement with the present study. But seroepidemiological studies carried out in pregnant women in other developed countries demonstrated higher seropositivity as opposed to the present study (Karunajeewa et al.[1,16-19] Dayan et al.[1] studied the prevalence of antibodies in 2807 women aged 15–49 years attending public health-care settings in four cities in Argentina (Buenos Aires, Salta, Mendoza and Rosario) and in one rural area.

The overall seroprevalence of varicella-zoster antibodies was 98.5% (95% CI 98.0–98.9) ranging from 97.2% in central Buenos Aires to 99.3% in southern Buenos Aires and Salta. Alanen et al., (2005)[18] studied the prevalence of antibodies in Finland, obtaining a prevalence of 95%. Karunajeewa et al.[6] studied the prevalence of antibodies in 308 women attending an antenatal clinic at a Melbourne obstetric hospital and found a prevalence of 94%. Plans et al.[19] found the prevalence of varicella-zoster antibodies in pregnant women in Catalonia (Spain) was 96.1%. Seroepidemiological studies carried out in pregnant women of undeveloped tropical countries have observed a lower prevalence of varicella-zoster antibodies than those in developed countries. A seroepidemiological study carried out in 7980 pregnant women from various regions of the world found a prevalence of antibodies of 93.1% in women born in Western European countries and 80.3% in women born in Asia and Africa ($p<0.001$) (Knowles et al.[17] A polish study conducted on blood samples collected over nine years period found overall seroprevalence estimate, adjusted for sampling design for the age group 1-19 was 76.6% (95% CI: 74.6%-78.7%). Here seroprevalence correlated closely with age ($p<0.0001$) and reached 95% and 98% among 18 and 19 year age groups respectively.These results could be explained by a lower varicella-zoster transmission among children and adults in tropical countries.[20-23] Given the poor socioeconomic condition contributing malnutrition, overcrowding, poor personal hygiene, low literacy rate and rudementary or overburdened public health care facilities-the reason behind lower VZV transmission among children in developing countries remained unexplained.

In the present study 47 (78.3%) new born babies and 6 (10.0%) infants aged six months were seropositive to VZV. The seropositivity against VZV in infants aged six months were significantly lower than that of new born babies ($p<0.001$). This result was similar to the study of Saha et al.,[13]. that there was a sharp decline in antibody positivity in infants beyond the neonatal period, reaching as low as 19% in those aged 7–12 months (10/52).

In this study, sensitivity and specificity of previous history of chickenpox and seropositivity was 87.8% and 81.8% respectively. Positive and negative predictive values were 95.6% and 60.0% respectively. This indicates that 95.6% of cases have seropositive who had previous history of chickenpox and 60.0% of cases have seronegative who had previous no history of chickenpox. This result was correlated with the study of Dashraath et al.,[25] that the

sensitivity, specificity, positive and negative predictive values of a self-reported history of varicella for serologically confirmed immunity were 87.2%, 83.2%, 94.3% and 67.1% respectively.

In conclusion, a significant proportion of the Bangladeshi pregnant mother is susceptible to varicella and infant aged six months is highly susceptible to varicella. Further baseline serosurvey will be required encompassing different geographical regions of the country for formulating a vaccination strategy against VZV which is scientifically sound and economically viable. Due to curious nature of lower transmission rate of VZV during early childhood in tropical countries our children remain vulnerable to increased VZV related complications when contracted the same in later life. Any vaccination strategy must have to take into account this epidemiological variability of our country.

## References


1. Dayan GH, Panero MS, Debbag R, Urquiza A, Molina M, Prieto S et al. Varicella seroprevalence and molecular epidemiology of varicella-zoster virus in Argentina. J Clin Microbiol 2004; 42: 5698–704.
2. Lafer MM, De Moraes-Pinto MI, Weckx LY. Prevalence of IgG Varicella Zoster Virus antibodies in the Kuikuro and Kaiabi indigenous communities in Xingu national park, Brazil, before varicella vaccination. Rev Inst Med trop S Paulo 2005; 47: 139-42.
3. Asano Y, Hiroishi Y, Itakura N, Hirose S, Kajita Y, Suga S, et al. Placental transfer of IgG subclass-specific antibodies to varicella-zoster virus. J Med Virol 1988; 26:1–6.
4. van der Zwet WC, Vandenbroucke-Grauls CM, van Elburg RM, Cranendonk A, Zaaijer HL. Neonatal antibody titers against varicella-zoster virus in relation to gestational age, birth weight, and maternal titer. Pediatrics 2002; 109:79–85.
5. . Gershon AA, Raker R, Steinberg S, Topf-Olstein B, Drusin LM. Antibody to varicella-zoster virus in parturient women and their offspring during the first year of life. Pediatrics 1976; 58: 692–6.
6. Pinquier D, Gagneur A, Balu L, Brissaud O, Le Guen CG, Hau-Rainsard I, et al. Prevalence of Anti-Varicella-Zoster Virus Antibodies in French Infants under 15 Months of Age. Clin Vac Immunol 2009; 16 : 484–7.
7. Ayres KL, Talukder Y, Breuer B. Humoral immunity following chickenpox is influenced by geography and ethnicity. J Infect 2010; 61: 244-51.
8. .Agampodi SB, Dharmaratne SD, Thevanesam V, Dassanayake S, Kumarihamy P, Ratnayake A. Incidence and effects of Varicella Zoster Virus infection on academic activities of medical undergraduates - a five-year follow-up study from Sri Lanka. BMC Infect Dis 2010; 10:117.
9. .Shapiro ED, Vazquez M, Esposito D, Holabird N, Steinberg SP, Dziura J, et al. Effectiveness of 2 doses of varicella vaccine in children. J Infect Dis 2011 203: 312-5.
10. Christia sen D, Barnett ED. Comparison of varicella history with presence of varicella antibody in refugees. Vaccine 2004; 22: 4233–7.
11. Migasena S, Simasathien S, Desakorn V, Phonrat B, Suntharasamai P, Pitisuttitham P, et al. Seroprevalence of varicella-zoster virus antibody in Thailand. Int J Infect Dis 1997; 2(1):26-30.
12. Akram DS, Qureshi H, Mahmud A, Khan AA, Kundi Z, Shafi S, et al. Seroepidemiology of Varicella-zoster in Pakistan. Southeast Asian J Trop Med Public Health 2000; 31 : 646-9.
13. Saha SK, Darmstad GL, Hanif M, Khan R. Seroepidemiology of varicella-zoster virus in Bangladesh. Ann Trop Paediatrics 2002; 22: 341–5.
14. Talukder Y S, Kafatos G, De Moira AP, Aquilina J, Parker SP, Crowcroft NS, et al. The seroepidemiology of varicella zoster virus among pregnant Bangladeshi and white British women in the London Borough of Tower Hamlets, UK. Epidemiol. Infect 2007; 135: 1344–53.
15. Sharifi Z, Ghanjin SE. The Seroepidemiology of Varicella Zoster Virus (VZV) in different age groups in Tehran, Iran. Iranian J Allergy Asthma Immunol 2005; 4 : 95-8.
16. Karunajeewa H, Siebert D, Hammond R, Garland S, Kelly H. Seroprevalence of varicella-zoster virus, parvovirus B19 and Toxoplasma

gondii in a Melbourne obstetric population: implications for management. Aust N Z J Obstet Gynaecol 2001; 41: 23–8.

17. Knowles SJ, Grindy K, Cahill I, Cafferkey MT4. Susceptibility to infection rash illness in pregnant women from diverse geographical regions. Commun Dis Public Health 2004; 7: 344–8.
18. Alanen A, Kahala K, Vahlberg T, Koskela P, Vainionpaa R. Seroprevalence, incidence of prenatal infections and reliability of maternal history of varicella zoster virus, cytomegalovirus, herpes simplex virus and parvovirus B19 infection in South-Western Finland. BJOG 2005;112:50–6.
19. Plans P, Costa J, Espunes J, Plasencia A, Salleras L. Prevalence of varicella-zoster antibodies in pregnant women in Catalonia (Spain). Rationale for varicella vaccination of women of childbearing age. BJOG 2007;114:1122–7.
20. Siennicka J, Trzcińska A, Rosińska M, Litwińska B. Seroprevalence of varicella-zoster virus in Polish population. Przegl Epidemiol 2009; 63: 495-9.
21. .Venkitaraman AR, Seigneurin JM, Baccard M, Lenoir GM, John TJ. Measurement of antibodies to varicella-zoster virus in a tropical population by enzyme-linked immunosorbent assay. J Clin Microbiol 1984; 20: 582–3.
22. Leikin E, Figueroa R, Bertkau A, Lysikiewicz A, Visintainer P, Tejanai N. Seronegativity to varicella-zoster virus in tertiary care obstetric population. Obstet Gynecol 1997; 90: 511–3.
23. Mandal BK, Mukherjee PP, Murphy C, Mukherjee R, Naik T. Adult susceptibility to varicella in the tropics is a rural phenomenon due to the lack of previous exposure. J Infect Dis 1998; 178 (Suppl.1): S52-4.
24. Lee BW. Review of varicella zoster seroepidemiology in India and Southeast Asia. Trop Med Int Health 1998; 3: 886–90
25. Dashraath P, Ong ES, Lee VJ et al. Seroepidemiology of Varicella and the Reliability of a Self-reported History of Varicella Infection in Singapore Military Recruits Ann Acad Med Singapore 2007; 36:636-41.

ORIGINAL ARTICLE

The Osmani Medical Teachers Association Journal Volume 11 Number 2

# Correlation of preoperative combined serum CEA and CA 19-9 levels with Dukes stages in the colorectal carcinoma.

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## Abstract

The present study was carried out with an aim to evaluate the correlation of preoperative combined serum CEA and CA19-9 level with Dukes stages in colorectal carcinoma. Comparative Cross Sectional Study was done during the period of July, 2009 to June, 2010 in the Department of Pathology, SOMCH.Total 41 patients were selected from the indoor of surgery department in SOMCH & JRRMC on the basis of fulfilling inclusion and exclusion criteria. For staging purpose post surgical specimens were collected from the same study subject. Among the total 41 cases of colorectal carcinoma, 9 cases were staged as Dukes stage -A, 13 cases were stage-B, 18 cases were stage-C, and 1 cases were stage-D. The highest numbers were found as Dukes stage-C. In the case of CEA (cut off value 5 ng/ml), the lowest level was found 1.49 ng/ml and highest level was found 230 ng/ml. The mean (±SD) was 19.03 (±31). In the case of serum CA 19-9 values(cut off value 37 u/ml), the lowest level was found 12.45 u/ml and highest level was found 310 u/ml. The mean (±SD) was 64.45 (±70). phi coefficient correlation test was done for the CEA, CA 19-9 mean levels and for the CEA, CA 19-9 positive cases with Dukes stages to see their correlation. The tests were found significant. The preoperative combined assessment of serum CEA and CA19-9 levels can predict the Dukes stages of the colorectal carcinoma before operation.

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## Introduction

Cancer is a erm, which is closely related to disability and death. Colorectal carcinoma is as common as prostate cancer, breast cancer and lung cancer. Colorectal cancer is the third common cancer (after lung and breast) in the UK with >35,000 new cases diagnosed each year[1]. In the United States, it is by far the most common and most curable carcinoma of the gastrointestinal tract.[2]. There are an estimated 148,300 new cases per year and about 56,600 deaths, accounting for 10% of all cancer related deaths in the United States[3]. According to the annual report (2005) of National Institute of Cancer Research and Hospital, Dhaka that the total prevalence of G.I.T. cancers were 14.7% and colon carcinoma patients were 66 (1.2%) and rectal carcinoma patients were 98 (1.8%). Total 71 (1.31%) cancer patients were from Sylhet division[4]. In general, cancer of the large bowel is a disease of old age, more than 80% of cases arising in those aged above 60 years[2].

The staging systems, whether one uses the original scheme proposed by Dukes or any of the modifications that have been subsequently advanced[2]. Dukes staging system is based on the examination of the resection specimen, and on the depth of the tumour extension through the wall of the bowel and the presence or absence of lymph node involvement. This system is used to determine

prognosis and the necessity for postoperative chemotherapy[5-6]. With the bless of modern sciences, we use tumour markers for the staging correlation. Among them CEA and CA 19-9 are used for colorectal carcinoma. Important things that both serum CEA and CA 19-9 levels study in colorectal carcinoma gives more information than single one. Both pretreatment combined CEA and CA 19-9 levels are closely related to different Duke's stages which can help in treatment plan[7].

## Materials and Methods

This was a Simple Cross sectional Comparative study carried out in the department of surgery of SOMCH and JRRMC during the study period from July,2009 to June,2010 were included as the study population. Patient ...ed on the basis of history, physical examination.. ...filling the inclusion and exclusion criteria. ...per explanation of the procedures to the patient, information were obtained by brief history with particular reference. Post surgical specimen was collected from the same study patient. The specimens were examined in the department of pathology M. A. G Osmani Medical College, Sylhet with particular emphasis on diameter, size, colour, consistency and depth of the tumour in the bowel wall. Tumor mass was examined with particular emphasis on size, shape, number, consistency, presence or absence of hemorrhage & necrosis. All the specimens are carefully search for lymph nodes, if present then number, consistency and morphological features were noted. The estimation of serum CA19-9 and CEA test was done by ELISA method in the immunological Laboratory of the department of Microbiology, Sylhet M A G Osmani Medical College, Sylhet. The serum was preserved in micro-centrifuged tube at -20° C for analysis. Data's were analyzed by my personal computer with the help of SPSS software version 17.0. Quantitative data was analyzed by mean and standard deviation (SD).Qualitative data was summarized by ratio and percentage. Correlation between Dukes stages of colorectal carcinoma and levels of serum CEA and CA 19-9 were done by phi coefficient correlation test. P value $<0.05$ was considered as significant and p value $>0.05$ was considered as non-significant. Prior to the commencement to the study, the research protocol was approved by the "Ethical Clearance Committee" of Sylhet M A G Osmani Medical College.

## Results

The age range of 41 patients was 11 to 70 years. Mean ($\pm$SD) age of the patients was 53.09 ($\pm$11.39) years. The maximum number, 13 (31.7%) cases were belonged to the age group of 61 to 70 years. In this study both male and female patients were included. It was found that 27 (65.9%) were male and 14 (34.1%) were female. We found the maximum study population were fall into lower class(51.2%). CEA positive (cut off value 5 ng/ml) cases ranking the highest in well differentiated adenocarcinomas followed by moderately differentiated and least in case of poorly differentiated adenocarcinomas. CA 19-9 positive (cut off value 37 U/ml) cases ranking the highest in well differentiated adenocarcinomas followed by moderately differentiated and least in case of poorly differentiated adenocarcinomas. Among the total 41 cases of colorectal carcinoma, 9 cases were staged as Dukes stage -A, 13 cases were stage-B, 18 cases were stage-C, and 1 cases were stage-D. The highest numbers were found as Dukes stage-C.

**Fig. 1: Bar chart showing correlation of CEA means with Dukes stages**

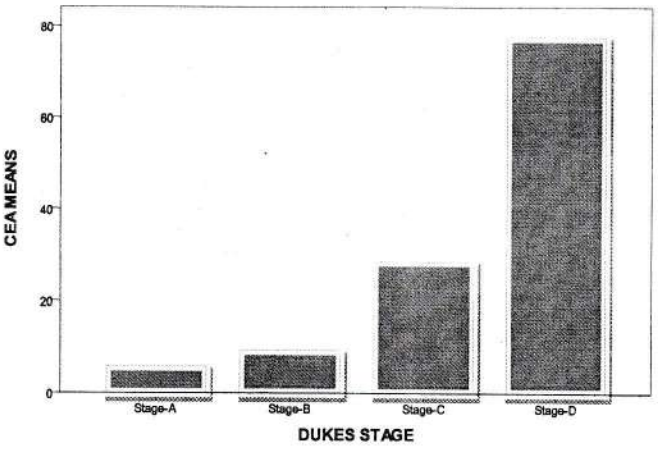

Fig 2 : Bar chart showing correlation of CA 19-9 means with Dukes stages

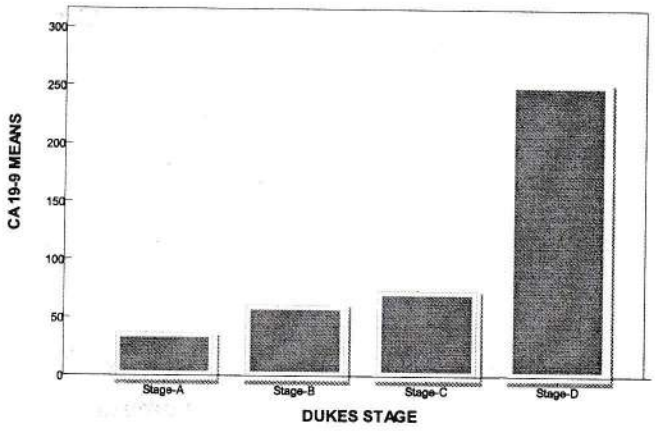


Table I: Combined Mean of CEA (ng/ml) and CA 19-9 (U/ml) according to Dukes stages

| Dukes stages | No | Mean and Std.Deviation of (CEA +CA 19-9) | |
|---|---|---|---|
| | | CEA | CA19-9 |
| Stage-A | 09 | 3.72(±2.44) | 44.04(±52.24) |
| Stage-B | 13 | 8.30(±49.75) | 61.11(±56.43) |
| Stage-C | 18 | 30.45(±43.81) | 66.44(±75.07) |
| Stage-D | 01 | 78.90(±57.94) | 255.56(±118.58) |
| Total | 41 | 23.76(±41.70) | 64.45(±70.06) |

Table II: Correlation of CEA positive cases with Dukes stages

| Serum CEA | Dukes stage | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Stage A | | Stage B | | Stage C | | Stage D | |
| | No. | % | No. | % | No. | % | No. | % |
| ≤5ng/ml | 7 | 77.8 | 7 | 53.8 | 4 | 22.2 | 0 | 0 |
| >5ng/ml | 2 | 22.2 | 6 | 46.2 | 14 | 77.8 | 1 | 100 |
| Total | 9 | 100.00 | 13 | 100.00 | 18 | 100.00 | 1 | 100.00 |

Table III: Correlation of CA 19-9 positive cases with Dukes stages

| Serum CA 19-9 | Dukes stage | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Stage A | | Stage B | | Stage C | | Stage D | |
| | No. | % | No. | % | No. | % | No. | % |
| ≤37 u/ml | 7 | 77.8 | 7 | 53.8 | 5 | 27.8 | 0 | 0 |
| >37 u/ml | 2 | 22.2 | 6 | 46.2 | 13 | 72.2 | 1 | 100 |
| Total | 9 | 100.00 | 13 | 100.00 | 18 | 100.00 | 1 | 100.00 |

phi coefficient correlation test was done for the CEA, CA 19-9 mean levels and for the CEA, CA 19-9 positive cases with Dukes stages to see their correlation. The 'p' values were 0.001 and 0.002 respectively for CEA. For CA 19-9 'p' values were 0.000 and 0.005 respectively in which both were $<0.05$. The tests were found significant.

## Discussion

The present study was carried out with an aim to evaluate the correlation of preoperative combined serum CEA and CA19-9 level with Dukes stages in colorectal carcinoma

In this study, the age range of 41 patients is 11 to 70 years. Mean (±SD) age of the patients is 53.09 (±11.39) years. The maximum number, 13 (31.7%) cases in this study are belonged to the age group of 61 to 70 years, which is similar to the studies done by others[8-11].

On histo[illegible]nination, 38 (92.7%) cases are dia[illegible]denocarcinoma and only 3 (7.3%) cases are mucinous adenocarcinoma. Of the grading, 21 (51.2%) are well differentiated; 11 (26.8%) are moderately differentiated and 9 (22.0%) cases are poorly differentiated carcinoma which is similar to other authors[8-11-12].

In this study, CEA positive (cut off value 5 ng/ml) cases ranking the highest (29.3%) in well differentiated carcinomas followed by moderately differentiated and least in case of poorly differentiated carcinomas. CA 19-9 positive (cut off value 37 u/ml) cases ranking the highest (36.6%) in well differentiated carcinomas followed by moderately differentiated and least in case of poorly differentiated carcinomas. These findings are correlated well with other studies [12-13].

Among the total 41 cases of colorectal carcinoma, 9 cases are stage A, 13 cases are stage B, 18 cases are stage C, and 1 case is stage D which are 22.0%, 31.7%, 43.9% and 2.4% respectively of the total cases. The highest numbers are found as Dukes stage C (43.9%) lesion which is same to the studies done by others [8,11-12].

The mean CEA levels are found according to the Dukes staging as follows: 3.72 ng/ml in stage A, 8.30 ng/ml in stage B, 30.45 ng/ml in stage C and 78.90 ng/ml in stage D. The mean CA 19-9 levels are found according to the Dukes staging as follows: 44.04

u/ml in stage A, 61.11 u/ml in stage B, 66.44 u/ml in stage C and 255.56 u/ml in stage D These findings are correlated well with other authors[12-14].

The present study, the CEA positive (cut off value 5 ng/ml) cases are found as follows: 22.2% in stage A, 46.2% in stage B, 77.8% in stage C and 100% in stage D and the CA 19-9 positive (cut off value 37 u/ml) cases are found as follows: 22.2% in stage A; 46.2% in stage B, 72.2% in stage C and 100% in stage D. These observations are consistent with the studies done by others[12-14].

In conclusion, in the present study, our observations are that the both preoperative serum CEA and CA19-9 levels combined correlates with Dukes stages and increases with progressive Dukes stages in colorectal carcinoma. The preoperative combined assessment of serum CEA and CA19-9 levels can predict the Dukes stages of the colorectal carcinoma before operation. As a result, the clinician can make a plan of treatment of the patient preoperatively and could be helpful for better management.

## References


1. Dorundi S and Banerjea A,. Colorectal cancer: Early diagnosis and predisposing causes. UK J Surg2006; 24 : 131-136.
2. Rosai J, 2004. 'Large intestine' In Rosai and Ackerman's surgical pathology. 9th edition. Missouri: Mosby. Pp. 776-855.
3. Turner J R,. The gastrointestinal tract' In Kumar V, Abbas A K, Fausto N and Astler J C, Robbins and Cotran pathologic basis of disease. 8th edition. Philadelphia: Elsevier 2010. Pp. 764-831.
4. Department of Cancer Epidemiology, NICRH, 2005. Annual report 2005, Dhaka. National institute of cancer research and hospital.
5. Robertson K E and Levison D A. Pathology of tumours of the small and large intestine. UK J Surg 2006; 24 :126-130.
6. Goslin R, Steele G, Macintyre, et al.,. The use of preoperative plasma CEA levels for the stratification of patients after curative resection of colorectal cancers. Ann Surg 1980.; 192 :748-751.
7. Kuusela P, Jalanko H, Rober P, Sipponen P and Mecklin P. Comparison of CA 19-9 and carcinoembryonic antigen (CEA) levels in the serum of patients with colorectal carcinoma. Br J Cancer 2004; 49:135-139.
8. Aljebreen A M, Clinico-pathological patterns of colorectal cancer in Saudi Arabia: younger with an advanced stage presentation. Saudi J Gastroenterol 2007.;13: 84-87.
9. Dbouk H A, Tawil A, Nasr F, Kandakarjian L and Merhi A, Significance of CEA and VEGF as diagnostic markers of colorectal cancer in Lebanese patients. Open Cl C J 2007.; 1:1-5.
10. Abudu E K, Awolola N A, Elesha S O, et al. Colorectal carcinoma in Lagos and Sagamu, Southwest Nigeria. A histopathological review. World J Gastroenterol 2008; 14: 6531-6535
11. Bardhan H. Correlation Of Preoperative Serum CEA Level With Dukes Stages In Colorectal Carcinoma. MPhil(Pathology) Thesis, 2009. Shahjalal University of Science and Technology.
12. Tabuchi Y, Deguchi H and Saiton Y,. Carcinoembryonic Antigen and Carbohydrate Antigen 19-9 Levels of Peripheral and Draining Venous Blood in Colorectal Cancer Patients. Cancer 1988;62:1605-1613.
13. Duffy M J,. Carcinoembryonic antigen as a marker for colorectal cancer: is it clinically useful? Clinical chemistry 2001; 47: 624-630.
14. Ebrahimzadeh M E, Miri M R and Fattahi E,. The prognostic value of preoperative serum CEA and CA 19-9 in patients with colorectal cancer. Int Med J 2005; 4: 8-13.

ORIGINAL ARTICLE

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# Profile of Patients with Oesophageal Carcinoma

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## Abstract

Oesophageal cancer – a common malignancy - has a peculiar geographical distribution and shows marked differences in incidence within a particular geographical region. It has an insidious onset and poor prognosis, affecting predominantly elder males. In Bangladesh, no reliable national data regarding socio-economic profile of patients of this disease are available. Presently, as there seems little prospect of early detection of this cancer, an understanding of the aetiological factors may suggest opportunities for its primary prevention. In this paper, we have tried to determine the role of diet and other life-style related factors in the aetiology of cancer of oesophagus.A total of 113 confirmed carcinoma of oesophagus patients were enrolled for the study. Data were obtained based on a predesigned questionnaire dealing with the basic patient data, dietary and smoking habits etc. among the cases. The data were thoroughly analyzed to define an association with the development of cancer of oesophagus.

Patients included 69 males and 44 females in the age range of 30-95 years. Only 8.85 % of the cases came from rich economic background whereas the rest came from middle and low-income groups. Majority 50.44 % were manual labourers, 27.43 % were house wives. 94 patients took betel leaves or nuts, 88 individuals took tobacco and 67 had positive smoking history. 82.30 % of the case had different combinations of personal habits. Majority 72.73 % of the cases developed oesophageal carcinoma 30 years after exposure to different personal habits.

Poor socio-economic status in addition to heavy consumption of betel leaves or nuts, tobacco and smoking are suspected to be the major risk factors for the development of oesophageal cancer. There is a good prospect of primary prevention as early withdrawal of personal habits reduces risk of developing the disease.

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## Introduction

Oesophageal carcinoma is the most common primary cancer in developing countries that occurs relatively more in males than in females[1]. It affects predominantly old individuals with highest incidence between 60 to 70 years [2]. More than 85% of patients die within two years of diagnosis making it the sixth most common cause of cancer-related deaths in the world[3],[4]. Male female ratio in the United States is 3:4.1 while in the highest risk countries ( Belgium, China, Iran, Iceland, India, Japan, the United Kingdom as well as the region around the Caspian Sea) it is 1:1[5]. The most common risk factors contributing to oesophageal carcinomas are smoking, alcohol excess, chewing betel nuts or tobacco, achalasia of the oesophagus, post-cricoid web (Plummer Vinson Syndrome), post-caustic stricture, coeliac disease and tylosis (familial hyperkeratosis of palms and soles) [6]. The disease presents with progressive dysphagia (initially to

solid, then to both solid and liquid) [7]. Diagnostic workup includes barium swallow, radiology and endoscopy with biopsies for histopathology[8]. Surgery, radiotherapy, chemotherapy, chemo-radiotherapy and laser-ablation are the modalities of treatment[9]. Despite recent advances in cancer therapy, oesophageal cancer remains one of the least treatment-responsive malignancies[10].

In Bangladesh, no reliable national data regarding socio-economic profile of patients of this disease are available. Few published studies found are mainly on hospital records and with small number of patients mostly from the central part of the country. Since, the prognosis in oesophageal carcinoma is extremely poor and as there seems to be little prospect for early detection or treatment, a better understanding of the aetiology/risk factors may suggest opportunity for its primary prevention. With this idea, we have conducted a cross-sectional study to identify the risk factors that may have a role in the development of this cancer. This study was carried out in the north-eastern region of Bangladesh, with a larger number of patients, to assess the socio-economic aspects contributing to the pathogenesis of the disease.

Aims and objectives:

The study was formulated to identify relationships of several socio-economic factors including sex, profession, economic class, personal habits, etc to the development of oesophageal carcinoma.

## Materials and Methods

It is a cross-sectional study carried out in a private diagnostic centre in Sylhet from January, 2011 to December, 2011. All consecutive patients irrespective of age, sex, socio-economic status and religion diagnosed as oesophageal carcinoma were included in this study.

The patients presenting with dysphagia, upper-abdominal or chest-pain, vomiting, anorexia, weight loss, etc underwent upper-GIT endoscopy and histo-pathological examination of tissues from suspicious lesions confirmed the cases to be of oesophageal carcinoma.

**Statistical analysis:**

*Table-I: Socio-economic status of patients with oesophageal carcinoma.*

| Class | Number | Percentage |
|---|---|---|
| Rich group | 10 | 08.85 % |
| Middle-income group | 57 | 50.44 % |
| Poor & very poor group | 46 | 40.71 % |
| Total | 113 | 100.00 % |

## Result

*Table-II: Distribution of occupation of the patients.*

| Occupation | Number | Percentage |
|---|---|---|
| Technical Workers | 7 | 06.19 % |
| Manual Workers | 57 | 50.44 % |
| Housewives | 31 | 27.43 % |
| Unemployed / Retired | 18 | 15.94 % |
| Total | 113 | 100 % |

Over the 12 months, upper-GIT endoscopy was performed on a total of 4294 patients in the diagnostic centre. Out of them, 113 were diagnosed as cases of oesophageal carcinoma by histo-pathological studies following tissue-biopsy. Among these patients, 69 were males while 44 were females. Male-female ratio was 1.6:1.

There were no patients below the age of 30 and the maximum age of the patients was 95 years. However, majority of the patients were within 50-69 years of age (46.90 %). Only 23 patients belonged to the 30-49 years range while the rest of the patients (37, 32.75 % of total patients) were more than 69 years old. Mean age was 62.5 years.

89.38 % of the sufferers came from the Muslim community and the remaining 10.62 % were Hindus.

Enquiries on socio-economic status revealed that maximum of the patients came from middle or low-income groups (57 patients from middle and 46 from lower socio-economic class). Only 8.85 % of the patients (10 patients) fell into the category of higher socio-economic group (Table-I).

Out of the 113 patients, only 7 were technical workers (e.g. Service holders, businessman, teachers, etc). 50.44 % sufferers (57 patients) were manual labourers (e.g. Farmers, day-labourers, truck and auto-rickshaw drivers, etc). Housewives comprised 27.43 % of the patients while 15.94 % were either unemployed or retired (Table-II).

*Table-III: Personal & Dietary History of patients with oesophageal malignancy.*

| Habit | Number | Percentage |
|---|---|---|
| Betel leaves or nuts | 94 | 83.18 % |
| Tobacco | 88 | 77.87 % |
| Smoking | 67 | 59.29 % |
| Alcohol | 3 | 2.65 % |
| Smoked food | 1 | 0.88 % |
| Salted food | 0 | 0 % |
| | | |
| Combined | 93 | 82.30 % |
| Smoking alone | 11 | 9.76 % |
| Tobacco leaves alone | 5 | 4.42 % |
| Betel leaves and nuts alone | 1 | 0.88 % |
| Alcohol alone | 1 | 0.88 % |
| Smoked food alone | 0 | 0 % |
| Salted food alone | 0 | 0 % |
| None | 2 | 1.76 % |
| Total | 113 | 100 % |

Personal history shows that 83.18 % cases took betel leaves or nuts. 77.87 % took tobacco while 59.29 % had smoking habits. Only 2.65 % of the patients had history of alcohol consumption. 93 out of 113 patients had multiple habits (Table-III). This constitutes 82.30 % of the data population. Smoking, tobacco leaves, betel leaves and nuts or alcohol alone were responsible in 9.76 %, 4.42 %, 0.88% and 0.88% of the patients respectively. 2 of the patients had no history of taking any substance. No significant information could be gathered from dietary history. Only one patient gave history of taking smoked food whereas the rest of the patients had history of normal diet.

Majority of the patients (80 patients) developed oesophageal carcinoma after continuing their personal habits for 30 years or more. 21 patients developed the disease 20-29 years after the onset of the habit. Only 9 patients (8.18 % of total patients) suffered from the malignancy within 20 years of developing the habit (Table-IV).

*Table-IV: Duration of personal habits until developing oesophageal carcinoma*

| Duration of Personal Habits | Number of patients | Percentage |
|---|---|---|
| Within 20 years | 9 | 08.18 % |
| 20-29 years | 21 | 19.09 % |
| 30 years or more | 80 | 72.73 % |
| Total | 110 | 100.00 % |

## Discussion

Carcinoma of the oesophagus is the third leading cancer in men and fourth leading cancer in women in India [11,12]. Oesophageal cancer is emerging as a common cancer in Bangladesh. But there is dearth of data regarding the proportion of oesophageal carcinoma among all malignancies in general. Incidence of oesophageal cancer is higher in males and rises steadily with an advancing age[1,2,3,4,5]. In the present survey, we observed a male preponderance with a male to female ratio of 1.6:1 with 46.90% cases in the age group of 50-69 years [Table – I, II]. Several risk factors have been studied as possible aetiological factors for the development of oesophageal carcinoma. Only 8.85 % of the cases came from rich economic background whereas the rest came from middle and low-income groups.

We observed [Table – I, II] 50.44% of our cases were manual workers (farmers, day-labourers, truck and auto-rickshaw drivers, etc) in contrast to 6.19% who were technical workers (e.g. Service holders, businessman, teachers, etc). The prevalence of the disease among housewives is also quite common (27.43 % of all cases). It seems that the manual labourers and housewives may be exposed to a variety of hazardous chemicals and biological agents that are known or suspected carcinogens such as

pesticides, solvents and fuels. In addition, taking betel nuts or leaves is quite popular in our region particularly among manual labourers. There were 94 cases with history of taking these substances. However, betel leaves or nuts alone do not seem to be a potent risk factor alone [Table – III]. Similarly, other risk factors such as smoking, tobacco or alcohol alone caused relatively less oesophageal carcinoma. In fact, 82.30 % of the patients had multiple personal habits. Smoking is an established risk factor for oesophageal cancer[3,13-16] In the present study, cancer of oesophagus was found common in females as well although smoking is not so prevalent among female population in this region but they are exposed to passive smoking. They are also exposed to kitchen smoke and fumes as they use cow-dung, wood, coal etc. as fuels for cooking 18. Several studies have shown association of alcohol with oesophageal cancer [13,14,16,19]. Our results in this regard are totally contradicting as only 3 of our cases had consumed alcohol at any time in past [Table – III]. Similarly, history of taking smoked food was rare and we found no case with a history of taking salted food in excess. This is assumedly due to the traditional, cultural and religious background in the region.

However, betel leaves or nuts and tobacco appear to be more important than smoking in producing oesophageal carcinoma in this part of the country. Little pre-existing data is available regarding relationship of oesophageal carcinoma. We observed that 72.73 % of the patients had history of maintaining a personal habit at least for 30 years [Table – IV]. On the other hand, only 8.18 % developed the disease within 20 years of onset of the habit. This suggests in perspective of primary prevention that, quitting a personal habit within 20 years greatly reduces the chances of carcinoma oesophagus. The findings are consistent with other studies 13,19-21.

In conclusion, it is to be mentioned that this study was done in a private centre. In addition, people of all classes may not have access to this centre. Despite that, our observations in this geographical region of high incidence suggest and strongly suspect poor socio-economic status (peak incidence among middle and low-income groups and manual labourers) to be a major risk factor for the development of oesophageal cancer as this population is susceptible to occupational exposure and various personal habits including betel leaves/nuts and tobacco which are the commonest risk factors (83.18 % and 77.87 % respectively). Majority of the cases developed 30 years after exposure to different personal habits with considerably less incidence within 20 years of onset of the habits. It is more common in males (male female ratio 1.6:1). Mean age of the disease is 65 years. Thus, the most feasible method to reduce this cancer burden is to identify and target etiological factors, improve socio-economic status and finally to develop strategies for prevention. There is still scope of further evaluation and studies to identify association of nutritional deficiencies (e.g. Iron deficiency leading to Plummer Vinson Syndrome), low intake of fresh fruits and vegetables, positive family history, achalasia and coeliac disease. Synergism between smoking, tobacco leaves and betel leaves or nuts to cause oesophageal carcinoma may be analyzed further.

## References


1. Goljan EF. Rapid Review Pathology. In: Gastrointestinal disorders. New Delhi, Third edition, Mosby-Elsevier 2010:326.
2. Chou JC, Gress FG. Esophageal tumors. In: Chapter 18, Editors Friedman SL, McQuaid KR, Grendell JH. Second edition, Current diagnosis and treatment in Gastroenterology. Newyork, Lange Medical Books, Macgraw-Hill 2003:299.
3. Kamangar F, Malekzadeh R, Dawsey SM, Saidi F.et al Esophageal cancer in North Eastern Iran: A review. Arch Iran Med 2007;10:70-82.
4. Parkin DM, Stjemswards J & Muir CS. Estimation of worldwide frequency of twelve major cancers. Bull Wolrd Health Org. 1984:62:163-182.
5. Munoz N, Day NE, Esophageal cancer. In: Schottenfield D. Fraumen GF (eds): Cancer epidemiology and prevention. New York, Oxford University Press, 1996:681.
6. Colledge NR, Walker BR, Ralston SH (eds). In: Chapter 22, Editors Palmer KR, Penman ID.

Twenty-first edition, Davidson's Principle and Textbook of Medicine. China, Churchill Livingstone-Elsevier 2010:869.
7. Chou JC, Gress FG. Esophageal tumors. In: Chapter 18, Editors Friedman SL, McQuaid KR, Grendell JH. Second edition, Current diagnosis and treatment in Gastroenterology. Newyork, Lange Medical Books, Macgraw-Hill 2003:301.
8. Maher M, Ali A, Qureshi H, Zuberi SJ. Transhiatal Oesophagectomy for Carcinoma Oesophagus - Early Experience. J Pak Med Assoc 1991:129-131.
9. Bown SG. Palliation of Malignant Dysphagia: Surgery, Radiotherapy, Laser, Intubation alone or in Combination? Ann Oncol 2006;17:501-10.
10. Khan NA, Teli MA, Haq MM, Bhat GM, Lone MM, Afroz F. A survey of risk factors in carcinoma esophagus in the valley of Kashmir, Northern India.
11. Malkan G, Mohandas KM. Epidemiology of digestive tract cancers in India. Gut 1997;16:98-101.
12. Malhotra SL. Geographical distribution of gastrointestinal cancers in India with special reference to causation. Gut 1967;8:376-72.
13. Chitra S, Ashok L, Anand L, Srinivasan V, Jaynath V. Risk factors for oesophageal cancer in Coimbatore;SouthernIndia;A hospital basesd care control study. Indian J Gastroenterology 2004;23:19-21.
14. Farin K, Graca MD, William FA. Patterns of cancer incidence,mortality and prevalence across five continents: Defining priorities to reduce cancer disparities in different geographic regions of the world. J Clin Oncol 2006; 24:2137-50.
15. Saeki H, Ohno S, Araki K, Egashira A, Kawaguchi H, Ikeda Y, *et al.* Alcohol consumption and cigarette smoking in relation to high frequency of P53 protein accumulation in esophageal squamous cell carcinoma in Japanese. Br J cancer 2000;82:1892-94.
16. David J, Adlestein MD, Walter B, Forman MD, Barbara B. Esophageal carcinoma;A six year review of the Cleveland Veterans Adminstration Hospital experience. Cancer 1984;
17. 54:918-23.
18. Galeone C, Pelucchi C, Levi F, Negri E, Talamini R, Franceschi S, La Vecchia C. Foliate intake and squamous cell carcinoma of the esophagus in Italian and Swiss men. Ann Oncol 2006;17: 321-24.
19. Dwight TJ, Douglas T, Luis RV, Peter G, Sherry C, Cathy T. Lung cancer and exposure to tobacco smoke in the household. New Eng. J Med 1990;323:632-36.
20. Siddiqui M, Precussmann R. Esophageal cancer in Kashmir: An assessment. J Cancer Res Clin Oncol 1989;115:111-17.
21. Arif SM, Basher A, Ahmed DS, Rahman H, Roy PK, Hasan M, Khan AKA. Clinical presentation of the carcinoma of oesophagus. Journal of Dhaka Medical College Oct. 2006:15:58-64.

ORIGINAL ARTICLE

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# A Study of Knowledge ... ice of Rural people about Tobacco consumption & ...itude towards the Govt. Legislation a... ...oking.

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## Abstract

This cross sectional study was conducted in a rural community of Jaintapur upazila during the month of January to june 2012. The objective of this study was to estimate the knowledge and practice of people about tobacco consumption and attitude towards Govt. legislation against tobacco consumption amongst the respondents and observe some other associated variables. Respondents were considered of both sexes aged 15 years and above. The data was obtained through face-to-face interview of the respondents through a semi structured questionnaire. The sample size was 319 out of which 277 we... found to be consumers of tobacco. Majority of the study population were male (87.5%). Illiteracy was found in 44.2% of the respondents. Most of them are farmer (25.4%) and had some type of small business (17.9%) and a monthly expenditure between Taka 5001-10000 in 40% of the respondent. Prevalence of tobacco users was estimated to be 86.8%. Of them, 32% were only smokers, 18% were only chewers and rest 37% were both smoker and chewer. The most common form of smoking and chewing was found to be cigarette (46%) and tobacco leaf (31%) respectively. A large percentage of the respondents (95%) knew about the adverse health effects caused by consumption of tobacco. This was a limited attempt to estimate the Knowledge ...

The calculated percentage of user was ... alarming compared to some previous da... indicates that disease burden will i... future.

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## Introduction

Consumption of tobacco is a major risk factor for mortality. Data show that one in two smokers will die from a tobacco-related disease[1]. Tobacco kills over five million people every year and by 2030, it is estimated to kill 8.3 million people. Over 70% of these deaths will occur in developing countries[2]. Tobacco consumption is amongst the largest preventable causes of death today. The WHO has declared bringing down this consumption rate to save lives, a public health priority.

Smoking is not only associated with lung cancer but is also linked to cardiovascular diseases, tuberculosis, and chronic respiratory diseases[3]. In Bangladesh, however, the awareness level about the harmful effects of tobacco is low. About half of Bangl...shi men and one-fifth of women use tobacco in either smoking or smokeless form[4]. Regardless of how tobacco is consumed, its adverse influence on disease and mortality among individuals and populations is clear. However, the distribution of tobacco consumption is not uniform. Tobacco consumption is often found to be disproportionately higher among lower socioeconomic groups [5].

Tobacco kills over five million people globally each year due to tobacco related illness and by 2030, it is estimated to kill 8.3 million people. The WHO has declared bringing down this consumption rate to save lives, a public health priority. In Bangladesh,

27.2% (25.9 million) of the adult population currently use smokeless tobaco. Prevalence is similar in males (26.4%) and females (27,9%). Current smokeless tobacco use is more prevalent in rural areas (28,8%) compared to urban areas (22.5%).[6]
In a separate study in Bangladesh, the prevalence of tobacco cons[illegible]on was found to be [illegible] bidi smok[illegible] and ci[illegible]

[illegible] to find present prevalence for [illegible]parison.

## Meterials and methods

This cross sectional study was done in purposively selected adult people of Jaintapur Upazila sadar and surrounding areas for a period of six month starting from January to June 2012. Sample size was 319 including both men and women. Sampling technique was purposive. Data collected by semi structured questionnaire through a face-to-face interview. Procedure of data analysis was SPSS version 17.

## Results

Table-1 Socio demographic information of the study population (n=319)

| *Variables* | *Frequency (f)* | *Percentage(%)* |
|---|---|---|
| Age in years | | |
| <20 | 13 | 4.1 |
| 21-30 | 73 | 22.9 |
| 31-40 | 69 | 21.6 |
| 41-50 | 64 | 20.1 |
| 51-60 | 60 | 18.8 |
| 61-70 | 30 | 9.4 |
| >70 | 10 | 3.1 |
| Sex | | |
| Male | 279 | 87.5 |
| Female | 40 | 12.5 |
| Religion | | |
| Muslim | 299 | 93.7 |
| Hindu | 20 | 6.3 |
| Education | | |
| Illiterate | 141 | 44.2 |
| Informal education | 24 | 07.5 |
| Primary | 61 | 19.1 |
| Secondary | 68 | 21.3 |
| SSC | 09 | 02.8 |
| HSC | 07 | 02.2 |
| Graduate &Above | 09 | 02.8 |
| Occupation | | |
| Farmer | 81 | 25.4 |
| Business | 57 | 17.9 |
| [illegible] | 50 | 15.5 |
| [illegible]wife | 39 | 12.2 |
| [illegible]labourer | 68 | 21.3 |
| [illegible]pendent | 10 | 03.1 |
| Others | 14 | 04.4 |
| Monthly Expenditure | | |
| Tk 0-3,000 | 31 | 09.7 |
| Tk 3,001-5,000 | 90 | 28.2 |
| Tk 5,001-10,000 | 127 | 39.8 |
| Tk.10001-20000 | 59 | 18.5 |
| Tk. > 20000 | 12 | 03.8 |

More than half of the respondents were aged between 21-50 years with the majority being males (87.5%). Majority were Muslims (93.7%) Nearly 45% respondents were illiterate. Among the respondents 87% consumed tobacco, of which 32% were smokers, 18%were only chewers and 37% were both smoker & chewer (Fig.1) The most popular form of smoking was cigarette (69.1%) and Bidi was not uncommon. Regarding chewing tobacco 31% chew as tobacco leaf,23% as jorda and 1% as gul. Friends (46.1%) are mostly responsible for taking up this habit. Other influencing factors of increase smoking are, stress, depression, monetary problems and others etc. Most of the respondents (95%) had the knowledge about ill effects of passive smoking. It shows that 85.5% respondents knew about the adverse effects of passive smoking while 14.5% had no idea.

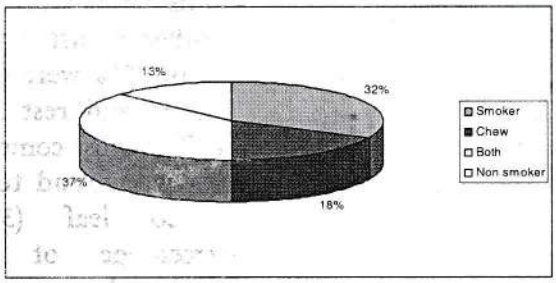


Fig-1.Pie diagram showing pattern of tobacco consumption.

This cross sectional study done in a rural community of Jointapur Upazila was an attempt to determine the percentage of adult population indulged in tobacco consumption, explore its pattern and know whether the respondents had any knowledge regarding the bad health effects of this habit. A total

of 319 respondents were interviewed and out of them 277 were found consumers of tobacco. A limitation of this study was that it could not explore the health hazards of the consumer population.

Many of the respondents in the study were found illiterate (44%) with only 40% having primary or secondary level education. Having education more than that is very much less 5%. Forty percent of the respondents had a monthly expenditure of Tk. 5001-10000. Only less than 4% had monthly income of more than twenty thousand. (Table-1) Prevalence of tobacco consumption found among the respondents were 87%. Only smokers constituted 32%, only chewers 18% and both smoker & chewer 37% . The Bangladesh Demographic and Health Survey (BDHS) 2004 found the overall prevalence of tobacco consumption to be 59% [7]. This indicates a rise in the prevalence. In another study conducted in 1995 to estimate the global prevalence, it was seen that smoking habit was highest for persons aged 30 to 49 years. Low- and middle-income countries accounted for 82% of the world's smokers. In East Asia and the Pacific, 32% of the population aged 15 years and older were tobacco consumers [1].

This study found that 46% of the smokers preferred cigarettes and the rest bidi. In case of chewing tobacco 41% were chew regularly. Among them 31% chew as tobacco leaf and 23% as jorda and only 1% as gul. BDHS 2004 concluded bidi smoking to be 29.6%, cigarette smoking 27.8% and chewing tobacco leaf with jarda 17.5% respectively. A study conducted in India found 50% to 80% of the smokers smoking bidis, and the remainder smoking cigarettes [8]. Regarding duration of smoking 50% smokes >10 years. Only 10%, 5-10 years and rest 1 to 5 years. Around 40% of respondents took 5 to 20 sticks per day . Only 17% took more than 20 sticks. In case of chewing tobacco 41% were chew regularly. Regarding influence of smoking 46% said they influenced by friends. About 68% of respondents told they smoke for relief stress.

Eighty percent of respondents knew about ill effects of passive smoking. This figure was found to be 80% in another study conducted among the population of some developing counties [9]. Most of the respondents (65%) knew that smoking in public places and transport is an offence. 47% of the respondents knew the actual amount of fine and 33% did not know about it. Maximum respondent (97%) supported with govt. decision of punishment.

In Conclusion, the calculated tobacco consumption was 87%, which is quite alarming compared to some previous data. It indicates that non-communicable disease burden will rise in the future. Although majority of the consumers know about the adverse health effects, they cannot give up the habit probably due to some sorts of addiction.
This study can help in planning anti smoking campaigns and health education programs for the public. Further, in depth studies to find out the causes related to tobacco consumption and the health hazards present among the consumers will be of great value. A government health warning should be introduced for all tobacco products sold in the market.

## References

1. Jha P, Ranson MK, Nguyen N, Yach D. Estimates of Global and Regional Smoking Prevalence in 1995, by Age and Sex. Am J Public Health. 2002; 92: 1002–1006.

2. Mathers CD, Loncar D. Projection of global mortality and burden of disease from 2002 -30. Plos medicine2006;39110:e442

3. Peto R, Lopez AD. The Future Worldwide Health Effects of Current Smoking Patterns. Global Health in the 21st Century. New York, NY: Jossey-Bass; 2000:154–161.

4. Murray CJ, Lopez AD. Mortality by Cause for Eight Regions of the World: Global Burden of Disease Study. Lancet 1997; 349: 1269–1276.

5. Ahmed S, Rahman A, Hull S. Use of Betel Quid and Cigarettes Among Bangladeshi patients in an Inner-City Practice: Prevalence and Knowledge of Health Effects. Br J Gen Pract 1997; 47: 431–434.

6. GATS Bangladesh report 2009

7. Summers RM, Williams SA, Curzon ME. The Use of Tobacco and Betel Quid among Bangladeshi Population in West Yorkshire. Community Dent Health. 1994; 11:12–16.

8. Bangladesh Demographic and Health Survey 2004. (Dhaka, National Institute of Population and Training, Mitra and Associates, ORC Macro)

9. Narayan KM, Chadha SL, Hanson RL, Tandon R. Prevalence and Patterns of Smoking in Delhi: cross sectional study. BMJ 1996; 312:1576-9.

OCCASSIONAL NOTE

The Osmani Medical Teachers Association Journal Volume 11 Number 2

# Study Of Transsexualism

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## Abstract

**Transsexualism is a serious medical, social and legal problem which cannot be ignored. Transsexualism is something which disturbs life from the outset and from every point of view. The basic problem arises due to lack of stable working definition of sex, coupled with official unwillingness or reluctance to go beyond the morphological criterion, which by itself is nowadays generally held to be insufficient and which is linked to an inflexible legal classification, which in the scientific world of today calls for serious reexamination.**

[OMTAJ 2012; 11(2)]

## Introduction

Persons who react to sexual frustrations with a regression to infantile sexuality are called perverts. Sexual deviations are commonly seen in all types of races and communities[1]. A sexually deviant person gets pleasure from sexual acts other than heterosexual intercourse. Sexual deviations are modes of sexual release and mostly men use them, where normal modes of release are not available[2]. A deviant is unable to maintain normal sexual relationship and thus chooses alternative, non intimate and impersonal channels of expression. It may either be abnormal choice of sexual objects or abnormal choice of techniques of sexual gratification. Transsexualism is a sexual deviation in which the deviant dresses, acts, behaves, thinks, feels and believes to be of the opposite sex, but does not get excitement by these. They do this being unable to accept their own sex. It is more common in males as compared to females[3].

In India, a common variant of Transsexualism is Hijras. It is a community in which members are impotent men who dress and live as women and undergo emasculation. Their traditional way of earning is by collecting alms and receiving payments for blessing newborn babies and newly married couples. Hijras identify themselves as in betweens, using words indicating feminised males or as women. Their collective public stances that they wish to be regarded legally and socially as women, though the degree to which the individual hijra actively experiences himself as woman varies[4]. Some persons are born as males; join the community for a variety of economic, social and psychological reasons, while others who may share the physical and/or psychological characteristics of hijars, do not join the community for various resons[5].

The transsexualists have the tendency to remove the genital organs of one sex or the other to become the member opposite gender. There are many reports of sex changing operation from male to female and vice versa[6]. In our country, the majority of Hijras have the central ritual of operation where a part or all of the male genitals are removed, which becomes the most authentic way of identifying oneself as a Hijra. During this process of operation, many persons die as it is

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performed by an unqualified doctor (quack), without any anaesthesia or aseptic operation theatre, by using any sharp knife, No stitches are made and the wound is left as such to heal by itself[4,6].

## Medico Legal issues

Transsexualism persons not pose much of the legal issues, but the real problem arises when a transsexualist gets his/her sex changed to opposite sex and desires his/her rights or dies/hurts himself/herself during sex-change operation. In September 1976, D. Can Oosterwijck, a Belgian female to male transsexual, brought a successful case from Belgium before the European Commission of Human Rights in Strasbourg. He claimed that Belgium had violated his basic human rights by refusing to change his legal sexual status following sex change surgery.

**Legality of sex change operation**

Sex change operation has multifaceted effect on the life of a person and gives rise to medico legal, social and moral controversies. Very few countries such as Sweden and Germany[8] have so far legislated specifically on the subject of transsexuals that entered in parish register and who for a considerable time have behaved accordingly and may be expected to continue living in such a sex role may, on application, obtain an official recognition that they belong to the other sex Applicant must be an unmarried Swedish citizen of at least 18 years of age and must have undergone sterilization or for other reasons be incapable of procreation, Responsibility for decisions to grant sex reassignment tests with the National social Welfare Board, which is also tile authority to grant permission for sex change operation. Being clearly a pioneer legislation, not many countries have so fir followed/ adopted the provisions. In the absence of specific legislation on the subject, the legality of sex change operations is still a matter of speculation and debate in majority of countries Generally, sex change operations a considered legal if they are medically indicated, that is to say, if they have a genuine therapeutic purpose. On the whole, it seems that in many European countries so called sex change operations are not considered to be illegal. The legality of the operation in general does seem, however, to call for a standardisation of its conditions, which would take into account not only the quality of the patient's consent and course the doctor's good faith, but also, where the tramssexual already has a family, the social implications of the interested third parties This will help reduce the high mortality attached to these types of operations in our country.\

**Civic rights issues**

Various issues of civil rights arise after sex change operation such as : (i) change of name (ii) change of sex (iii) Marriage.

**Change of name:** Various countries allow a person's name to be changed to another not correspon( ing to his legal sex, and this, often irrespectiv : of surgery. In some countries, this change c.n be formalised by a legal document known as deed poll, while in others including India, no such formality is required ; just an announcement in newspaper and an affidavit in the court is sufficient. In Norway, transsexuals under treatment with a view to sex redetermination may obtain an asexual or neutral name by a licence granted by the Ministry of Justice, but a name of the opposite sex can only be allowed, following a sex change operation and consequent change of sexual status on the birth certificate. Countries like Austria, Portugal and Spain do not allow forenanies which do not correspond to the person's legal sex.

**Change in sex:** Legal change in sexual status requires alteration in the sex entry in birth register and certificates. Most of the countries do not have specific rules, regulations following sex change operations prove to be much more complex and controversial than mere change in names. Very few countries such as Sweden and Germany have specific law to regulate transscxuals and have provisions for change in sex, while majority of the countries are silent on this.

**Marriage:** The principle of law on marriage is that it is a relationship between two persons of opposite sex and is therefore dependent on the legal sex of the parties. Hindu marriage Act debars an

individual having ambiguous sex from marriage. Thus, post operative transsexuals may many members of their original sex only if their own changed sexual status has been legally recognised. This is the position in Sweden, Germany, Norway and also in our country. In many other countries, on the other hand, the rather incongruous position is that an operated male to female transsexual cannot, after the operation, validly marry a male or an operated female to male transsexual.

## Conclusion

Transsexualism is a serious problem involving medical, legal, social and psychological issues. If the transsexual is not to he left to continue to live in a bewildering limbo of legal and social ambiguity, a satisfactory solution to the problem is to be sought through full and frank co-operation between experts of both medical and legal fields, taking care of the interests of both the transsexuals as well as the society. So far very few countries have come up with specific legislations on this subject and there is an urgent need for others to frame comprehensive laws to take care of all the aspects of transsexualism; this is more so in countries like ours where high mortality is associated with sex change operations performed mostly by unqualified persons.

## References


1. Freud S. Three essays on the theory of sexuality. Standard Edition. New York Vol 7, 1953, pp.135-243.
2. Edwards D. Sexual behaviors of college students. Unpublished manuscript. Emroy Univ. 1977
3. Mihanty GA. : Text book of Abnormal Psychology. 2nd Ed. New Delhi, Kalyani Publishers; 1989. pp352-355.
4. Nanda S. The Hijras of India. Med Law 1984; 3 : 59-75.
5. Carstairs GM. Hinjra and Jiryan. Two derivatives of Hidus attitudes to sexuality. Br J Med Psychol 1956; 29: 128-38.
6. Verma SK. Sex changing operations- Fatal outcome. J Criminol & Criminality 1993; 14 : 52-4.
7. Kucheria K, Ammini AC & Taneja N. Clinico-genetic and Hormonal profile of Eunuchs (Hijras). J Forensic Med Toxicol 1987; 4: 1-3.
8. Hoenig J. The legal position of the transsexual mostly unsatisfactory outside Sweden. Can Med Assoc J 1977; 116:319-23.
9. Barbaro AC. Medico-legal aspects of transsexualism in Western Europe. Med Law 1986; 5: 89-99.

REVIEW ARTICLE

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# Aetiology of bronchial asthma

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## Introduction

Asthma is chronic allergic inflammatory disorder of the medium sized airways causing paroxysmal reversible airway obstruction producing respiratory difficulty with wheeze and is a expiratory problem.[1] The disorder may be inherent (atopic) due to genetic susceptibility of theairway against some stimuli or irritants .These people having asthma are with early onset, male preponderance and have other allergic disease like eczema,sometimes have episodic attack[2]. The environmental factors are the trigger or developer for asthma attack.The stimulants are usually extrinsic /external ( coming from outside). These triggers are indoor or outdoor irritants like house dust containing mite and excreta of cockroach ,furred animal (dog, cat, rat), pollen from trees, grass, paddy and flowers, fungi, molds and yeasts[1].Tobacco smoke active or passive,other smoke,air pollutants, pungent odour, cosmetics, paints, insecticides spray are also responsible factors. Food rarely causes asthma. Common food implicated in allergy are beef, prawn and hilsha fish[1]. Drugs like aspirin may also produce asthmatic symptoms.

Allergic inflammation causing production of specific IgE, generates inflammatory chemical mediators (cytokine ,chemokine,prostaglandin,histamine) with narrowing of medium sized airway due to muscle spasm,mucosal swelling,viscid secretion.Airway remodeling also leads to respiratory difficulty with wheeze mostly expiratory[7].

**Aetiology**: Bronchial asthma is complex chronic inflammatory disorder of the airway in susceptible individual due to certain stimuli resulting variable airflow limitation and presenting as wheezing, breathlessness, chest tightness and cough (national guideline)

Asthma has a significant genetic and environmental component and as its pathogenesis is not clear, much of its definition is descriptive. The main physiological feature of asthma is episodic airway obstruction characterized by expiratory airway limitation.The dominant pathological feature is airway inflammation sometimes associated with airway structural changes. Wheezing appreciated on auscultation on the chest is the most common physical finding.

Asthma is a chronic airway inflammatory disorder in which many cells and cellular components play a role specially mast cell, eosinophil, T-lymphocyte, macrophage and neutrophil. The chronic inflammation is associated with airway hyper-responsiveness to a variety of stimuli that leads to episodes of wheezing, cough, breathlessness and chest tightness mostly at night or early morning. Episodes are usually associated with widespread variable airflow obstruction within the lung which is often reversible spontaneously or with treatment.

Recent evidence suggests that sub basement fibrosis may occur in some patients with asthma called airway remodeling it is present in all forms, mild moderate and severe and has no relation with control, no reproducible response to treatment with ICS.

There are five components of asthma:

a) Natural course of the disease
b) Reversible airway obstruction
c) Hyper-responsiveness to multiple stimuli
d) Airway remodeling
e) Cardinal features - breathlessness, wheeze, chest tightness and cough

Factors that influences the development and expression of asthma (influencing the risk of asthma) are :

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- host factor (Causing development of asthma)
- environmental (Trigger the symptom of asthma)
- Both

A)Host factor :

a) Genetic: Inheritance of asthma is found in one in six if one of the parents have asthma and one in three if both parents are affected.Some genes predisposes and some are associated with response to treatment.The identification of genetic markers are important not only as risk factor in the pathogenesis of asthma but also as determinants of responsiveness to treatment

Factors inherited and responsible for asthma are -

- Airway hyper-responsiveness
- Generation of inflammatory mediators like cytokines,chemokinesetc

-Production of allergen specific IgEantibody with increased level of IgE.

b) Maternal smoking during pregnancy and early childhood increases the respiratory illness of the baby including asthma is well documented in epidemiological studies.

c) breast feeding: Study has shows that breast feeding confers some protection to the baby against asthma attack in family history of atopic individual .Cows milk,soya milk have a higher incidence of wheezing illness in early childhood compared to breast feed.

d) Obesity: Asthma is more frequently seen in obese subject (BMI more than 30kg/sq m) and is very difficult to control. Obese people with asthma has lower lung function and more comorbidities.Use of systemic glucocorticoids andsedentary life style may contribute to obesity in severe asthma patient.But in most cases obesity precedes the development of asthma.

c) Sex: Male sex is a risk factor for asthma in children before 14 year of age and is about double the female sex but in adult asthma is more in women than in man. This may be due to smaller lung size at birth for male,but later lung size becomes larger in adult.

B.Environmental factor (trigger, developer)

Some causing risk of asthma development and some causes development of asthma symptom.

a) Allergen-

Indoor allergen-domestic mites, house dusts, furred animal (dog, cat, mice), cockroach allergen, fungi, molds, yeasts, animal dander (dog, cat, rat)

Outdoor allergen-pollen from grass, paddy, flowers, trees, fungi, molds, yeasts.

Food and additives-rarely causes asthma attack.Some causing allergy to some individual and some do not. Common allergy producing foods arebeef, prawn, hilshafish, seafood, duckegg, cow's milk, nuts, some vegetables.

Drugs - Aspirin and some other NSAID.

b) Irritants

Tobacco smoke active or passive,other smoke, occupational, outdoor and indoor air pollution, spray, strong pungent odour, perfume, cosmetics, paints, toxic gases from factories and automobiles, cooking spicy food,insecticide spray etc.Tobacco smoking is associated with accelerated decline in lung function in asthma patient,increases In asthma severity, less response to oral or inhaled corticosteroid and less control. Exposure to smoke prenatally and after birth is at risk of developing asthma like symptom in early childhood.

c) Infection -RTI, predominantly viral respiratory syncytial virus (RSV) and parainfluenza virus causes bronchiolitis and wheeze.Rhinosinusitis predispose asthmatic patient to severe bronchial asthma.

d) Occupational sensitization-Asthma is most common occupational respiratory disorder in industrialized country. Occupational asthma include one tenth of total asthma cases in adult. Most occupational asthma is immunologically mediated. High risk occupation include farming agricultural work, spray painting, cleaning work, plastic manufacturer.

e) Others - Exercise, change in season, stressful life.

## References

1. National guide line -Asthma and COPD. 4th ed.Asthma association Bangladesh. Revised & reprint 2012.

2. C Haslett, ChilversER, CorrisPA. Asthma. Davidson's Principles and Practice of Medicine 19th ed.pp513
3. Reddel H, Mark W. et al, Difference between asthma exacerbation and poor asthma control. Lancet 1999;353-69.
4. O`Byme PM.NayaIP, KallenA, PostmaDS, Banes PT.Increasing doses of inhaled corticosteroids compared to adding of LABA in achieving asthma control.Chest 2009 ; 134: 1192-9.
5. Holloway EA west RJ. Integrated breathing and relaxation. Training for adults with asthma in primary care -a randomized controlled trial.Thorax 2007 ; 62:1039-42.
6. Bisguard H, Le Roux PB, JamerD, Dymec A,Vermenten JH.Budesonise / Formoterol maintenance plus reliever therapy, a new strategy in paediatric asthma.Chest 2006; 130: 1733-43
7. Anonymous. Global strategy for asthma management and prevention Updated.2010. www.ginaasthma.org (last accessed 20.03.2012)

*EDITORIAL*

# Laser in medical Science

*LASER*, the world wide famous and familiar term originated as an acronym for –"*L*ight *A*mplification by *S*timulated *E*mission of *R*adiation"(Scalpel of light)[1,2]. A **laser** is a device that emits light (electromagnetic radiation) through a process of optical amplification based on the stimulated emission of photons.

In modern usage Light broadly denotes not only the visible one but also the electromagnetic radiation of any frequency. A Laser which produces light by itself is technically an optical oscillator rather than an optical amplifier as suggested by the acronym. It has been humorously noted that the acronym LOSER, for "Light oscillation by Stimulated Emission of Radiation" would have been more correct.[3]

Laser was first introduced to the world in the 1960s and described as "a solution looking for a problem".[4] It was concurrently invented in the USA by Charles Townes, Arthur Schawlow, Gordon Gould and Theodore Maiman and in the USSR by Alexander Prokhorov and Nikolay Basov.

In 1957, at Columbia University, graduate student Gordon Gould was working on a doctoral thesis about the energy levels of excited thallium. When Gould and Townes met, they spoke of radiation emission, as a general subject; afterwards, in November 1957, Gould noted his ideas for a "laser", including using an open resonator (later an essential laser-device component).

During its primitive beginnings, the laser was used in a number of odd and amusing projects, one, in 1969, saw the laser being shone at the moon! The light beam was shone at the moon and reflected back from a reflector placed on the moon's surface by United States astronauts in the U.S. Apollo program. Scientists were able to calculate the round-trip journey time of the laser's pulse as a means of measuring the distance between the earth and the moon.

Now a days, We use lasers in CD players, in cutting and welding, in the construction of metal parts, for marking targets militarily, for missile defense and the guidance of ammunition. Law enforcement uses lasers for fingerprint detection and for forensics; lasers have been used in scanners, thermometers in the production of holograms and for entertainment purposes in laser light shows and what not.

When it concerns Medical science, various types of lasers are being used in medical diagnosis, treatment and therapy known as Laser Medicine. The world of laser surgery has also grown and grown, with procedures like snoring treatment more popular than ever. Cosmetic laser surgery did not begin to exist the way we know it today until some 30 years later in the 1990s, but even in that short space of time, things have been dramatically changed.

Types of lasers used in medicine include in principle any laser design, but especially $CO_2$ lasers , diode lasers , Nd: YAG Lasers, KTP-532 Lasers, dye lasers ,excimer lasers ,fiber lasers, gas lasers, free electron lasers, optical parametric oscillators.

In 1964, the carbon dioxide laser (the $CO_2$ laser) was invented in the USA by Kumar Patel. The $CO_2$ laser is one of the highest-powered and most efficient lasers that are currently available, and is one of the most useful tools in a variety of medical, surgical, industrial and military applications It has its applications in ENT, gynecology, dermatology, oral surgery, and pediatrics .CW rhodamine dye laser near 590 nm ,one typically used laser in early medical laser systems, delivered via a fiber photodynamic therapy to treat cancer.

It is evident that lasers are used in a variety of arenas and professions but the most fascinating and innovative is in the medical world. Doctors and surgeons are able to utilize the laser to achieve précised surgical procedures during bloodless surgeries, to remove kidney stones and to eliminate problems troubling a majority of people from snoring, to varicose veins treatment, acne, skin blemishes angioplasty.[5] cancer diagnosis[6] and treatment,[7] lithotripsy, mammography,[8] medical imaging,[9] microscopy, phono-surgery, ophthalmology (includes Lasik and laser photocoagulation), optical coherence tomography, prostatectomy surgery and unwanted body hair and tattoo removal[10]

The surgical laser can augment and, in many instances, even replace traditional instruments and methods. The primary determinants of laser effect on tissue are: Wavelength, Tissue type, Power density, Exposure time. As is the case with any other surgical instrument, no one should use the surgical laser or any other medical laser without specific training in both medical laser use and laser safety .Laser can do damage in biological tissue both to the eye and to the skin ,due to several mechanism.[11]

There are some benefits of the Laser Surgery for Clinician & also for patients. Improved visibility of the surgical field and reduction of procedure time by sealing capillaries and small blood vessels as it cuts, vaporize, of the tissue and coagulate at the same time. This dramatically reduces bleeding, resulting in a much drier and clearer surgical site. There is also Pinpoint accuracy, control and increased surgical capabilities as this opens up the possibility of expanding the clinician's surgical repertoire to include procedures that are not practical with conventional scalpel-based techniques.

The laser seals lymphatic's and nerve endings as it cuts, resulting in less edema and pain that leads to a more comfortable post-operative recovery. $CO_2$ laser surgery is a "no touch" technology so it reduced risk of infection .The laser beam kills bacteria in its path, producing a sanitizing effect. Laser surgery, often allow the patient a more rapid return to normal activities.

Now we know, the laser has been used in opening up a variety of avenues in the science world that were previously unimaginable. Today, the laser has risen from its humble beginnings as a solution seeking problem and has become an integral part of our society.

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## References

1. Gould, R. Gordon . The LASER, Light Amplification by Stimulated Emission of Radiation. In: Franken PA. and Sands RH. eds.. The Ann Arbor Conference on Optical Pumping, the University of Michigan, 1959;128.
2. "laser". Reference.com.Chu, Steven; Townes, Charles . Arthur Schawlow. In: Edward PL ed,. Biographical Memoirs. vol. 83. National Academy of Sciences. 2003;202.
3. Charles H. Townes. The first laser. In: Laura Garwin and Tim Lincoln. A Century of Nature: Twenty-One Discoveries that Changed Science and the World. University of Chicago Press. 2003;107–12.
4. Costela A, Garcia-Moreno I, Sastre R. Medical Applications of Dye Lasers. In: Duarte FJ. Tunable Laser Applications.2nd ed. 2008; 227–44.
5. Duarte FJ . Broadly Tunable External-Cavity Semiconductor Lasers. In: Duarte FJ. Tunable Laser Applications. 2nd ed. 2008;143–77.
6. Goldman L. Dye Lasers in Medicine. In: Duarte FJ; Hillman LM. Dye Laser Principles. Boston:1990;. 419–32.
7. Carroll FE. Pulsed, Tunable, Monochromatic X-rays: Medical and Non-Medical

Applications. In: Duarte FJ. Tunable Laser Applications 2nd ed. 2008; 281–310.
8. Orr BJ; He Y; White RT. Spectroscopic Applications of Pulsed Tunable Optical Parametric Oscillators. In: Duarte FJ. Tunable Laser Applications. 2nd ed. 2008;15–96.
9. Thomas JL, Rudolph W. Biological Microscopy with Ultrashort Laser Pulses. In: Duarte FJ. Tunable Laser Applications. 2nd ed. 2008; 45–80.
10. Popov S. Fiber Laser Overview and Medical Applications. In: Duarte FJ. Tunable Laser Applications. 2nd ed. 2008; 197–226.
11. Safety of Laser Product Post 1:Equipment classification and requirements. 2nd ed. International Electro technical commission. 2007.

# INFORMATION FOR THE CONTRIBUTORS

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three and add *et al).* Akhter A, Haque R, Kholil M, Sultana Z, Fakir MAH. Effects of Oral Garlic on Testicular Micro-architecture of Adult Rat. Osmani Med Teachers Assoc J 2002; 1(1): 1-3.

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

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

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

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

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

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

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

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

**12. Online version** JQ. History of clinical m 1999; 100: 123-345. [Online]

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

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