

OESOPHAGEAL CARCINOMA : TRENDS AND RISK FACTORS IN RURAL BANGLADESH

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Abstract

On a worldwide basis, cancer of esophagus is the sixth most common malignancy. In developing countries it ranks third in frequency and has one of the worst prognoses of any neoplasm of the human body. It is essential to detect the malignancy early and to determine the extent of the disease to ensure the best option for a cure. The aim of this study was to evaluate the frequency and pattern of Oesophageal carcinoma with respect to age and sex groups and to determine the trends of histology, site distribution and risk factors of Oesophageal carcinoma. A prospective study was carried out in 102 patients with Oesophageal carcinoma between May 2007 and April 2010 in Laxmipur, Feni & Kushtia district. The data were recorded in prestructured proforma and analyzed later on. The site of tumor was classified as upper, mid & lower esophagus. A high frequency of cancer was seen in males with a total of 79 (77.5%) cases as compared to 23 (22.5%) females with male to female ratio of 3.43:1. Maximum number of the patients of Oesophageal carcinoma was seen in 5th and 6th decades of life. Dysphagia was the main presenting complain in 94.11 % of patients. Tobacco & betel nut chewing are strong risk factors for Oesophageal cancer. Squamous cell carcinoma was the most common malignancy seen in (97) 95.1% of patients. The remaining (5) 4.9% had Adenocarcinoma. Most of the Oesophageal carcinoma 49 (48.04%) were located in the lower third of esophagus followed by middle third 41 (40.19%).

Key words: Oesophageal carcinoma, Risk factors, Trends of disease.

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Introduction:

Oesophageal cancer is the sixth most common cancer in the world, especially in the Asian population; and is the third most common gastrointestinal cancer^{1,2}. The world wide incidence of Oesophageal carcinoma has been rising rapidly over the past few decades. Approximately 13,000-15,000 of cases have been reported annually in USA alone³. In some region of the world like Iran, China and ex USSR the incidence is as high as 100/100,000 cases. In South East Asia the incidence is about 10-50 / 100,000 and the West including USA has low incidence of about <10/100,000^{4,5}.

Oesophageal cancer is one of the most common cancer with a high mortality and male : female ratio is about 3:1^{6, 7}. In majority of cases, due to advanced stage of the disease remedial treatment cannot be undertaken at the time of diagnosis. Consequently the overall 5 years survival rate is only 13%^{3, 7, 8}.

Over the past 25 years, the incidence of Oesophageal adenocarcinoma has shown a

dramatic increment in several populations particularly among the western people. The highest reported increment is 10% per annum from USA^{6,9}. But other parts of the world including Pakistan & India, squamous cell carcinoma is the predominant histology^{4,10}.

Early detection of this malignancy, as well as knowing the extent of spread of the disease ensures the option for a cure. For early detection of Oesophageal microcarcinomas, recent advances in endoscopic techniques, such as high-resolution magnification endoscopy and narrow-band imaging (NBI) have an important role³.

Considering the serious and fatal nature of Oesophageal cancer and its prevalence in our population along with the importance of its early diagnosis in the initial stage to increase the survival period of the patient, we aimed to proceed in regard to these factual observations

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so that this study should be an incentive and beginning of our future perfect study. No such study was carried out in our country on previous days.

Methods:

A prospective study was carried out in 102 patients with Oesophageal carcinoma from May 2007 to April 2010 in Laxmipur, Feni and Kushtia districts in Bangladesh. Age, gender, clinical presentation, risk factor, duration of illness and tumor location were recorded in prestructured proforma. The site of tumor was classified as upper, mid and lower esophagus based on the distance between the cricopharynx and the esophagogastric junction. When the tumor extended beyond one segment, the centre of the lesion was taken as the point of reference.

Gastric carcinoma infiltrating the esophago-gastric junction and those with obstructed oesophageal lumen (as there was no scope for dilation in district centers) were excluded from the study.

Results:

The data of the 102 patients with Oesophageal carcinoma were analyzed. The results has been showed in the following tables :

Table-I
Sex distribution of patients (n=102):

Sex	No. of patients	Percentage
Male	79	77.5%
Female	23	22.5%

M:F 3.43:1

Table II
Showing age distribution of patients (n=102)

Age in yrs	No. of patients	Percentage
<40 Yrs	0	0
40-50 yrs	24	23.5%
51-60 yrs	40	39.2%
61-70 yrs	33	32.3%
>70 yrs	5	4.9%

Table III
Showing Risk factors of patients (n=102):

Smoking	Betel leaf/ Nut	Tobacco chewing	Tobacco + Betel leaf / Nut	Pickled food	Alcohol
85 (83.2%)	90 (88.2%)	76 (74.5%)	86 (84.3%)	30 (29.4%)	2 (1.9%)

Table IV
Showing Clinical Presentations (n=102)

C/F	No. of patients	Percentage
Dysphagia	96	94.11%
Weight loss	98	96.07%
Odynophagia	04	3.92%
Cough on deglutition	15	14.7%
Hoarseness of voice	05	4.9%
Retrosternal Pain	05	4.9%

Table-V
Showing Histology of Oesophageal Carcinoma:

Histology	No. of Patients	Percentage
Squamous Cell Carcinoma	97	(95.1%)
Adenocarcinoma	5	(4.9%)

Table VI
Showing tumor location

Squamous cell carcinoma(n=97)		
Location	No. of patients	Percentage
Upper third	12	(12.4%)
Middle third	41	(42.2%)
Lower third	44	(45.4%)

Adenocarcinoma (n=5) found in lower third (4.9%)

Discussion:

Oesophageal cancer is one of the most deadly forms of malignancy of gastrointestinal tract. The incidence of Oesophageal carcinoma varies according to geographical locations ⁷. High-incidence regions, where rate may exceed 100

per 100,000 populations include northern China, northern Iran, areas of north and east of the Caspian Sea and parts of South Africa. In high incidence areas the incidence between male and female are nearly equal¹¹. But in low incidence region such as in United States and parts of Europe, there is significant predilection for males. It was reported that the incidence rate in male is higher than that of female. There is an approximate 3:1 male predominance in Oesophageal cancer incidence⁶. A study at China⁷ reported the male to female ratio to be 5.5:1. During the period between 1968 and 2002, it was observed in Singapore that male: female ratio had changed significantly from 2.7:1 to 4.5:1 for all Oesophageal cancer¹². Our study showed the overall male: female ratio was 3.43:1.

The incidence of Oesophageal carcinoma is very low in those under 40 years of age, but it increases in succeeding years of life. In our study, maximum number of the patients of Oesophageal carcinoma was seen in 6th (51-60yrs) decade of life followed by 7th and 5th decades. This study is consistent with the findings by Bukhari et al⁴ and Cherian et al¹⁰.

The most common presenting symptoms of Oesophageal cancer are dysphagia and weight loss. This is usually a reflection of partial or total luminal obstruction. Odynophagia, cough on deglutition, retrosternal pain, melena and hoarseness of voice are less common symptoms.⁶ Dysphagia (94.1%) and weight loss (96%) were the main symptoms in our study as most of patients were presented with advanced stage of the disease. All the patients with these symptoms should be thoroughly investigated to rule out carcinoma esophagus, particularly in this region as prognosis highly correlates with staging.

The incidence of Oesophageal cancer varies considerably with geographic location and also to some extent, among ethnic groups within a common area. The geographical variation of Oesophageal carcinoma strongly suggests some environmental factor related with the occurrence of the disease. In Linxian, Hunan province, China, Oesophageal cancer is endemic and has been directly related to

nitrosamines⁶. In the western world the incidence is less, although rates are higher for African Americans. In the West, there is less impact from dietary factors, such as nitrosamines, due to different food preservation techniques, & the primary etiology of Oesophageal cancer is the use of tobacco and alcohol, which have a synergistic effect¹³. Tobacco exposure has been linked to a tenfold higher risk for Oesophageal squamous cell carcinoma in heavy smokers relative to nonsmokers, and the risk is directly related to the duration of exposure^{6,14}. In our study, tobacco & betel leaf or nut users were 84.3% of total patients. Pickled food users were 29.4%. These results are in favour of the above findings.

In the present study, lower Oesophageal cancer appeared to be the commonest site of Oesophageal malignancy. The findings are in well conformity with the observation by Cherian JV et al in India¹⁰. In New Zealand, about two thirds of the squamous cell carcinoma were evenly distributed in the lower two thirds of the esophagus¹⁰, while Zhang et al in China found that squamous cell carcinoma of esophagus were located mainly at the middle of the Oesophagus & most the of adenocarcinoma of esophagus were located at the lower Oesophagus⁷.

In this study, out of 102 patients, squamous cell carcinoma was found to be commonest cancer (95.1%) followed by 4.9% cases of adenocarcinoma. Our results are in well conformity with the findings of Bukhari et al at Pakistan⁴, Cherian et al in India¹⁰ and Parvin et al in Iran⁸. This is in contrast to reports of an increasing incidence of adenocarcinoma from several countries particularly at western hemisphere⁶. Reports from Asian counties, such as Singapore and China have shown a decline in incidence of squamous cell carcinoma^{10,12}. These observations are not surprising since erosive reflux disease is rare in this part of the world¹⁵ and obesity as a risk factor is not of major concern. The recent increase in number of Oesophageal adenocarcinoma in China and Singapore has shown a parallel rise in incidence of more severe forms of gastro

Oesophageal reflux disease, though squamous cell carcinoma continues to be the most common malignancy^{7,12}.

This study was a preliminary investigation. The aim of this present analysis was to collect baseline data so that further work may be done on the etiopathogenesis and management of this common malignancy.

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