

Oesophageal Cancer and its Clinico-Pathological Pattern: Study in a tertiary level Hospital, Dhaka, Bangladesh

Dr. Md. Iftakhar Alam¹, Dr. Md. Abu Bakar Siddiq Faysal², Dr. Muhammad Mehedi Hasan³, Dr. Dipannita Biswas⁴, Dr. Joyanti Rani Debnath⁵, Dr. Biplab Kumar Barman⁶, Dr. Md. Kamrul Hasan^{7*}

¹Registrar, Department of Surgery, Holy Family Red Crescent Medical College Hospital, Dhaka, Bangladesh

²Junior Consultant, Department of Surgery, Cumilla Medical College Hospital, Comilla, Bangladesh

³Assistant Registrar, Department of Thoracic Surgery, Dhaka Medical College Hospital, Dhaka, Bangladesh

⁴Indoor Medical Officer, Department of Thoracic Surgery, Dhaka Medical College Hospital, Dhaka, Bangladesh

⁵Junior Consultant, Department of Surgery, Cumilla Medical College Hospital, Comilla, Bangladesh

⁶Junior Consultant, Department of Surgery, Cumilla Medical College Hospital, Comilla, Bangladesh

⁷Junior Consultant, Department of Surgery, Maligaon 50 Bedded Hospital, Daudkandi, Comilla, Bangladesh

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*Corresponding author: Dr. Md. Iftakhar Alam

Abstract

Original Research Article

Background: Oesophageal cancer is one of the most serious gastrointestinal cancer worldwide, owing to its rapid development and fatal prognoses in most cases. There is a paucity of published data regarding esophageal cancer the study area in particular. **Methods:** This Descriptive-longitudinal study was done Department of Surgery Dhaka Medical College Hospital, Dhaka, Bangladesh during August 2015 to February 2016. A total of 50 oesophageal cancer patients between 30-70 years of age attending Thoracic Surgery department of Dhaka Medical College Hospital during the last 6 months were included in this study. Exclusion criteria were Patient/attendant and unwilling to give informed consent to take part in the study and Patient with economic constraints to do the necessary investigations Collected data were classified, edited, coded and entered into the computer for statistical analysis by using SPSS version 22. **Results:** Among the 50 cases, mean age was 52.92(±10.60) years, minimum age was 30 years and maximum age was 80 years. Maximum 76% were male and 24% were female, male: female ratio was 3.17: 1. Common clinical staging (TNM) of the oesophageal cancer, T2 disease was 58% followed by T3, 26% and T1, 6%. Considering nodal status most of the cases were NO, 60% with N1, 24% and N2, 16%. Regarding metastasis, only 18% cases had evidence of metastasis. **Conclusion:** Predominant personal history was smoking, white tobacco chewing, betel nut, betel leaf and alcohol consumption. Most of the oesophageal cancers were middle and lower third. Majority of oesophageal cancers were squamous cell carcinoma of different grades. Regarding TNM staging most of the oesophageal cancers were T2 disease.

Keywords: Oesophageal Cancer; Gastrointestinal; Adenocarcinoma; Epithelial.

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1. INTRODUCTION

Esophageal cancer is the 8th most common cancer worldwide with 4, 82,000 new cases in 2008 and the 6th most common cause of death from cancer, 4,06,000 deaths [1]. It is characterized by rapid development and fatal prognosis in most cases. The occurrence increases with age with the highest incidence in the age group 50-70 years [2]. The epidemiology of esophageal cancer differs markedly from other epithelial cancers. There is huge variation in incidence worldwide with greater than 100-fold differences observed between high incidence areas such as China and Iran and low incidence areas of western Africa [3]. These wide variations in incidence are often

observed in close geographical proximity [4-6]. Male to female incidence rate ratios also varies widely with ratios greater than 20: 1 in France to near equality or even excess female cases in high incidence areas of Iran [4, 7]. Worldwide, a higher incidence of esophageal cancer is seen in men with an average 3-4-fold increases rate for squamous cell carcinoma and a 7 -10 fold increased rate for adenocarcinoma compared to women [8]. There are some changeable and unchangeable risk factors for esophageal cancer. Unchangeable risk factors include age, sex and hereditary factors such as Tylosis and Plummer Vinson syndrome [9, 10]. Development of esophageal cancer is frequently and associated with changeable risk factors

such as chronic exposure to stimulants, hot beverages, alcohol, and smoking with higher incidence in societies of low socioeconomic status, severe malnutrition, low vitamin, fruit and vegetable intake [11]. The peak age of incidence of squamous cell carcinoma is in the sixth decade although adenocarcinoma appears to be commoner in males under 40 [12]. There is racial variation in the histological types with predominance of squamous cell carcinoma in black, which is over 90% of all esophageal cancers in Africa. The middle third is the commonest site for squamous cell carcinoma and the lower third is the commonest site for adenocarcinoma [13, 15]. Adenocarcinoma is predominant in western countries [16]. Over the past 25 years, the incidence of adenocarcinoma has shown a dramatic increment in western population. The highest increment is 10% per annum from USA [21, 22]. But in other parts of the world including Pakistan and India, squamous cell carcinoma is predominant [23, 24].

The esophagus is a muscular tube measuring 20-25 cm long and 2-3 cm wide, after traversing the diaphragm at the hiatus, it extends through the gastro-esophageal junction to end at the gastric cardia [17]. Significantly the esophagus is inaccessible to clinical examination. Clinical diagnosis of an esophageal lesion is thus based on symptoms and imaging studies, it starts innocuously in the mucosa as a painless lesion and progresses to advanced lesion before symptoms are apparent. The most common presentation is progressive dysphagia. The esophagus is capable of accommodating the initial obstruction because it lacks a serosal layer which allows the smooth muscle to stretch. As a result, when patient presents, there is almost 50 -60% luminal obstruction [18]. As most patients present at advanced stage, mortality is very high and even with operable tumors, postoperative mortality is 50% [19]. The symptoms usually appear 3 to 4 months prior to diagnosis and vary on the segment initially involved. Dysphagia is the most common in more than 90% cases and weight loss in over 5-10% cases [20]. Less common symptoms such as hoarseness, cough and progressive lesions with invasion to other organs result in hematemesis, hemoptysis, dyspnea and cough secondary to Broncho esophageal and tracheoesophageal fistula [20].

The clinical stage of the disease at presentation is important for the outcome. However, outcome has been poor in our environment because of late presentation with advanced disease when only palliation is possible.

2. OBJECTIVE

To describe the clinic-pathological pattern of esophageal cancer to aware community of the importance of early reporting to hospital for early diagnosis and treatment to improve patient survival and morbidity.

3. METHODS

This Descriptive-longitudinal study was done Department of Surgery Dhaka Medical College Hospital, Dhaka, Bangladesh during August 2015 to February 2016. A total of 50 oesophageal cancer patients between 30-70 years of age attending Thoracic Surgery department of Dhaka Medical College Hospital during the last 6 months were included in this study. Exclusion criteria were Patient/attendant unwilling to give informed consent to take part in the study and Patient with economic constraints to do the necessary investigations. The patients were interviewed face to face by researcher of this study for the purpose of collection of data. Then the patients were examined by the researcher for certain signs and those were recorded in the check-list. The investigations used for collecting data were endoscopy with endoscopic biopsy, barium swallow x-ray of oesophagus, CT scan of chest and upper abdomen, chest x-ray, Ultrasonogram of whole abdomen etc. Collected data were classified, edited, coded and entered into the computer for statistical analysis by using SPSS version 22.

Inclusion Criteria

- Clinical-pathological pattern of esophageal cancer.
- Patients aged between 30-70 years

Exclusion criteria

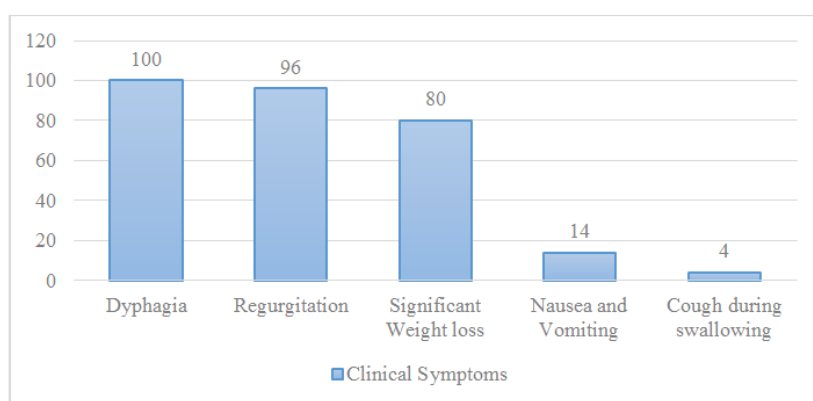
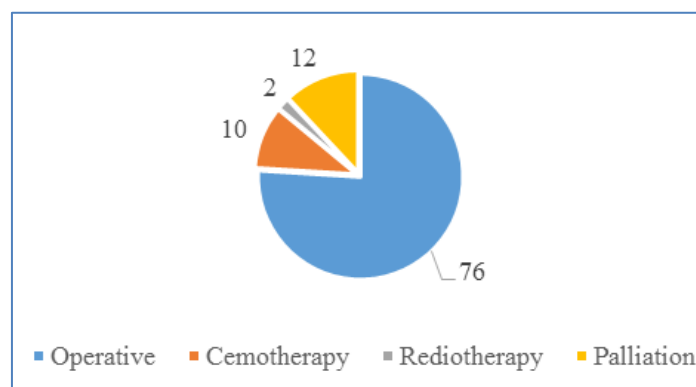
- Age <30 years or > 70 years
- Severely ill patients
- Participants unwilling to share necessary information

4. RESULTS

Table 1 shows mean age was 52.92(±10.60) years, minimum age was 30 years and maximum age was 80 years. Figure 1 shows common clinical presentations were dysphagia, regurgitation, significant weight loss and nausea and vomiting with percentages of 100%, 96%, 80% and 14% respectively. Common clinical staging (TNM) of the oesophageal cancer, T2 disease was 58% followed by T3, 26% and T1, 6%. Considering nodal status most of the cases were NO, 60% with N1, 24% and N2, 16%. Regarding metastasis only 18% cases had evidence of metastasis.

Table-1: Age distribution of the study population (n=50)

Age Distribution	n=50	%
30 years to 39 years	05	10.0
40 years to 49 years	07	14.0
50 years to 59 years	25	50.0
60 years to 69 years	09	18.0
> 70 years	04	08.0
Total	50	100.0
Mean \pmSD	52.92(\pm10.60)	Range 30-80 years

**Fig-1: Clinical symptoms of the study population (n=50)****Fig-2: Treatment options of the oesophageal cancer of the study population (n=50)**

5. DISCUSSION

This study was held in the Department of Thoracic surgery of Dhaka Medical College Hospital, Dhaka and after approval of protocol. This is a descriptive longitudinal study of the patients attending with history of carcinoma of the esophagus. The cases were referred to thoracic surgery department from several departments of the same institute and also from other institutes. The departments from which the patients were referred are radiotherapy, gastroenterology, medicine, surgery etc. In present study mean age was 52.92(\pm 10.60) years, minimum age was 30 years and maximum age was 80 years. Maximum 76% were male and 24% were female, male:

female ratio was 3.17: 1. Similar finding was found in several studies. In study of showed the mean age for SCC was 60 years with range from 23 to 100 years; while the mean age for ADC was 65 years; age range being 27 - 90 years.²¹ In study of the age of patients at presentation ranged from 24 to 78 years with a median age of 47 years. The modal age group was 41 to 50 years; 158 (48.2%) patients were aged 50 years or below [22]. There were 226 (68.9%) men and 102 (31.1%) women with a male to female ratio of 2.2: 1. The male to female ratio of EC was slightly similar to that reported in several literatures [23, 24]. Some reports documented high male prevalence with male to female ratio 3:1 and 4:1.7 [25]. This study shows that EC was exceedingly rare before the age of 30 and the mean age

was around 62 in both males and females. Ali *et al.* from Pakistan reported early mean age of 42 years in males and 53 years in females [26].

Showed socio-economic status of the study population, majority 48% were of lower middle class and 40% were of lower class. Some Study showed globally, esophageal cancer has been reported to be more prevalent in people with low socioeconomic status [23]. Socioeconomic class appears to be an independent risk factor in the development of esophageal cancer. In this study showed common clinical presentations were dysphagia, regurgitation, significant weight loss and nausea and vomiting which were 100%, 96%, 80% and 14% respectively. Some study supported our result, they showed all the patients presented with progressive dysphagia (graded) and weight loss (100%); 249 patients (75.9%) presented with regurgitation [24].

Present study showed common personal history were smoking, white tobacco chewing, betel nut, betel leaf and alcohol consumption which were 66%, 20%, 92%, 92% and 10% respectively like tobacco consumption, alcohol use is a major cause of ESCC in western countries [25-27]. In the West, alcohol intake is associated with a dose-response increase in ESCC risk, and heavy consumption increases risk by 5 - 15 fold [28]. In linxian, alcohol consumption is associated with a mild decrease in ESCC risk [29], possibly due to the fact that alcohol consumption in linxian is very limited and it may be associated with higher socioeconomic status. In Golestan Province, alcohol consumption is rare, especially among rural residents, and it is unlikely to be a major cause of ESCC [30]. This study showed anatomical site of oesophageal cancer, 48% were middle and lower third oesophageal cancer each. Our finding is at variant with other studies, which reported the distal third of the esophagus as the most common site for esophageal cancer [31].

Limitations of the study

The study has some limitations which are as the study was conducted upon a small size of population which is too small to conclude over this commonest and burning issue and the study was conducted in a very limited area to represent. More extensive investigations could not be done due to lack of resources which would produce more informative study. The study time was very limited to represent as overall result.

6. CONCLUSION

In conclusion, oesophageal cancer is one of the most serious gastrointestinal cancer worldwide, owing to its rapid development and fatal prognoses in most cases. The present study is done to highlight the increasing incidence of oesophageal cancer in the population. Most of the oesophageal cancers were in the middle and lower third of oesophagus. Majority of the oesophageal cancers were squamous cell carcinoma of

different grades. Regarding TNM staging, most of them cancer was T2 disease.

7. RECOMMENDATIONS

Large scale, multicenter study should be conducted to get the significant result.

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