MAK HILL Publications Research Journal of Medical Sciences

Research Article
doi: 10.36478/makrjms.2024.4.528.531

Descriptive Study of Oesophageal Carcinoma: An Institutional Retrospective Study

[1]V. Naveen Raj, [2]S.D. Mandolkar, [3]Syed Shahid Irfan and [4]Ramakrishna

[1-4]Department of General Surgery, Raichur Institute of Medical Sciences Rims Raichur, India

Abstract

Oesophageal cancer is a serious malignancy with regards to mortality and prognosis. Squamous cell carcinoma is the most common histological type of oesophageal cancer worldwide with a higher incidence in developing nations. Having such poor prognosis, it is significant to understand various patient and tumour facts related to treatment outcome of oesophageal cancer, which varies regions wise. The present retrospective study also seeks to focus on current description of patterns and trends of tumours in endoscopically detected oesophageal cancer patients attended in a tertiary care hospital in a southern state of India. Records of oesophageal carcinoma patients over a period of 7-years were reviewed retrospectively. Histopathological reports of Oesophageal tumours are retrospectively collected from pathology department. These records were analysed for age, sex and location of tumours. Among the Total of 76 endoscopically detected oesophageal, most prevalent age group was men older than 40 years. In terms of anatomical site, the middle third of oesophagus had 46 cases, the lower third had 21 cases and the upper third had 9 cases. Squamous cell carcinoma is the most common oesophageal carcinoma in our institution. Majority of the lesions are located in the middle and lower third of oesophagus and are well differentiated. Despite its high prevalence in north India and poor survival rate, less initiative has been taken to increase awareness in preventing these oesophageal cancers. Understandings of socio-demographic patterns and tumour characteristics by early endoscopic biopsy may improve treatment outcome in these patients and improve quality of life. Further studies are needed in different regions of India, to get more treatment options which may convert the current scenario of palliative intent in to radical one in patients of oesophageal carcinoma.

OPEN ACCESS

Key Words

Upper gastrointestinal endoscopy, gastrointestinal symptoms, therapeutic and diagnostic tool

Corresponding Author

Ramakrishna,
Department of General Surgery, Raichur Institute Of Medical Sciences Rims Raichur, India
navefoxx@gmail.com

Author Designation

[1]Post Graduate Third Year
[2-4]Professor and HOD

Received: 20 March 2024
Accepted: 22 April 2024
Published: 10 May 2024

Citation: V. Naveen Raj, S.D. Mandolkar, Syed Shahid Irfan and Ramakrishna, 2024. Descriptive Study of Oesophageal Carcinoma: An Institutional Retrospective Study. Res. J. Med. Sci., 18: 528-531, doi: 10.36478/makrjms.2024.4.528.531

INTRODUCTION

Oesophageal carcinoma is the eighth most common cancer and the sixth most common cause of cancer-related deaths worldwide with developing nations making up more than 80% of total cases and deaths. Despite many advances in diagnosis using endoscopy and treatment, the 5-year survival rate for all patients diagnosed with oesophageal cancer ranges from 15-20%. In India, oesophageal cancer is the most common malignancy involving the gastrointestinal tract in Karnataka, Tamil Nadu, Kerala and Assam.

The majority of oesophageal cancers can be subdivided into two main histological subtypes: adenocarcinomas (AC) and squamous cell carcinomas (SCC). Whereas adenocarcinomas typically develop in the lower third of the oesophagus, Squamous cell carcinoma occurs mostly in flat cells lining the upper two-thirds of the oesophagus and is associated with smoking and alcohol use.

Precursor lesions includes Barret's esophagus, Low grade dysplasia, High grade dysplasia and intra-mucosal adenocarcinoma. Endoscopic biopsy of the lesions provide most accurate diagnosis.

National guidelines recommend surveillance endoscopy once in 3 years for Barrett's oesophagus. This resulted in early diagnosis of adenocarcinomas and squamous cell carcinoma.

Since the prognosis in oesophageal carcinoma is extremely poor, early detection by endoscopy can lead to a better understanding of the aetiology/risk factors and also may suggest opportunity for its primary prevention

Overall survival of patient with oesophageal cancer is poor because majority of esophageal cancer that present with symptoms have invaded muscularis propria or have already spread to local lymph nodes. Hence the stage at which esophageal cancer is detected is the most important factor in prognosis. Endoscopy plays a major role in diagnosing oesophageal carcinoma at initial stages.

The current study aimed to provide an up-to-date overview of the burden and risk factors of oesophageal carcinoma diagnosed by endoscopy. In considering the availability and comparability of data, we conducted our retrospective analysis using data from UGI endoscopy and histopathology department. We investigated the factors for oesophageal carcinoma including age, sex, location of tumour, histopathological subtypes to strategies for health promotion.

MATERIALS AND METHODS

A retrospective study was conducted among 750 subjects who underwent upper GI endoscopy in department of General Surgery from August 1 2016 to July 31 2023. Data was collected retrospectively from endoscopy register and HPE reports respectively from General surgery and Pathology department. Study was approved by institutional ethics committee. Data including age, sex distribution and endoscopic findings of location of oesophageal tumours and histopathology reports were used to confirm diagnosis in cases of malignancies.

Data was entered in the excel spread sheet. Data was analysed using SPSS software (Statistical Package For Social Sciences). Frequency and percentage of each variable were calculated and same was depicted as graphs, tables and pie chats. The level of significance was set at 5%.

Inclusion Criteria:

- All patients in whom upper GI endoscopy was performed.

Exclusion Criteria:

- Patients less than 15 years of age.
- Patients in whom endoscopy was inconclusive.

RESULTS AND DISCUSSIONS

Among the Total of 86 endoscopically detected tumours, 76 cases were oesophageal and 10 cases were gastric. Among these most prevalent age group was men older than 40years. In terms of anatomical site, the middle third of esophagus had 45 cases, the lower third had 21 cases and the upper third had 10 cases. Squamous cell carcinoma is the most common oesophageal carcinoma in our institution. Majority of the lesions are located in the mid and lower oesophagus and are well differentiated.

Esophageal carcinoma, one of the common malignancies, creates a major concern for the oncologist due to its less curable rate. It is sixth most common cause of mortality constituting 5.5% cancer related deaths worldwide in 2020. In India esophageal cancer ranks fifth in incidence and mortality with 4.8% and 6.9% respectively in 2020. In the last few decades, there is a changing trend in the incidence and pattern of esophageal cancer. In the developed nations of western region, there is a slight decrease in total incidence of esophageal cancer and the main burden has changed from more squamous cell carcinoma to more adenocarcinoma. This change in histopathological patterns attributed to certain factors, like high body mass index, obesity and increase cases of gastro- esophageal reflux disease. Some rare histopathological subtypes like small cell carcinoma, sarcoma, adenoid cystic and mucoepidermoid carcinoma, melanoma and gastro-intestinal stromal tumor also occurred in oesophagus with very less incidence, but clinically these are indistinguishable from typical squamous and adenocarcinoma. Different risk factors, both modifiable and non- modifiable,

Table 1: Sex distribution

Male	Female
45	31

Table 2: Age distribution

Age group	No of cases
0-20 years	2
20-40 years	9
40-60 years	41
60-80 years	23
>80 years	1

Table 3: Based on the location of tumour

Location	No of cases
Upper 1/3rd of oesophagus	9
Middle 1/3rd of oesophagus	46
Lower 1/3rd l'd oesophagus	21

Table 4: Histopathological subtypes

Adeno-carcinoma	Squamous cell carcinoma
7	69

contribute to the development of oesophageal carcinoma., most dreaded of which is smoking. Smoking is a risk factor for both squamous and adenocarcinoma, alcohol added synergistic effect to it., 90% of squamous and half of adenocarcinoma occurs due to excessive smoking. Other modifiable risk factors include chronic exposure to irritants, excessive intake of pickled vegetables, alcohol, soft drinks and spicy foods, obesity., whereas age, gender, genetical predisposition are immutable risk factors.

Progressive dysphagia is most common complaint, leading to considerable weight loss, generalized weakness. Advanced stage diseases may present with neck node involvement, hoarseness of voice, recurrent lung infection due to trachea-esophageal fistula and sometimes even with signs of distance metastasis. Dysphagia for long time leading to poor nutritional status is a major cause for apprehended outcome in most of these patients. At the time of initial presentation, more than half patients presented with metastatic disease, half of the rest have locally advanced disease and less than 20% presented with curable disease. Overall regional nodal involvements in esophageal cancer differ in squamous and adenocarcinoma. Cervical, thoracic and abdominal, all stations can be involved in both histology types depending upon tumor location and stage of primary lesion. Common sites of distant metastasis are liver, lungs and bones. Contrast enhanced computed tomography of thorax and abdomen (CECT) and endoscopic ultrasound (EUS) are the two most common diagnostic modalities having good positive predictive value in assessing accurate T (primary tumor) and N (regional node) stage as well as to guide for biopsy for tissue confirmation., whereas whole body fluorine-18-labelled fluorodeoxyglucose positron emission tomography with computed tomography (PET/CT) scan is mandatory for metastatic work up and post-chemotherapy response assessment.

Management of esophageal carcinoma is a multidisciplinary approach, definitive surgery with or without chemo- radiation therapy remains the curative treatment. Endoscopic resection in very early mucosa-limited lesion showed calculated 5-year survival rate of 98%. For respectable locally advanced lesion, esophagectomy is the mainstay of treatment, choice of transthoracic or transhiatal depends upon surgeon. For unrespectable locally advanced cases, chemo- radiation is the standard of care, it may be followed by radical surgery if possible. Radiation in esophageal cancer should be given with recent more precise techniques like intensity modulated radiotherapy (IMRT), image guided radiotherapy (IGRT) and stereotactic body radiation therapy (SBRT) to spare surrounding normal tissue as much as possible.

Overall, incidence of esophageal carcinoma increases with ages, people in their 6th and 7th decades are more affected with an appreciable male predominance and this was well proved on patients of Indian origin.

However, in developing countries with limited infrastructures like ours, 2-dimensional radiation by cobalt-60 teletherapy machine of dose up to 45 gray (to limit spinal cord tolerance dose) in neoadjuvant cases is also well established. Doublet chemotherapy consists of platinum compounds (cisplatin or carboplatin) and 5-flurourcin or paclitaxel is used as concomitant chemotherapy with radical radiation.

Chemotherapy alone is considered as secondary treatment adjunct to surgery and radiation therapy or in advanced metastatic disease or as salvage therapy in recurrent cases. For advanced and residual diseases, therapeutic trials with combination chemotherapy regimens have been tried. Different combinations of platinum compounds (cisplatin, carboplatin and oxaliplatin), taxanes (paclitaxel and docetaxel), fluoropyrimidines (fluorouracil and capecitabine) irinotecan, methotrexate, ifosfamide (with mesna coverage) and cyclophosphamide has been explored in literature with improve tumor control and increase chances of survival. A few targeted agents like trastuzumab in HER-2 positive adenocarcinoma, ramucirumab and bevacizumab in junctional adenocarcinoma, nivolumab and pembrolizumab in PDL1 (programmed death-ligand 1) overexpressed tumor are well approved therapy with proved benefit. The role of some other targeted therapy like cetuximab, gefitinib and erlotinib, nimotozumab, panitimumab, sunitinib, entrectinib, larotrectinib in advanced, metastatic and recurrent esophageal cancer is evaluated in different studies but yet to established conclusively. Patient with very advanced disease morbid general condition sometimes only require palliative treatment.

Prognosis of esophageal carcinoma in most of the part in world is still very improbable due to advanced stage of disease at presentation and very poor tolerance to radical treatment due to poor nutrition

status. Management of nutritional status is of utmost importance, in order to provide adequate anticancer therapy. Per-enteral nutrition through feeding jejunostomy is often required to provide proper nutrition.

CONCLUSIONS

In this retrospective analysis, male had majority of the cases and squamous cell carcinoma shared the major histological types which is well matched with similar studies done in other parts of India. Other parameters analysed in the study site of primary cancer (middle third more common) are also correlate well with previous Indian studies. The major limitation of this study is its retrospective nature.

REFERENCES

1. 0'Connell, P.R., A.W. McCaskie and R.D. Sayers, 2023. Bailey and Love's Short Practice of Surgery. 28th Edn., CRC Press, Boca Raton, Florida, USA., ISBN-13: 9780367548117, Pages: 1696.
2. Townsend, C.M., B.M. Evers, R.D. Beauchamp and K.L. Mattox, 2021. Sabiston Textbook of Surgery. 21st Edn., Elsevier, Amsterdam, Netherlands, ISBN-13: 9780323640626.
3. Bhattarai, S., 2020. Clinical profile and endoscopic findings in patients with upper gastrointestinal bleed attending a tertiary care hospital: A descriptive cross-sectional study. J. Nepal Med. Assoc., 58: 409-415.
4. Bray, F., J. Ferlay, I. Soerjomataram, R.L. Siegel and L.A. Torre *et al.,* 2018. Global cancer statistics 2018: Globocan estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: A Cancer J. Clinicians, 68: 394-424.
5. Wu, L., J. Wang, X. He, Y. Zhu and X. Jiang *et al.*, 2022. Deep learning system compared with expert endoscopists in predicting early gastric cancer and its invasion depth and differentiation status (with videos). Gastroint. Endosc., 95: 92-103.
6. Fujita, S., 1978. Biology of early gastric carcinoma. Pathol. Res. Pract., 163: 297-309.
7. Menon, S. and N. Trudgill, 2014. How commonly is upper gastrointestinal cancer missed at endoscopy A meta-analysis. Endoscopy Int. Open, 2: 46-50.
8. Pimenta-Melo, A.R., M. Monteiro-Soares, D. Libânio and M. Dinis-Ribeiro, 2016. Missing rate for gastric cancer during upper gastrointestinal endoscopy: A systematic review and meta-analysis. Eur. J. Gastroenterol. Hepatol., 28: 1041-1049.
9. Yao, K., N. Uedo, T. Kamada, T. Hirasawa and T. Nagahama *et al.*, 2020. Guidelines for endoscopic diagnosis of early gastric cancer. Digestive Endoscopy, 32: 663-698.
10. Bisschops, R., M. Areia, E. Coron, D. Dobru and B. Kaskas *et al.*, 2016. Performance measures for upper gastrointestinal endoscopy: A European society of gastrointestinal endoscopy (ESGeE) quality improvement initiative. Endoscopy, 48: 843-864.