

## Original Research Article

# Study on incidence of oesophageal carcinoma in patients undergoing upper gastrointestinal endoscopy for upper gastrointestinal symptoms in a secondary care hospital

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### ABSTRACT

**Background:** Oesophageal carcinoma is one of the leading causes of cancer related deaths worldwide and is also associated with high morbidity. Hence early diagnosis and treatment are the only effective way to improve survival and quality of life in oesophageal carcinoma patients. Early-stage oesophageal carcinoma are often asymptomatic and may also present with common upper gastrointestinal symptoms hence diagnosis of early oesophageal carcinoma is only based on detection of suspicious lesions through endoscopy and histopathological evaluation of biopsies from these suspicious lesions. The study is designed to see whether using alarming upper gastrointestinal symptoms, risk of oesophageal carcinoma in patients can be predicted.

**Methods:** Present study comprises of 200 patients presenting with upper gastrointestinal symptoms at JSS Hospital, Chamarajanagar (both out patients and referred patients) during the period of October 2018 to December 2019, who underwent upper gastrointestinal endoscopy.

**Results:** Out of 200 patients, 135 patients were males and 65 patients were females. According to the study, dysphagia was found to be a significant predictive factor and in contrary to the global statistics this study showed females aged more than 60 years were significantly at higher risk of developing oesophageal carcinoma.

**Conclusions:** We recommend to do an early endoscopy for any patient presenting with upper gastrointestinal symptoms and to take multiple biopsies from any suspicious lesion especially for male gender older than 50 years and female gender older than 60 years presenting with dysphagia.

**Keywords:** Oesophageal carcinoma, Upper gastrointestinal symptoms, Upper gastrointestinal endoscopy

### INTRODUCTION

Oesophageal carcinoma is the eighth most common carcinoma worldwide and sixth most common cause of cancer related mortality.<sup>1</sup> In India it is the fourth most common carcinoma. In the past, squamous cell carcinoma accounted for more than 90% of the cases, but in recent years adenocarcinoma arising in the background of Barrett oesophagus and supply this has become increasingly common. Males have a two to threefold higher overall risk than females and 7 to 10 fold higher risk for developing adenocarcinoma.<sup>2</sup>

Most of the oesophageal carcinomas are usually in the advanced stage at the time of diagnosis and have poor prognosis irrespective of the histopathological pattern.<sup>3</sup> Hence detection of premalignant and early lesions are important to improve the quality of life and survival rate of these carcinoma patients. Upper gastrointestinal (GI) endoscopy with biopsy is the initial cost effective diagnostic method for detecting these lesions.<sup>4</sup> During flexible endoscopy it is important to note the location of the tumour relative to incisors and gastro-oesophageal junction, the length of the tumour and also the degree of obstruction.

We, here have conducted a study, were patients presenting with alarming upper GI symptoms were evaluated with endoscopy to identify the incidence of oesophageal carcinoma thus detecting the diagnostic accuracy of upper GI symptoms in oesophageal malignancy.

The objective of this study was to evaluate the diagnostic accuracy of alarming upper GI symptoms in oesophageal malignancy detection.

## METHODS

This study comprised of 200 patients who presented with upper gastrointestinal symptoms and underwent endoscopy procedure in the JSS Hospital, Chamaraj Nagar from October 2018 to December 2019. Informed consent from patients was obtained both for the procedure as well as for research purpose. After a proper history and good physical examination, patients were subjected to fibre-optic upper GI endoscopy.

The patients with alarm symptoms such as weight loss (10% or more than unintentional and during recent 6 months), dysphagia, GI bleeding (any evidence of hematemesis, melena, hematochesia, anemia), dyspepsia and vomiting were included. The alarming symptoms of each patient were documented. These patients were kept nil per oral for six hours. 10% xylocaine was used as topical spray before the procedure and asked to retain it for 10-15 minutes for local anaesthesia. Endoscopy was carried out by fibre optic flexible esophagogastro-duodenoscopy (Olympus) by placing patient in left lateral position. A mouth guard was used to protect the instrument. Lubricated instrument was passed over the back of the tongue and the endoscope was advanced with clear view of lumen.

During the whole procedure, examination of oesophagus, stomach and duodenum was done to look for abnormal areas in the form of swelling, ulcer, growth, fibrosis, bile reflux, varices and gastroesophageal reflux and were evaluated properly and biopsy was taken from suspicious areas. Before withdrawal of endoscope from stomach, air and gastric contents were aspirated. The whole procedure is recorded by photography and videography for documentation and further follow-up. These biopsy samples were evaluated by an expert pathologist who was blind to both alarming symptoms and endoscopic classification.

## Inclusion criteria

Patients above the age of 16 years with stable general conditions presenting with dyspepsia, dysphagia, odynophagia, nausea and vomiting, pyrosis, occult GI bleeding, cirrhosis, weight loss, anemia (both outpatients and patients referred from other hospitals) were included in this study.

## Exclusion criteria

Pediatric patients <16 years, patients presenting with massive upper GI bleeding, corrosive poisoning, unconscious and unstable patients, patients previously detected with upper GI cancer, anemia due to the chronic disease, dysphagia according to obvious causes, and the patients with intentional weight loss.

## RESULTS

Out of 200 patients, 135 male and 65 female, who presented with upper GI symptoms. After history, clinical examination and upper GI endoscopy and results were found to be the following.

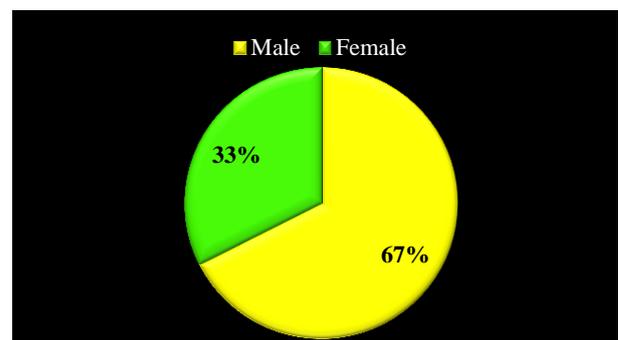


Figure 1: Sex ratio.

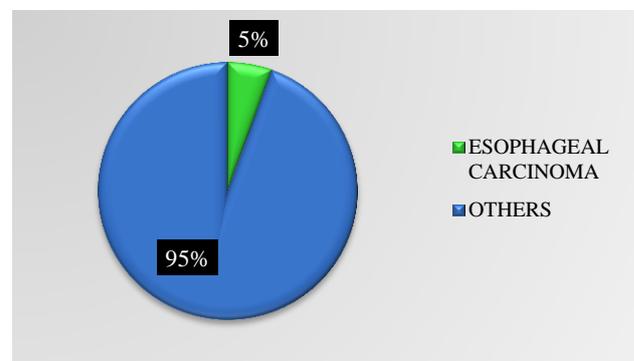
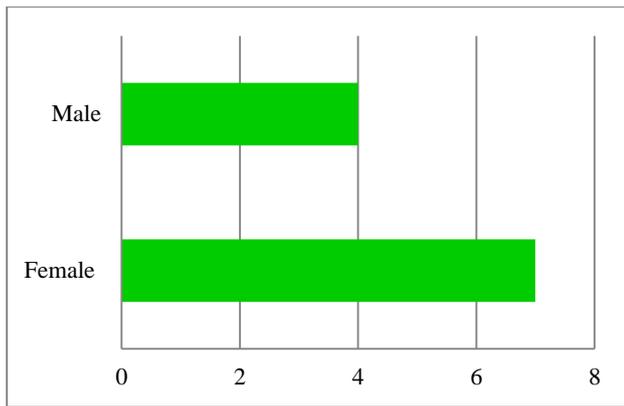


Figure 2: Incidence of oesophageal cancer.

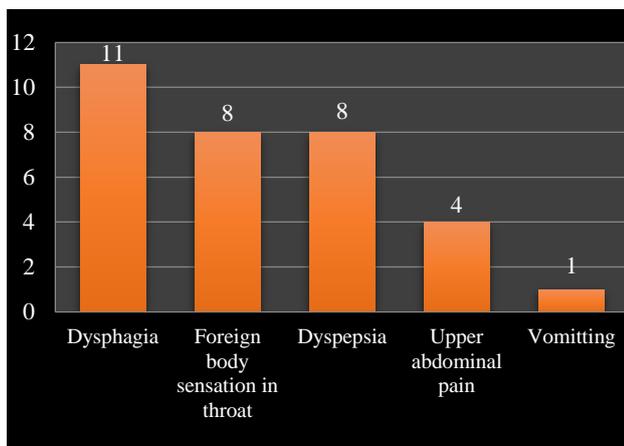
Of the total 200 patients who underwent upper GI endoscopy, 11 patients were diagnosed with oesophageal carcinoma by pathologist.

The mean age of all patients who underwent upper GI endoscopy and who were detected with oesophageal carcinoma was 55 years and 63.9 years respectively.

The commonest and the predominant symptom of the patients diagnosed with oesophageal carcinoma were found to be dysphagia, which was seen in all the patients. Foreign body sensation in the throat was the commonest associated symptom (72.7%), followed by dyspepsia (72.7%), upper abdominal pain (36.3%) and vomiting (0.9%).



**Figure 3: Sex distribution of oesophageal cancer.**



**Figure 4: Frequency of symptoms in oesophageal cancer patients.**

According to our study, it was found that dysphagia is the common presenting symptom of oesophageal carcinoma. The patients aged more than 60 years had significantly higher risk of developing oesophageal carcinoma and in contrary to the world statistics it was common in females.

## DISCUSSION

Endoscopy is the gold standard for providing visual access to the endoluminal space of GI tract for diagnosis and therapeutic purposes. Upper GI endoscopy allows for examination of the oesophageal, stomach and proximal duodenum down to ligament of treitz. General indications for endoscopy include persistent upper abdominal symptoms despite appropriate medical therapy or have associated worrisome symptoms such as vomiting, weight loss, anorexia, dysphagia, and odynophagia. Relative contraindications for endoscopy under conscious sedation include inability to tolerate the procedure or sedation, inadequate patient cooperation, and suspicion of perforated viscus.

In this present study, among the patients who underwent upper GI endoscopy for alarming upper GI symptoms the incidence of oesophageal carcinoma was found to be 5%

with dysphagia being the most common associated symptom.

Oesophageal carcinoma is one of the virulent carcinomas and majority of the patients at the time of diagnosis show distant metastasis, leading to poor prognosis and lower survival rate. Oesophageal carcinoma is seen in two main histopathological patterns: squamous cell carcinoma and adenocarcinoma.<sup>5</sup> In the past, squamous cell carcinoma accounted for more than 90% of the cases, but in recent years adenocarcinoma arising in the background of Barrett oesophagus and supply this has become increasingly common.

A well-established risk factor is the combination of smoking and alcohol consumption which has a synergistic effect on the development of oesophageal squamous cell carcinoma increasing the risk by as much as 44 times. Other risk factors are deficiency in vitamins A, C, riboflavin and fungal contamination of food stuffs of an associated with aflatoxin production. For adenocarcinoma the primary etiological factors are obesity and Barrett oesophagus. The malignant transformation of Barrett is estimated approximately as 0.5% per year. This risk seems to be mediated through gastro-oesophageal reflux disease. Oesophageal-adenocarcinoma is known to progress through a metaplasia-dysplasia-cancer sequence. The middle one third of oesophagus is the commonest site for squamous cell carcinoma and lower one third of oesophagus is the commonest site for adenocarcinoma.<sup>2</sup> Other less common primary malignant neoplasms of oesophagus include neuroendocrine tumours, GI stromal tumours, variants of squamous cell carcinoma or adenocarcinomas, melanomas, sarcomas and lymphomas.

Clinical presentation is generally insidious and typical symptoms occur late in course of disease. Dysphagia is the most common symptom and is usually a late sign because the oesophageal lumen must be reduced to 50% to 75% of its original size before patients experience this symptom.<sup>2</sup> Other symptoms include weight loss, odynophagia, emesis, cough, regurgitation, anemia, haematemesis and aspiration pneumonia. Haematemesis and malena usually indicate friability of the tumour or its invasion into major vessels.

Malignancies of the oesophagus are diagnosed via upper endoscopy with mucosal biopsies. The sensitivity for mucosal biopsies to detect oesophageal carcinoma is 96% when multiple samples are obtained. The use of large-capacity biopsy forceps does not improve the sensitivity. Strictures may prevent complete visualization and sampling of the obstructing malignancy. In these instances, brush cytology can improve the diagnostic accuracy by 20%. The sensitivity of detecting early stage carcinoma may be improved by other techniques such as chromoendoscopy, narrow band imaging, confocal microscopy, spectroscopy and other advanced endoscopic imaging techniques.<sup>6</sup>

Accurate staging is important in establishing appropriate treatment choices for oesophageal cancer, whether it is determining the depth of tumor to determine the feasibility of endoscopic management or to establish tumor margins and/or lymph node involvement before possible surgical resection or chemo radiation. Endoscopic ultrasound is probably the most accurate means currently available for determining T and N status.<sup>7</sup> Reported overall accuracy for depth invasion is 76 to 90%. Endosonographic characteristics of malignant lymph nodes include size greater than 10 mm, round and smooth features, proximity to the primary tumor, and hypoechogenicity. The accuracy of endoscopic ultrasonography for nodal staging based solely on these acoustic criteria approaches 80%. Fine needle aspiration of lymph nodes increases nodal staging accuracy to 92% to 98%.<sup>8</sup> Positron emission tomography – computed tomography (PET-CT) is superior over PET or CT alone and have a reported accuracy of nearly 60% and 90% in the ability to detect loco regional lymph-node and distant metastasis respectively.<sup>9</sup> For the oesophagus, severe hyperplasia/carcinoma in situ, mucosal carcinoma and submucosal carcinoma were categorised as the early stage cancer and invasive carcinoma was categorised as the late stage cancer.<sup>10</sup>

Treatment options vary according to patient presenting stage, patient performance status and local expertise. Patients with in situ carcinoma (high-grade dysplasia) or tumours that are limited to the mucosa (stages zero and one) are ideal candidates for oesophageal preserving techniques such as endoscopic resection and ablation. Endoscopic mucosal resection and endoscopic submucosal dissection are endoscopic techniques that permit targeted removal of superficial tissue of the GI tract.<sup>11</sup> Ablation techniques include photodynamic therapy, cryotherapy, argon plasma coagulation, heater probe treatment, and radiofrequency ablation.<sup>11</sup> In patients with tumours of stage 2 and 3 - multimodality treatment is beneficial since surgery alone have relatively poor results. Chemo radiotherapy has been used as adjuvant, neoadjuvant and as definitive therapy according to the stage of the disease and the response of the tumour.<sup>12</sup>

Perioperative mortality rates for transhiatal or transthoracic esophagectomies are now less than 3% and realistic morbidity rates range from 35 to 65%. The five-year survival rates have been reported to 60 to 95% for stage one, 30 to 60% for stage two, 5 to 30% for stage three, 0 to 20% stage four. Palliative measures can be in the form of chemo radiotherapy, endoscopy and surgery. Endoscopic options for palliation include dilation, stenting, chemical or ablative debulking, and enteral feeding.<sup>13</sup>

Overall survival rates after surgical resection and all other modalities depends on the stage of the disease at which the patient presents.

## CONCLUSION

Since early diagnosis and treatment improves the survival rate. All patients presenting with upper GI symptoms especially with dysphagia and for male gender older than 50 years and female gender older than 60 years its essential to do an upper GI endoscopy and to take multiple biopsies from suspicious lesions.

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