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Prevalence Of Anemia In Esophageal Squamous Cell Carcinoma Patients At Presentation

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Abstract

Background

Anemia is a common problem in patients with solid tumours. Majority of esophageal cancer patients present with dysphagia which can lead to deficiency of various nutrients. Since anaemia has a definite impact on survival and treatment of cancer patients especially those receiving radiotherapy, the current study was performed to evaluate presence of anaemia in esophageal squamous cell carcinoma patients at presentation.

Material and Methods

The aim of the study was to evaluate presence of anaemia in esophageal squamous cell carcinoma patients at presentation. In our study, we evaluated 160 newly diagnosed ESCC patients for the presence of anaemia. Blood samples were taken at initial diagnosis before any treatment. Proper consent was taken from the patients.

Results

We found a high prevalence of anemia is esophageal squamous cell carcinoma patients. The prevalence of anaemia was almost similar in both male and female patients. Majority of the patients were found to be severely anaemic.

Conclusion

Anemia is a common problem in patients with esophageal squamous cell carcinoma patients. These patients should be properly evaluated for the underlying cause of anaemia and appropriate treatment should be instituted to correct anaemia at the earliest

Keywords: NIL

Introduction

Esophageal cancer is an aggressive malignancy with high mortality and worse prognosis. Most of the patients present at an advanced stage with cancer related complications like dysphagia, pain, weight loss. There are two major histological variants of esophageal carcinoma: esophageal squamous cell carcinoma (ESCC) and adenocarcinoma. Adenocarcinoma is the major type of esophageal cancer in the United States and European countries, whereas ESCC is more common in China and other East Asian countries. Esophageal squamous cell carcinoma is one of the most common cancer in the Kashmir valley [(1)].

Abnormalities in hematologic profile have been suggested as dismal prognosis signs of human cancers due to the implication of pathophysiologic responses to disseminated disease [(2)]. About 50% of patients with solid tumours present with anaemia at diagnosis. Pre-treatment anaemia has been found to

be associated with shorter survival in carcinoma patients, including head and neck cancer, lung carcinoma, cervical carcinoma, and esophageal cancer [3-6].

Large randomized controlled trials and community-based studies have shown increased haemoglobin levels to be associated with better quality of life [7–10]. It has been suggested that maintenance of haemoglobin levels may improve survival, especially in patients with advanced disease. [11-13].

Majority of esophageal cancer patients present with dysphagia which can lead to deficiency of various nutrients. Since anaemia has a definite impact on survival and treatment of cancer patients especially those receiving radiotherapy, the current study was performed to evaluate presence of anaemia in esophageal squamous cell carcinoma patients at presentation.

Patients and Methods

Between June 2016 to May 2018, 160 newly diagnosed ESCC patients registered in the department of Radiation oncology, Sher-i-Kashmir Institute of Medical Sciences, Srinagar, Kashmir were included in the study. Inclusion criteria included all newly diagnosed patients of ESCC who gave informed consent. The exclusion criteria were patients with non-squamous cell subtype, patients who had received blood transfusions, and patients who did not give consent.

Blood samples were taken at initial diagnosis before any treatment. Two-millilitre blood sample was obtained from the patient and then transported to the haematology laboratory. A full blood count including haemoglobin concentration, white blood cells, and platelet counts was performed.

Anaemia was defined as haemoglobin value of less than 13 g/dl in adult men and less than 12 g/dl in non-pregnant adult women [14]. The severity of anaemia was classified into three groups: as mild (11-11.9gm/dl in non-pregnant women and 11-12.9gm/dl in men), moderate (8-10.9gm/dl in both men and women) and severe (<8gm/dl in both men and women) [14].

Data was analysed using SPSS software for windows version 22. The categorical variables were summarized as percentages and the continuous variables were summarized as mean and standard deviation.

Results and discussion

More than 30% of cancer patients present with anaemia at diagnosis before the initiation of antineoplastic therapy. It is detected more often in patients with advanced stage disease. The presence chronic inflammatory status in advanced neoplastic patients mostly leads to anaemia. The presence of anaemia impacts survival, disease progression, treatment efficacy, and the patients' quality of life.

ESCC is a disease which occurs most commonly in older adults. Also Anaemia is a common problem in developing countries especially in the elderly [15]. Anaemia has a definite impact on survival, disease progression, treatment efficacy, and the patients' quality of life. In our population ESCC is one of the most common cancers [1]. The purpose of our study was to assess the prevalence of anaemia in ESCC patients at initial presentation before receiving any treatment. Over the 2-year study period 160 patients of ESCC were included in the study. In our study the mean age of the patients was 61.6 years. There were 88 male patients (55%) and 72 (45%) female patients. ECOG performance score was ≤ 1 in 68.1% of the patients while 31.9% patients had ECOG performance score of ≥ 2. Majority of the patients had locally advanced disease (60%) followed by metastatic disease in 25.6% patients, followed by early stage disease in 8.1% patients. In the remaining 6.3 % patients, stage of disease was not known.

Out of the 160 patients evaluated, 45% (72) were found to be anemic. Among a total of 72 anemic patients, 18% were severely anemic, 26.4% were moderately anemic and 55.6% were mildly anemic.

Among a total of 88 male patients, 47.7% were anemic compared to 41.7 % in the female group. Among a total of 42 male anemic patients, 21.4% patients were severely anemic, 23.8% were moderately anemic and 54.8% were mildly anemic. Among a total of 30 Female anemic patients, 13.3% were severely anemic, 30% were moderately anemic and 56.7% were mildly anemic. Thus it can be stated that in our region, esophageal squamous cell carcinoma patients have a high prevalence of anemia. Presence of anemia in these patients affects their ability to both tolerate and respond to treatment.

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Radiation therapy which is a part of the treatment has been shown to be more effective in patients without anaemia than in anaemic patients [16]. Chemotherapy dose reductions or delays are expected because of anaemia and are likely to reduce tumour response.

Due to heterogeneity of the patients in age, comorbid conditions, dietary habits, physical activity etc. an individual approach will be needed to identify the causes and manage anaemia in these patients.

In conclusion, Anaemia is a serious problem in esophageal squamous cell carcinoma patients which can significantly affect their survival, disease progression, treatment efficacy, and quality of life. These patients should be properly evaluated for the underlying cause of anaemia and appropriate treatment should be instituted to correct anaemia at the earliest.

Tables

Table 1: Baseline characteristics of the Patients

CHARACTERISTIC		FREQUENCY (n=160)	PERCENTAGE (%)
AGE	≤60	68	42.5
	> 60	92	57.5
GENDER	Male	88	55
	Female	72	45
Performance	≤ 1	109	68.1
score	≥ 2	51	31.9
Stage	Early	13	8.1
	Locally Advanced	96	60
	Metastatic	41	25.6
	Unknown	10	6.3

Table 2 : Distribution of anemia among the study group

Gender	Anemic	Non anemic	Total
Males	42 (47.7%)	46 (52.3%)	88
Females	30 (41.7%)	42 (58.3%)	72
Total	72 (45%)	88 (55%)	160

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Table 3 : Distribution of anemia on the basis of severity.

Gender	Mild	Moderate	Severe	Total
Male	9	10	23	42
Female	4	9	17	30
Total	13	19	40	72

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