ISSN No:-2456-2165

Palliation of Dysphagia in Locally Advanced Carcinoma Esophagus- Exploration of Two Different Radiotherapy Schedules

[1]Sheeba Bhardwaj (Junior Resident, Radiation Oncology, PGIMS, Rohtak)
[2]Rakesh Dhankhar (Senior Professor, Radiation Oncology, PGIMS, Rohtak)
[3]Vivek Kaushal (Senior Professor and Head of Department, Radiation Oncology, PGIMS, Rohtak)
[4]Rajeev Atri (Professor, Radiation Oncology, PGIMS, Rohtak)
[5]Anil Kumar Dhull (Assistant Professor, Radiation Oncology, PGIMS, Rohtak)
[6]Peoli Mukutawat (Junior Resident, Radiation Oncology, PGIMS, Rohtak)
[7]Shweta Bhardwaj (Junior Resident, Anaesthesiology, PGIMS, Rohtak)
Department of Radiation Oncology, Pandit B.D. Sharma PGIMS, Rohtak

Abstract

- ***Introduction-***

Esophageal cancer is the seventh most common cancer constituting 3.2% of all cancer cases and sixth most common cause of mortality constituting 5.3% cases worldwide in 2018. Most common presenting symptom is dysphagia which is seen in 80–90% of patients. Most patients present in locally advanced stage and because of extensive local disease palliative radiotherapy plays a significant role.

- ***Aim and objectives-***

Aim of the study was to compare two palliative radiotherapy schedules- 30 Gy in 10 fractions over 2-weeks versus 20 Gy in 5 fractions over 1-week in locally advanced carcinoma esophagus. Objectives were to compare above schedules based upon symptomatic relief and tolerability by the patient.

- ***Material and methods-***

The study was a randomized control study done from July 2017 - December 2018 on 60 previously untreated, histo-pathologically proven patients of squamous cell carcinoma esophagus (locally advanced) reporting in the Department of Radiation oncology, Pandit B. D. Sharma PGIMS, Rohtak, where palliative radiotherapy was indicated as the treatment. Patients were divided into two groups of 30 patients each; Study group received- 30 Gy in 10 fractions over 2-weeks and Control group received 20 Gy in 5 fractions over 1-week. The symptomatic relief was assessed according to dysphagia score at 1- month after completion of radiation treatment. A reduction of at least 1 point in dysphagia score was depicted as improvement of dysphagia.

- ***Observations and result-***

Dysphagia was the most common presenting symptom seen in all the patients followed by chest pain and weight loss. 80% patients in study group and 76.6% patients in control group showed improvement in dysphagia. 25% patients in study group and 43.4% in control group developed recurrent dysphagia. The mean duration of development of recurrent dysphagia in study group was 2.5 months and 5.6 months in control group. It was concluded that both the radiotherapy schedules were comparable in providing symptomatic relief; both radiotherapy schedules were tolerable by the patients.

I. INTRODUCTION

Esophageal cancer is the seventh most common cancer constituting 3.2% of all cancer cases and sixth most common cause of mortality constituting 5.3% cases worldwide in 2018[1]. Major risk factors for esophageal cancer development are tobacco and alcohol abuse; risk of SCC decreases substantially after smoking cessation whereas the risk for adenocarcinoma remains unchanged even after smoking cessation. Obesity, high BMI (Body Mass Index), GERD (Gastroesophageal reflux disease) and Barrett's esophagus are also strong risk factors for adenocarcinoma of the esophagus.[2,3] Dysphagia is the most common complaint in 80–90% of patients and as the disease progresses it leads to nutritional compromise, pain, reduced performance status and deterioration of quality of life.[4] Therefore, the main aim of treatment in patients with incurable esophageal cancer is palliation of dysphagia.[5] Many of these patients are not fit enough for surgical resection or curative radiochemotherapy.[6] Therefore, palliation remains an important goal.[7] The present study was designed to evaluate symptomatic relief in patients with locally advanced esophageal carcinoma who received two different schedules of palliative radiotherapy.

II. MATERIAL AND METHODS

It was a randomized control study done from July 2017 to December 2018 on 60 previously untreated, histo-pathologically proven patients of squamous cell carcinoma esophagus reporting in the Department of Radiation oncology, Pt. B. D. Sharma PGIMS, Rohtak; where palliative radiotherapy was indicated as the treatment. Inclusion criteria for the study were patients having locally advanced carcinoma esophagus, inoperable tumor or who were unfit for surgery and other combination chemotherapy treatment modality and where palliative radiotherapy was

ISSN No:-2456-2165

indicated, Karnofsky Performance Status ≥ 60, normal complete hemogram, renal function tests and liver function tests and patients who signed the informed consent and were ready to be on follow up for 6 months after completion of treatment. Patients were randomized into two groups of 30 patients each; study group received- 30 Gy in 10 fractions over 2-weeks and control group received- 20 Gy in 5 fractions over 1-week. The symptomatic relief was assessed at 1- month after completion of radiation treatment according to dysphagia score (table-1). Improvement of dysphagia was defined as a decrease of at least 1 point in dysphagia score. All the patients were followed up in OPD for a period of at least 6 months.

Score	Swallowing status
0	Asymptomatic
1	Can eat solid diet with some dysphagia
2	Eats semi-solid diet
3	Can take liquid diet
4	Complete dysphagiaj

Table 1:- Dysphagia score

III. OBSERVATIONS AND RESULT-

Table 2 shows improvement in dysphagia score post palliative radiotherapy; observations were made at one month after completion of radiation treatment. 80% patients in study group and 76.6% patients in control group showed improvement in dysphagia score while 20% patients in study group and 23.3% patients in control group showed no reduction in dysphagia score. Overall 78.3% patients showed improvement in dysphagia after palliative radiotherapy.

Improvement in dysphagia score	Study group n=30	Control group n=30	p value
Yes (%)	24 (80 %)	23 (76.6 %)	0.17
No (%)	6 (20 %)	7 (23.3 %)	

Table 2:- Dysphagia score improvement post radiotherapy

In study group 25% (n=24) patients developed recurrent dysphagia and in control group 43.4% (n=23) patients developed recurrent dysphagia. The mean duration of development of recurrent dysphagia in study group was 2.5 months and in control group it was 5.6 months. The p value was 0.11 which was statistically non- significant.

IV. DISCUSSION

This prospective study was conducted on 60 previously untreated, histo-pathologically proven patients of Carcinoma esophagus reporting in the Department of Radiotherapy, Pandit B. D. Sharma PGIMS, Rohtak, where palliative radiotherapy was indicated as the treatment. Patients were divided into two groups of 30 patients each; study group received- 30 Gy in 10 fractions over 2-weeks and control group received 20 Gy in 5 fractions over 1-week. The symptomatic relief was assessed at 1- month after completion of radiation treatment according to dysphagia score. A reduction of at least 1 point in dysphagia score was depicted as improvement of dysphagia.

All the patients had complaint of dysphagia. Second most common symptom was chest pain seen followed by weight loss. Squamous cell carcinoma was the histology in both groups with moderately differentiated subtype being the commonest.

Out of all the patients (n=60) 78.3% patients (80% in study group and 76.6% in control group) patient showed reduction in dysphagia score while 21.7% patients (20% in study group and 23.3% in control group) showed no reduction in dysphagia score. 25% patients in study group and 43.4% in control group developed recurrent dysphagia. The mean duration of development of recurrent dysphagia in study group was 2.5 months and in control group it was 5.6 months. The mean duration of follow up was 6.9 months in study group and 6.6 months in control group.

V. CONCLUSION

It was concluded that both the radiotherapy schedules were comparable in providing symptomatic relief; and were tolerable by the patients. The development of recurrent dysphagia was more common in control group thereby requiring secondary interventions; however the results were statistically non-significant. Radiotherapy in locally advanced cases of carcinoma esophagus is an effective modality for palliation of dysphagia.

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