

Constipation - A Disregarded Symptom in Patients Undergoing Radiotherapy for Head and Neck Cancer - A Clinical Audit on Management

Sapna Krishnamurthy

Radiation Oncology, KLE Cancer Hospital, JNMC, KAHER, Belagavi, Karnataka, India.

Imtiaz Ahmed

Radiation Oncology, KLE Cancer Hospital, JNMC, KAHER, Belagavi, Karnataka, India.

Background: In clinical practice, constipation in patients undergoing Radiotherapy (RT) for head and neck cancer is not only very common, but many a times left unattended. Unrelieved constipation results in patient distress and poor compliance to treatment. Most of the patients are empirically treated with poor symptom control. The aim of this audit was to find out the burden of constipation and to treat them effectively.

Methods: Standard based clinical audit was undertaken in the department of Radiation Oncology from July 2021 to January 2022, in patients with complaints of constipation who are undergoing RT for head and neck cancers. The intervention planned (criteria) was to follow the European Society for Medical Oncology (ESMO) 2018 flowchart for the management of constipation, which were divided into 4 checkpoints for the ease of quantification - 1. history taken, 2. documentation of type of laxative used, 3. review for symptom relief and 4. maintenance therapy prescription. The standard set was 65%.

Results: A total of 48 patients in the initial assessment (retrospective) and 44 patients in the re-assessment (prospective) were evaluated. The mean age in both the audit was 54 years, 32 (66.6%) patients in the initial assessment and 26 (60%) patients in the re-assessment reported constipation during RT. Comparing the pre intervention and post intervention, the 4 checkpoints of the ESMO flowchart were never addressed (0%) as compared to 92%, 92%, 77% and 77% respectively. The mean number of days for complete symptom relief were 7 v/s 2 days respectively. Mean number of days to report constipation was 5 days v/s 3 days respectively. The mean number of active reviews till complete symptom relief was 0 v/s 2 times.

Conclusion: Empirical management of constipation occurring during RT for head and neck cancers gives poor results. Guideline based treatment help manage the constipation better thus enhancing the patient care.

Introduction

Constipation is a common symptom in patients with cancer. Literature shows that constipation occurs in 23-65% of advanced cancer [1, 2]. In clinical practice more so in patients undergoing Radiotherapy (RT) for head and neck cancer, this symptom is not only very common, but many a times left unattended. Most patients are on opioid analgesics, concurrent chemotherapy, anti-emetics and decreased oral intake lacking dietary fiber which induce constipation in a multifaceted manner. A typical RT protocol for head and neck cancer lasts for 6-7 weeks with each fraction of RT is delivered every day for five days a week. Unrelieved constipation causes a vicious cycle of pain, discomfort, poor oral intake, poor compliance to prescribed medications and pain leading to

treatment interruption. Uninterrupted RT treatment is recommended as it has a bearing on the ultimate survival outcomes [3-5]. Hence compliance to planned treatment is threatened by improper management of constipation.

At our Institution, though constipation was recognized in patients undergoing RT for head and neck cancers, due to anatomical non-proximity of the symptom with the RT treatment site (generally head and neck region) and poor insight into symptom management, many were treated empirically with poor results. We carried out this audit with the intent to know the symptom burden and to manage constipation appropriately, which would improve our clinical practice for a better patient care in patients undergoing RT for head and neck cancer.

Materials and Methods

This audit was conducted in the department of Radiation Oncology from July 2021 to January 2022. Protocol or guideline-based treatment for the management of constipation were not used prior to the audit. The European Society for Medical Oncology (ESMO) guidelines for management of constipation 2018 - the flow chart, was used as audit criteria, in this standard based audit [6]. The ESMO Clinical Practice Guideline (CPG) is directed towards adult cancer patients experiencing constipation because of their cancer diagnosis or treatment. The procedures followed were in accordance with the ethical framework of revised Helsinki Declaration of 1975. This audit was presented as abstract at the 30th Annual International Conference of the Indian Association of Palliative Care 2023.

Inclusion criteria

All head and neck cancer patients receiving curative intent radiotherapy to the head and neck region with or without concurrent chemotherapy treated under a single consultant who experienced at least one episode of constipation during RT.

Data collection

Along with the demographic, tumour, and treatment related characteristics, the medical case records of these patients were evaluated for the complaint of constipation during RT. In patients with constipation, for ease of quantification, a note was made whether the four pertinent checkpoint questions from the ESMO flow chart (Figure 1) were documented or not -

Figure 1. ESMO Flowchart for Management of Constipation*. *Reproduced from ESMO guidelines 2018 [6].

1. Is the history of constipation taken with respect to - stool consistency, frequency, ease of evacuation?
2. Are the type of laxative used and concurrent use of any other constipating drugs documented?
3. Was the patient reviewed for symptom relief?
4. Was the patient put on maintenance therapy?

Initial assessment

A retrospective audit of the case records of the patients treated between 1st July 2021 to 30th September 2021, along with demographic, tumour, and treatment related parameters with complains of constipation was noted. If constipation was documented, a note was made whether the

four pertinent questions were dealt with or not.

Intervention

After collecting the baseline data from the initial assessment, in the month of October 2022 intervention was planned which constituted of priming of the team consisting of Radiation Oncologist, nurse and junior doctor to promptly elicit history of constipation during RT. Once symptom was identified, the team had to follow the audit criteria and address all the 4 check points.

Audit criteria - The ESMO guidelines 2018 for the management of constipation - the flow chart with 4 check points.

Setting the standard - the standard was set by us, to follow the flow chart in at least 66% of the patients. Though ideally it must be followed in all patients (100%), as this was our first audit, the aim was to follow in at least two-thirds (66%) of the symptomatic patients.

Re-assessment

After one month of priming period, data with respect to same 4 pertinent checkpoint questions and other demographic characteristics were collected in patients complaining of constipation in a prospective manner from 1st November to 31st January 2022.

Analysis and statistics

Frequency, percentages, and measures of central tendencies were used to compare the results of the initial assessment and re-assessment audits.

Results

A total of 48 patients in the initial assessment and 44 patients in the re-assessment were evaluated. The mean age in both the audit was 54 years, 32 (66.6%) patients in the initial assessment and 26 (60%) patients in the re-assessment reported constipation during RT. Other demographic and RT related characteristics are as depicted in Table 1.

Characteristics	Initial assessment (48) (%)	Re assessment (44) (%)
Age	35-78 years (mean - 54)	23-78 years (mean - 54)
Gender		
Male: Female	37/11	35/9
Intent of Treatment		
Definitive RT	16 (33.3)	19 (43)
Post op RT	32 (66.6)	25 (5)
Radiotherapy Dose		
Median	66Gy	66Gy
Range	60-70Gy	60-70Gy
Concurrent Chemotherapy		
Yes	26 (54)	21 (48)
Cisplatin/Carboplatin	23/3	19/2
No	22 (46)	23 (52)
Primary Cancer Site		

Oral Cavity	33 (68.75)	32 (73)
Laryngo-pharynx	15 (31.25)	12 (27)
Constipation		
Yes	32 (66.6)	26 (60)
No	16 (33.3)	18 (40)
In Constipated Patients (number = 32/26)		
Chemo received/not received	11/21	10/16
Oral cavity/Laryngopharynx	20/12	18/8

Table 1. Demographic and Treatment Characteristics.

Comparing the pre intervention and post intervention, the 4 checkpoints of the ESMO guidelines were never addressed (0%) as compared to 92%, 92%, 77% and 77% respectively. The mean number of days for complete symptom relief were 7 v/s 2 days respectively. Mean number of days to report constipation was 5 days v/s 3 days respectively. Local examination (per-rectal examination) rate was 0 v/s 12 (46%). The mean number of active reviews till complete symptom relief was 0 v/s 2 times as shown in Table 2.

Checkpoints from flow chart	Initial assessment (Number-32)	Re-assessment (Number-26)
1. Comprehensive history taken?(Stool consistency, frequency, ease of evacuation?)	0 (0 %)	24 (92%)
2. Documentation of the type of laxative used and concurrent use of any other constipating drug?	0 (0 %)	24 (92%) #
3. Active review for symptom relief?	0 (0 %)	20 (77%)*
4. Put on maintenance therapy?	0 (0 %)	20 (77%)
Mean duration to report constipation	5 days (range 2-7)	3 days (range 2-5)
No. of days for complete symptom relief	Range - 1-10 Days	Range 1-6 Days
	Mean - 7 days	Mean - 2 days
No. of Reviews till complete relief	Not documented	Mean - 2 (active review)
Type of laxatives used	Oral syrups and tablets, saline enemas.	Oral syrups, tablets, rectal suppositories, adjuvant local applications, saline enemas - wherever found appropriate

Table 2. Comparison between Initial Assessment and Re-assessment Group in Patients with Complaints with Constipation.

Discussion

Symptom management is one of the cornerstones of medicine. American Society of Clinical Oncology (ASCO) CPG [7], for integration of Palliative care into standard oncology care, in their 3rd recommendation propose that patients with advanced cancer should receive symptom, distress, and functional status management (e.g. pain, dyspnoea, fatigue, sleep disturbance, mood, nausea, or constipation).

Failure to achieve good symptom relief increases the patient’s distress, leads to poor compliance to planned treatment, thus jeopardizing the treatment outcomes and compromises quality of life. Though there are literature regarding the incidence and management of constipation in advanced/metastatic cancers [8] or in opioid use [9, 10] there is dearth of data when it comes to constipation occurring during curative cancer therapy.

In our audit, nearly two-thirds (60-66%) of the patients on radiotherapy for Head and neck cancer

reported constipation, which is same as the incidence of constipation reported in advanced cancer [2]. All the four checkpoints of the ESMO flowchart [6] were never addressed earlier, while they were better addressed in the re-assessment group. These results were well beyond the set standards of 66%, meaning more than two-thirds of the patients with complaints of constipation had prompt relief of symptom. The mean number of days to report constipation was also reduced from 5 days to 3 days, as the patients and caregivers were primed in an active manner during routine weekly reviews while on RT. With the active intervention, constipation was relieved early (mean 2 v/s 7 days), active reviews improved (0 v/s 2) and a wide range of laxative combinations based on the history, concurrent medications and clinical examination were explored in the re-assessment group as against the empirical use of laxatives earlier.

There exists no literature till date regarding incidence and management of constipation during RT for head and neck cancer, which made us wonder whether this is unique to our region or is it a real-world issue which is under reported. Even literature suggests that underestimation of symptom intensity by health care providers increased the risk of inadequate treatment ($p < 0.001$) [11]. This audit helped us to identify, quantify and manage the symptom of constipation appropriately, during RT and to bring about change in approach towards symptom management leading to better patient care. Though a clinical audit, to our knowledge, this is the only study which has tried to address constipation occurring during standard curative treatment. Though symptoms directly related to treatment (in our case RT), like oral mucositis, dysphagia, xerostomia, or dermatitis are given prime importance, the symptom of constipation is just one of the many symptoms which is not directly related to RT but impacts the quality of life, leading to poor compliance to curative treatment. Literature on importance of symptom care in clinical practice is the need of the hour for a better patient care.

Constipation during RT for head and neck cancers require active intervention. Management of constipation using existing guidelines help manage the symptom better leading to early symptom relief and better treatment compliance.

References

References

1. Vainio A, Auvinen A. Prevalence of symptoms among patients with advanced cancer: an international collaborative study. Symptom Prevalence Group. *Journal of Pain and Symptom Management*. 1996; 12(1)[DOI](#)
2. Solano JP, Gomes B, Higginson IR. A comparison of symptom prevalence in far advanced cancer, AIDS, heart disease, chronic obstructive pulmonary disease and renal disease. *Journal of Pain and Symptom Management*. 2006; 31(1)[DOI](#)
3. Suwinski R, Sowa A, Rutkowski T, Wydmanski J, Tarnawski R, Maciejewski B. Time factor in postoperative radiotherapy: A multivariate locoregional control analysis in 868 patients. *International Journal of Radiation Oncology*Biophysics*Physics*. 2003; 56(2)[DOI](#)
4. Fujiwara RJT, Judson BL, Yarbrough WG, Husain Z, Mehra S. Treatment delays in oral cavity squamous cell carcinoma and association with survival. *Head & Neck*. 2017; 39(4)[DOI](#)
5. Langendijk J. A., Jong M. A., Leemans C. R., Bree R., Smeele L. E., Doornaert P., Slotman B. J.. Postoperative radiotherapy in squamous cell carcinoma of the oral cavity: the importance of the overall treatment time. *International Journal of Radiation Oncology, Biology, Physics*. 2003; 57(3)[DOI](#)
6. Larkin P. J., Cherny N. I., La Carpia D., Guglielmo M., Ostgathe C., Scotté F., Ripamonti C. I.. Diagnosis, assessment and management of constipation in advanced cancer: ESMO Clinical Practice Guidelines. *Annals of Oncology: Official Journal of the European Society for Medical Oncology*. 2018; 29(Suppl 4)[DOI](#)



7. Ferrell BR, Temel JS, Temin S, Alesi ER, Balboni TA, Basch EM, Finn JI, et al. Integration of Palliative Care Into Standard Oncology Care: American Society of Clinical Oncology Clinical Practice Guideline Update. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*. 2017; 35(1)[DOI](#)
8. Larkin P. J., Sykes N. P., Centeno C., Ellershaw J. E., Elsner F., Eugene B., Gootjes J. R. G., et al. The management of constipation in palliative care: clinical practice recommendations. *Palliative Medicine*. 2008; 22(7)[DOI](#)
9. Staats PS, Markowitz J, Schein J. Incidence of constipation associated with long-acting opioid therapy: a comparative study. *Southern Medical Journal*. 2004; 97(2)[DOI](#)
10. Sridharan K, Sivaramakrishnan G. Drugs for Treating Opioid-Induced Constipation: A Mixed Treatment Comparison Network Meta-analysis of Randomized Controlled Clinical Trials. *Journal of Pain and Symptom Management*. 2018; 55(2)[DOI](#)
11. Laugsand EA, Jakobsen G, Kaasa S, Klepstad P. Inadequate symptom control in advanced cancer patients across Europe. *Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer*. 2011; 19(12)[DOI](#)