

## Concurrent Chemoirradiation in Elderly Head and Neck Cancer Patients

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**Abstract :** Cancer and its treatment can affect the overall life expectancy as well as the active life expectancy and function of older patients. H and N cancers are the leading cancer in elderly population. The present study evaluated the pattern of tolerance and response to treatment in elderly (>65 years) H & N cancer patients. A total of 30 elderly patients of age >65 years of head and neck cancer were treated with concurrent chemoirradiation. Of the 30 patients planned for concurrent chemoirradiation, only 22 patients (73.3%) were able to complete the prescribed treatment. 2 patients were not able to finish the course of chemoirradiation. Both the patients developed grade 4 thrombocytopenia and neutropenia during the treatment course. 6 patients (20%) expired during the treatment course. All the patients expired because of aspiration pneumonia. 5 patients received <3 cycles of chemotherapy. This study concluded that Concurrent chemoRadiation therapy is well tolerated in elderly patients with minor toxicities. With a thorough risk benefit assessment patients can be offered a curative treatment.

**Keywords** –elderly, chemoirradiation, toxicities, curative, response

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### I. Introduction

Head and neck (H and N) cancer is the sixth most common type of cancer in the world. It represents about 6% of all cancers. H and N cancers are the leading cancer in elderly population.<sup>[1]</sup> Due to its relationship with chronic exposure to tobacco smoking and alcohol intake it has a higher incidence in older people.<sup>[2]</sup> More than 40% of H and N cancers occur in patients older than 65 years.<sup>[3]</sup> It is estimated that by 2030, nearly 70% of the cancer cases would be diagnosed in adults with age 65 years or older.<sup>[4]</sup> Cancer and its treatment can affect the overall life expectancy as well as the active life expectancy and function of older patients.<sup>5</sup> The present study evaluated the pattern of tolerance and response to treatment in elderly (>65 years) H & N cancer patients.

### II. Materials And Methods

30 elderly head and neck cancer patients above 65 years presenting to the department of radiotherapy, Father Muller Medical College Hospital, Mangalore from Oct 2014 to Jan 2016 were selected for the study. All the patients had histologically confirmed head and neck malignancy. Patients who were planned for concurrent chemoirradiation were eligible for the study. Post operative head and neck cancer patients who received concurrent chemoirradiation were excluded from the study. All the patients with KPS  $\geq$  90 were only included in the study. All the patients were initially assessed using Comprehensive Geriatric Assessment. Radiation therapy was delivered using 6MV Varian clinic DBX linear accelerator using conventional fractionation. All the patients were planned for weekly chemotherapy using Inj. Cisplatin (35 mg/ m<sup>2</sup>).

Tolerance was defined as those patients who were able to complete the advised treatment. Treatment duration was calculated from 1 st day of starting of therapy to the date of completion. Incomplete treatment constituted nontolerance to the treatment prescribed. Response was assessed clinically and subjectively at completion of the advised treatment and at first follow-up in terms of response being present (<50% or > 50%) or absent (no response [NR]/progressive disease [PD]).

### III. Results

Total number of elderly (>65 years) patients with H and N cancers was 30. Mean age of this subgroup was 70.04 years (range: 65-82 years). Of these, male patients accounted for 18 cases (60%) while the number of female patients was 12 (40%). Majority (22/30) of the elderly patients presented in locoregionally advanced stage (III and IV). The most common site of malignancy was hypopharynx (14), followed by oropharynx (7), larynx (5) and oral cavity in 4 patients. With regard to the age distribution, 70% (21/30) of the patients were between the age group of 65-70 years, whereas 30% (09/30) were aged > 70 years. The average duration of symptoms was 6.5 months (Range: 1-24 months).

#### TREATMENT OUTCOME:

Of the 30 patients planned for concurrent chemoirradiation, only 22 patients(73.3%) were able to complete the prescribed treatment. 2 patients were not able to finish the course of chemoirradiation. Both the patients developed grade 4 thrombocytopenia and neutropenia during the treatment course. 6patients(20%) expired during the treatment course. All the patients expired because of aspiration pneumonia. 5 patients received <3 cycles of chemotherapy. Further cycles of chemotherapy was not given in view of poor performance status and neutropenia.

**TABLE 1: PATIENT CHARECTERISTICS**

TOTAL NUMBER OF PATIENTS	ELDERLY(>65 YEARS)	30
	MALES	18
	FEMALES	12
AGE DISTRIBUTION	65 – 70	19
	>70	11
STAGE	I – II	8
	III – IV	22
SITE	ORAL CAVITY	4
	OROPHARYNX	7
	HYPOPHARYNX	14
	LARYNX	5
TREATMENT ADVISED	CHEMOIRRADIATION	30
	CISPLATIN + RT	28
	CISPLATIN + TAXOL + RT	02

3 of the 22 patients who finished the prescribed treatment had progressive disease or no response (<50% of response. 1 patient had stable disease post 1 month of follow up. Hence started on chemotherapy. Rest of the 18 patients had complete response and on follow up. 2 Patients with complete response expired within one month of treatment due to aspiration pneumonia. Incidence of grade 3 skin reactions and mucositis is more in elderly patients owing to treatment gap ranging between 3 days to 5 days. Weight loss of >5 kgs was seen in 4 patients.

### IV. Discussion

As the number of elderly patients suffering from cancer increases, age and functional impairment become common problems in cancer patients. Both comorbidity and functional impairment are associated with a shorter survival time in cancer patients, but their independent role has rarely been addressed. Age, severe comorbidity, functional impairment, and tumor type are independently related to shorter survival time in cancer patients. Comorbidity needs to be assessed independently from functional status. Mountzios<sup>[6]</sup> in his article regarding optimal management of the elderly H and N cancer concluded that, it is well recognized that elderly patients with H and N cancers tend to receive suboptimal treatment, mainly due to fears of poor adherence and/or tolerance, excessive toxicity or lack of support from their environment. Elderly patients affected by H and N cancers should be treated on the basis of a curative intent, as long as comprehensive preoperative evaluation of existing co-morbidities is performed and optimal management of concomitant morbidities is completed. Age itself should never guide therapeutic decision, multidisciplinary approach addressing the real needs of the patient, as well as her/his wishes, should be implemented and maintained throughout the whole therapeutic process.

In our study all the patients were assessed using Comprehensive Geriatric Assessment before the starting of treatment. All the patients with good nutritional status and good Charlson Comorbidity Index score did well during the treatment process. Despite choosing the patients with good performance status, 8 patients were not able to complete the whole course of treatment. Nevertheless 18/30 (60%) had complete response. In 2014 International society of geriatric oncology had mentioned the importance of geriatric assessment in any elderly cancer patient.<sup>(7)</sup>

Both acute and late complications induced by RT can be very severe when treating H and N.<sup>[8]</sup> The indications for RT in elderly cancer patients should take into account multiple parameters and should be based on a thorough geriatric assessment. Chronological age itself is seldom a contraindication for RT and it can be safely administered to an elderly population aged 80 years and older with both curative and palliative intent with the expectation of completion in more than 80% of patients.<sup>[8]</sup>

Regarding dosage in RT, considering the available data in literature there is no indication for a dose reduction in radiation therapy due solely to age, especially in the curative setting<sup>(9)</sup>. In this study of elderly patients, all the patients were treated with curative intent with standard doses and dose fractionations. In our prospective observational study, we found that elderly patients tolerated the treatment well with minor toxicities. 60% of our patients finished the prescribed treatment without any treatment break. All these patients had minor toxicities that were encountered during any treatment prescribed for the elderly. In accordance with an American study, done by Wasiel et al in 2000, RT can be safely administered to an elderly population with both curative and palliative intent, with the expectation of completion in more than 80% of patients.<sup>(10)</sup>

Derksetal.<sup>[11]</sup> in their analysis of quality-of-life (QOL) comparing elderly (>70 years) and young (45-60 years) H and N cancer patients found out that treatment did not affect QOL differently in older and younger patients and that standard treatment should always be considered, irrespective of the patient's age.

The addition of CT to locoregional treatment for patients with nonmetastatic H and N cancers significantly improves survival, with absolute survival benefit of 8% at 2 and 5 years.<sup>[12]</sup> Combination CT with either cisplatin/5 fluorouracil or a platinum/taxane combination has become the standard of care in patients with incurable or recurrent H and N cancers.<sup>[13]</sup> Completion of the prescribed treatment is of paramount importance in the treatment outcome of cancer. Noncompliance to treatment has been reported to determent all parameters of disease control and survival.

Patel *et al.*<sup>[14]</sup> in their study of 40 patients with node-positive stage III/IV H and N cancers concluded that poorly compliant patients are at significantly higher risk of persistent neck disease.

In our study incidence of skin reactions and mucositis was more in elderly patients. Incidence of weight loss is also more in the elderly population. 2 patients had weight loss of more than 15 kgs during the first follow up.

This study suggested that definitive chemoradiation in elderly patients was an effective treatment without a major increase in adverse events. Moreover, our results showed that RT in elderly patients was well tolerated with the same regimen used for younger patients. These findings suggest that a treatment based on a CRT regimen may be discussed in elderly patients. Although age and comorbidity were associated with higher difficulties encountered during treatment, this prospective observational study showed older adults can be offered treatment with limited modifications.

## V. Conclusions

- Age alone should not be considered a contraindication for management of malignancies in elderly patients.
- Older patients require more careful multidisciplinary assessment of their supportive care needs to ensure successful completion of treatment and avoid further treatment-related toxicity.
- Appropriate geriatric tools should be used to identify elderly patients who are eligible for optimal locoregional treatments.
- Concurrent chemoRadiation therapy is well tolerated in elderly patients with minor toxicities.
- With a thorough risk benefit assessment patients can be offered a curative treatment.
- Further trials using larger number of patients and longer follow up is necessary to confirm the benefit of radiation therapy in elderly patients.

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