ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 07 | July - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

AGE BASED DISPARITY AND PROBABLE CAUSES FOR RISING TRENDS OF PALLIATIVE RADIOTHERAPY IN YOUNG POPULATION –A TERTIARY CANCER CENTER EXPERIENCE

Oncology/Radiotherapy

Dr. Etisha Rajput Senior resident, Department of radiation oncology, Government medical college and hospital, Nagpur

Dr. Subeera Khan Assistant professor, Department of radiation oncology, Government medical college and hospital, Nagpur

ABSTRACT

Background A major percentage of radiotherapy prescribed is with palliative intent in developing countries like India. Metastatic and locally advanced cancers are common at presentation which makes the intention of treatment as palliative. **Objective** Purpose for this study is to determine the percentage of patients receiving palliative radiotherapy and their characteristics. **Methods** Retrospective observational study conducted in a tertiary government institute from January 2018 to September 2019. **Results** Out of 1493 patients receiving radiotherapy, 24 % received palliative radiotherapy. These were the patients whose intent of treatment at presentation was palliation. Among these 41% patients were below the age of 45 years. The most common primary was breast cancer (37%) in females with bone metastasis (55%) as the major palliative site. For males the most common cancer was of the head and neck region (41%) with majority receiving palliative radiotherapy to the primary site (88.6%). An increasing trend was observed among the patients presenting with incurable cancers. Self - negligence was the major patient related contributing factor (50.1%) observed followed by use of alternative medicine (34.5%) and clinician delay (15.3%). **Conclusion** Majority of the patients receiving palliative radiotherapy were below the age of 45 years. Breast cancer in females and head and neck cancers in males were the major primary sites. The data indicates an increasing trend of young patients presenting with advanced diseases making majority of them candidates of only palliative management. Appropriate screening and educational measures have to be implemented to tackle the situation.

KEYWORDS

Palliation, Radiotherapy, Young Patients, Advanced Cancer

INTRODUCTION

The World Health Organization (WHO) predicts that cancer rates will increase from 10 million to 24 million in the next 50 years and sadly more than half of these cases will be diagnosed in developing nations like India. [1] In these countries 80% or more of patients will have incurable disease at diagnosis making palliative care a predominant part of their management.[1]

WHO defines palliative care as "the active total care of patient whose disease is not responsive to curative treatment".[2]Contrary to common belief, palliative care does not merely involve care of the dying, but also encompasses the extended care of patients with metastatic or advanced disease to make their life more comfortable.[3]

Palliative treatment as the term suggests is usually reserved for advanced diseases most commonly associated with older age group. But a rising trend is now discernible amongst young cancer patients presenting upfront with locally very advanced or metastatic disease. This makes the intent of treatment- palliation at initial presentation itself.The core reasons for this are either delay in presentation to healthcare facility or delay in diagnosis and initiation of treatment.[4]

Primary delay has been referred to as patient delay which is influenced by the patient's characteristics. Secondary or clinician delay is associated with doctor and system related factors. [5] Both of these factors contribute in situations where most patients are diagnosed with incurable disease.

Radiotherapy (RT) has proven to be successful, well-tolerated, and cost-effective intervention in palliative care setting. [6] 30%–50% of all cancer patients will require palliative RT at some stage of their disease. The main indications of palliative RT are control of hemorrhage, ulceration, pain, relief of dyspnea, and pressure symptoms.[7]The most common sites are- bones, brain, lungs, liver and primary tumor site.

The aim of this study is to define the age-related patterns of palliative radiotherapy in a single tertiary care center with a specific focus on the rising trend in younger population and causes for the same.

MATERIALS AND METHODS

Single retrospective observational study conducted in a tertiary government hospital. Data was collected from January 2018 to September 2019, from medical records and radiation treatment plans.

Patients with locoregionally advanced disease unfit for curative treatment in view of poor performance status or harboring metastatic disease at presentation ,merited for palliative RT.

Statistical Analysis

All data were recorded and analyzed on Microsoft Excel 2007 for Windows. Chi-square test was used for all categorical data. P value reports were two tailed and an alpha level of 0.05 was used to assess statistical significance.

RESULTS

1493 patients received radiotherapy as a part of definitive, adjuvant, or palliative cancer treatment.

Upfront palliative radiotherapy was administered to 467 newly diagnosed cancer patients. Male: Female ratio was about 1:1. [FIGURE 1]

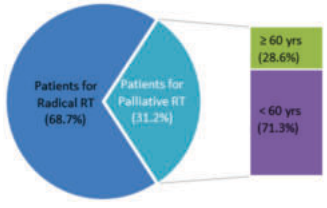


Figure1

71.3% patients receiving palliative RT were below the age of 60 years and among them 41.4% were below the age of 45 years. Median age at diagnosis was 45.9 years for male (range 9-60 years) and 46 years for female (range 10- 60 years). The youngest patient (aged 9 years) was stage IV Hodgkin's lymphoma with bone metastasis.

47.7 % presented with metastatic disease and rest had locally advanced malignancies and were unfit for radical treatment owing to poor performance status. [TABLE 1]

Table1

Characteristics	No.of patients (%)	
Total no.of patients	1493	
Total no.of patients for palliative RT	467	(24%)
-<60 Years of age	333	(71.4%)
->60 Years of age	134	(28.6%)
Male	240	(51.3%)
-<60 Years of age	68	(28.3%)
->60 Years of age	172	(71.6%)
-<45 Years of age	69	(44.4%)

Female	227	(48.6%)
-<60 Years of age	66	(29%)
->60 Years of age	161	(70.9%)
-<45 Years of age	69	(40%)

In male patients ,40.1% with head and neck cancer received palliative RT, followed by those with lung (15.6%) and prostate malignancy(6.3%). In head and neck carcinoma, the most common site for RT was primary tumor itself (88.4%) followed by bone metastasis (11.5%).

Among females, 37.2 % patients with breast cancer received palliative RT followed by carcinoma cervix (17.3%). For patients with breast cancer the most common site for RT was bone (55%) followed by brain metastasis (28.3%). [FIGURE 2]

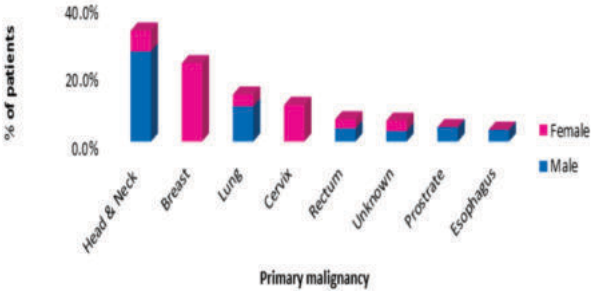


Figure2
Majority of patients received palliative RT to the primary tumor site (51.3%) followed by RT to bone (34.8%) and brain metastasis (10.8%).6 patients received palliative RT for nodal disease only.2 patients received RT for the primary site as well as for bone metastasis in different time frames. 1 patient received palliative RT for bone as well as for brain metastasis separated by a duration of 5 months. [TABLE 4]

Table4

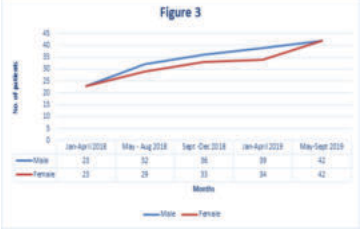
Site of palliative RT	Total no. of patients	Male	Female
Primary	171 (51.3%)	95	76
Bone	116 (34.8%)	56	60
Brain	36 (10.8%)	15	21
Others	11 (3.3%)	7	4

The most common fractionation schedule used was 30 Gy in 10 fractions (58.2%) followed by 20 Gy in 5 fractions (26.7%) [TABLE 5].

Table5

Fractionation schedule	Total no. of patients (%)	Male	Female
30Gy/10#	194 (58.2%)	105	89
20 Gy/5#	89 (26.7%)	43	46
25 Gy/4#	23 (6.9%)	17	6
8 Gy/ 1#	17 (5.1%)	5	12
Others	10 (3%)	2	8

A rising trend was observed with patients presenting with advanced disease in our study. While 13.8% patients presented in the first 3 months of study the figure rose to 25.2% presenting during the last 3 months of study period. This pattern of presentation was similar between the male and the female population (p-0.57) [FIGURE 3]



3 major causes of delay were identified and divided into primary and secondary delay. Primary delay consisting of self-negligence was the major cause of delayed presentation. It was more commonly associated with female patients. Use of alternative medicine was observed in 34.5 %. It was more in male patients as compared to the female patients (p- 0.003).

Secondary delay owing to gap between diagnosis and treatment was observed in 15.3% patients. No significant difference was observed between primary and secondary delay in the male and female population (p- 0.3).

DISCUSSION

The 5-year survival and overall cure rates for many cancers have shown a significant improvement over the past 40 years. But this figure holds true in developed countries where the treatment facilities are briskly evolving.[8] The situation is still grim in developing countries where poverty, personal neglect, and prevalent alternative medicine options are common practices. [9] In our study we found that around 41% newly diagnosed or treatment naïve patients were below the age of 45 years.

Numerous clinical trials have established the utility of radiotherapy in improving pain from tumor, improving neurologic function from brain or spine metastasis, or in reducing the tumor bulk.[10]

The most common cancer for males worldwide is lung carcinoma.[11] However, 40.1% male patients in our study had their primaries in the head and neck region. This can be contributed to the high abuse of tobacco-based products in this region.

The most common site for palliative RT was the primary carcinoma itself in almost half of the patients (51.3%). The most common metastatic site requiring RT was bone (34.8%).

The principal finding in the study was the increasing trend of patients presenting with such advanced diseases. Around 12 % increase was observed in the number of patients in 12 months as compared to the initial study period.

Limitations

It is limited due to small sample size and shorter observation period. Even though a large bulk of patients with stage IV disease had incurable cancer; a small subset of patients with oligo-metastatic tumors could have potentially curable disease, and therefore, RT may be administered with curative intent.

And lastly, primary and secondary delays in treatment have to be analyzed with more depth for other confounding factors.

CONCLUSION

A rising trend of advanced disease at presentation is being observed in younger age group. Due to which palliative radiation is bestowed at initial presentation itself. The primary cause for this appears to be patient related factors mostly self-negligence and use of alternative medicine treatment.

By understanding these patterns, better screening programs, early diagnosis and timely treatment can be initiated to cope up with this trend.

REFERENCES

1. Boyle P, Levin B (Eds). World Cancer Report 2008, IARC Nonserial Publication, WHO, Geneva (2008).
2. Fallon M. When morphine does not work. Support Care Cancer 2008;16:771-5. PMID:18274786
3. Kapoor A, Singhal MK, Kumar N, Kalwar A, Bagri PK, Narayan S, etal. Analysis of patterns of palliative radiotherapy in North West India: A regional cancer center experience. Indian J Palliat Care 2015;21:168-73. PMID: 26009670
4. Allgar VL, Neal RD. Delays in the diagnosis of six cancers: analysis of data from the National Survey of NHS Patients: Cancer. Br J Cancer 2005. Jun;92(11):1959-1970. PMID: 15870714
5. Dwivedi A , Dwivedi S , Deo S , Shukla R , Pandey A ,Dwivedi D. An epidemiological study on delay in treatment initiation of cancer patients. Health,2012; 4, 66-79. doi: 10.4236/health.2012.42012.
6. Sharma S, Hertan L, Jones J. Palliative radiotherapy: Current status and future directions. SeminOncol 2014;41:751-63. PMID: 25499634
7. vanOorschot B, Rades D, Schulze W, Beckmann G, Feyer P. Palliative radiotherapy – New approaches. SeminOncol 2011;38:443-9.PMID: 21600376
8. Allemani C,Matsuda T, Di Carlo V, Harewood R, Matz M, Nikšić M, et al. Global surveillance of trends in cancer survival 2000–14 (CONCORD-3): analysis of individual records for 37□513□025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71countries. Lancet.2018;391(10125):1023–1075. PMID: 29395269
9. Kruger C. Childhood cancer treatment in developing countries. Lancet. 2005; 365: 752–753. PMID: 15733712
10. Chow E, Harris K, Fan G, Tsao M, Sze WM. Palliative radiotherapy trials for bone metastases: a systematic review. J ClinOncol. 2007;25(11):1423–1436.PMID: 17416863
11. Bray F, Ferlay J, Soerjomataram I, et al. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2018;68(6):394-424. PMID: 30207593