Original Research Article

A STUDY ON INFORMATION NEEDS, EVALUATION OF QUALITY OF LIFE AND PAIN ASSESSMENT IN PATIENTS WITH METASTATIC CANCER RECEIVING PALLIATIVE RADIOTHERAPY

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ABSTRACT

Background: To evaluate information needs and pain assessment in patients with metastatic cancer receiving palliative radiotherapy. To evaluate pre and post radiation quality of life in these patients.

Materials and Methods: It is a Prospective study done in 50 Patients with Metastatic Cancers Receiving Palliative Radiotherapy for 2 years in patients age 18-75 in Histologically Confirmed Metastatic Cancers, Patients able to Comprehend and Understand the Questionnaires and ECOG Performance Score 1-3.

Results: QOL data from base line to 1st month follow up was available for 50 patients. Base line 1st month follow up with Paired Sample T-test, there was a significant improvement in Global health score (GHS) (p=0.032), Physical functioning (p=0.03), Role functioning score (p=0.02), Emotional functioning score (p=0.016), Cognitive functioning score (p=0.008), Social functional scale shows improvement but statistically not significant (p=0.590). Symptom scales Pain (p=0.03), Fatigue (p=0.02), dyspnea (p= 0.034), appetite loss (p=0.047), diarrhea (p= 0.009) and Insomnia (p=0.018) showed statistically significant improvement. Nausea and vomiting (p=0.189), financial difficulties score (p=0.161) showed improvement but statistically not significant. Constipation showed worsening one month after RT (p=0.497) but statistically not significant. 68% of patients presented with pain. Pain score taken before starting radiotherapy and one month after completion of radiotherapy by using Numeric pain rating scale. Mean pain scale score before RT 4.28, Mean pain scale score after one month RT 1.68, Showed statistically significant improvement in Pain reduction (p=0.000).

Conclusion: Patients with metastatic cancers who have received palliative radiotherapy have significant improvement in the Quality of life.

Keywords: Metastatic cancers, Palliative radiotherapy, Quality of life, Pain scale score.

INTRODUCTION

Cancer has become a huge burden and has become a global problem. Around 19.3 million new cases and almost 10 million cases deaths occurred in 2019. One defining feature of Cancer is the rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining parts

of the body and spread to the other organs, the latter process referred to as metastasis. Advanced disease and Metastasis are the primary cause of cause of death from cancer. The cancer management is quite long and can have its effect physically, psychologically and financially. The disease requires patients to learn about the illness, make decisions regarding treatment, and cope with the illness and therapy. It has been found that having relevant information helps patients understand the disease and understand the plan of management and deal with it in a better way. Now more than ever, cancer patients are expecting to know the nature of the disease and also information regarding its management. Information regarding the different options of management and different approaches could be beneficial to the patient and also the patient"s family. Little has been published to characterize the information needs and preferred sources of that information for patients who have completed cancer treatment. Provision of information can have a positive impact on the patient"s attitude. It improves coping ability, reduces anxiety and mood disturbances and allows the patient to prepare for the future.[1]

The most common cancer related symptom that radiation oncologists are called upon to asses and manage is cancer related pain. Pain is a complex symptom that is dynamically related to physical, emotional, social and spiritual aspect of illness and quality of life. Metastatic cancer induced pains a unique and complex pathophysiology characterized by nociceptive and neuropathic components. One of the main presenting symptoms what patients experience is pain especially in metastatic cancers. Proper assessment and management of pain are critical to improve the quality of life and health outcomes. More than the actual cancer management one of the main aim should be pain management.[2]

Cancer pain has been hypothesized to be multifactorial in its etiology. It is hypothesized to arise from induction of local inflammatory cytokines within the microenvironment with recruitment of inflammatory cells. These in turn promote sensitization and activation of primary afferent neurons. Additionally, cancer pain can arise from mechanical destruction and/or mass effect on normal tissues.

QOL has been defined by various groups in different ways. It is defined by WHO (World Health Organization) as an individuals perception of their own position in life, in the context of the culture and value systems in their life and relation to their goals, expectations, standards and concerns.[3] Existing cancer management not only affects the disease itself, but can also negatively impact the patient"s physical, psychosocial, cognitive, and other aspects of well-being which we call quality of life.

QOL studies have become an important measure especially in the field of oncology trials. These studies have helped oncologists to understand the impact of cancer therapy on the patients well-being and also to take a better decision to improve the overall QOL.

These studies can be used for patients in the future regarding patient"s related morbidities or resultant limitations in functional and emotional well-being that are likely to occur. Quality of life encompasses the minimization of risks and maximization of benefits of a treatment, including physical and psychosocial effects on the well-being of patients. Especially in metastatic cancers it is of outmost important as the management predominantly deals with the quality of life.[4]

The decrease in quality of life in metastatic cancers has been the main concern and palliative treatments have gained importance. Palliative care treatment is to relive, rather than cure, symptoms caused by cancer and to improve the quality of life of the patients and their families. Meaningful palliation refers to symptom relief and prolongation good quality survival. Palliative care can help people live more comfortably. It is particularly needed in places with a high proportion of patients in advanced stages of cancer where there is little chance of cure. Palliative radiotherapy is an important mode of management in those patients. Palliative radiotherapy has been effective in decreasing the symptoms and improving or preserving the quality of life.

RT is frequently utilized to treat pain caused by the underlying cancer. A multimodal management approach should be applied, starting with oral analgesics administered according to clinical practice guidelines, with simultaneous attention to the psychosocial and spiritual aspects of pain and illness.

MATERIAL AND METHODS

It is a Prospective study done in 50 Patients with Metastatic Cancers Receiving Palliative Radiotherapy from april 2019 to march 2020 in MNJ Institute of Oncology and Regional Cancer Centre.

Inclusion Criteria

Age 18-75 in Histologically Confirmed Metastatic Cancers, Patients able to Comprehend and Understand the Questionnaires and ECOG Performance Score 1-3.

Exclusion Criteria

ECOG Performance Status 0,4 and No Histopathological Proof of Malignancy and Pregnancy.

Methodology

Patients meeting the eligibility criteria will undergo routine treatment evaluation requiring a complete history physical examination, assessment of severity of symptoms (pain and other symptoms), and assessment of ECOG performance status, complete haemogram and renal function tests. Demographic details of the patient will be recorded.

Information needs will be assessed using cassileth"s information needs questionnaire before starting radiation therapy. Quality of life will be used prior to radiotherapy and one month after completion of radiotherapy by using EORTC qlq-30 questionnaire. Pain scale scores will be taken before starting

radiation therapy and one month after completion of radiation therapy using numeric pain scale rating. Statistical analysis of the data done using SPSS verrsion22.0 (statistical package for social sciences, and Chicago).

RESULTS

Age: Median age was 53 years. Mean age was 54 years, Range – 25-80 years. All patients were married one divorced and one widowed. ECOG performance status was maximum in 70% of patients. 56% of patients were illiterate are more in present study. 75% of patients had no comorbidities, 10% of patients had only hypertension, 8% of patients had only diabetes millets and 2% of patients had only thyroid disease. 5% of patients had mixed comorbidities. 86% of the patients belong to low socio economic class. 10% of patients belonged to Upper lower class, 4% were lower middle class as per Modified Kuppuswamy scale (2017). [Table 1]

The most common types of cancer primary were lung (38%), most common sites of metastatic cancer site were bone (76%). 68% of patients were presented with pain. 12% of patients presented with headache & vomiting. 6% of patients presented with bleeding per vagina. 6% of patients presented with Difficulty in swallowing. 8% of patients presented with Difficulty in respiration. 46% of patients were treated with NSAIDS. 28% of patients treated with weak opioids and 26% of patients were treated with strong opioids.

Our patients exhibited a strong need for information about illness and treatment. 88% of patients needed to know if the illness was cancer. Only 2/50 (4%) did not want to know if they had cancer, 44 (88%) said they absolutely needed to know or would like to know if they had cancer. 82% (41/50) of the patients indicated an absolute need to know the specific name of the illness. 43 (86%) had a strong desire to know the week by week progress, 35 (70%) wanted to know their chances of cure, 33 (66%) wanted information about all the possible treatment options, 41 (82%) wanted to know the possible side effects of treatment and38 (76%) wanted to know how the treatment works to treat the illness. [Table 2] Education status, socioeconomic status of patients did not influence desire for information.

QOL data from base line to 1st month follow up was available for 50 patients. Base line 1st month follow up. With Paired Sample T-test, there was a significant improvement in Global health score (GHS) (p=0.032), Physical functioning (p=0.03), Role functioning score (p=0.02), Emotional functioning score (p=0.016), Cognitive functioning score (p=0.008), Social functional scale shows improvement but statistically not significant (p=0.590). [Table 3].

Symptom scales Pain (p=0.03), Fatigue (p=0.02), dyspnea (p= 0.034), appetite loss (p=0.047), diarrhea (p= 0.009) and Insomnia (p=0.018) showed statistically significant improvement. [Table 4] Nausea and vomiting (p=0.189), financial difficulties score (p=0.161) showed improvement but statistically not significant. Constipation showed worsening one month after RT (p=0.497) but statistically not significant.

68% of patients presented with pain. Pain score taken before starting radiotherapy and one month after completion of radiotherapy by using Numeric pain rating scale. Mean pain scale score before RT 4.28, Mean pain scale score after one month RT 1.68, Showed statistically significant improvement in Pain reduction (p=0.000).

Table 1: Demographic variables

Variable	Value
Age in years	
Median	53
Mean	54
Range	25-80
ECOG performance status	
0	2(4%)
1	12(24%)
2	36(72%)
Educational status	
Illiterate	28(56%)
Primary education	11(22%)
Secondary school level	7(14%)
Graduates	4(8%)
Comorbidities	
No comorbidities	35(70%)
Hypertension	5(10%)
DM	4(8%)
Thyroid disease	1(2%)
Mixed comorbidities	5(10%)
Socio economic status(as per Modified Kuppuswamy scale (2017)	
low socio economic class	43 (86%)
Upper lower class	5(10%)
Lower middle class	2(4%)
Site	
Lung	38(76%)

Brain	8(16%)	
Lung	4(8%)	
Supraclavicular lymph nodes	1(2%)	
Symptoms		
Pain	34(68%)	
Headache & vomiting	6(12%)	
Bleeding per vagina	6(12%)	
Difficulty in swallowing	6(12%)	
Difficulty in respiration	8(16%)	
Medication		
NSAIDS	23(46%)	
weak opioids	14(28%)	
strong opioids	13(26%)	

Table 2: Cassileths information needs questionnaire

S. No.	Questions	Do not want to know	Would like to know	Absolute need to know	Leave up to doctor
1	Whether the illness is cancer or not	4%	66%	22%	8%
2	What is the specific medical name of illness	2%	14%	82%	2%
3	what is the week by week progress	4%	74%	12%	10%
4	What are the chances of cure	20%	60%	10%	10%
5	What are all the possible treatments	10%	50%	16%	24%
6	What are all the possible side effects of treatment	10%	66%	16%	8%
7	How the treatment works to treat the illness	4%	56%	20%	30%

Table 3: Mean QOL C30 Score for Functional scales

	Pre-RT score	1month post-RT score	P value
Global Health Status(GHS)	57.44	62.88	0.032
Physical Functioning(PFS)	56.72	76.84	0.003
Role Functioning(RFS)	68.84	80.66	0.002
Emotional Functioning(EFS)	79.56	85.94	0.016
Cognitive Functioning(CFS)	92.54	97.98	0.008
Social functioning (SFS)	73.7	76.44	0.59

Table 4: Mean QOL C30 Score for Symptom scales

	Pre-RT score	1month post-RT score	P value
Fatigue(FA)	30.64	7.16	0.002
Nausea and vomiting(NV)	6.8	4.28	0.189
Pain(PA)	59.42	32.4	0.003
Dyspnea(DY)	19.14	12.6	0.034
Insomnia(SL)	37.08	22.5	0.018
Appetite loss(AP)	27.88	17.82	0.47
Constipation(CO)	3.3	5.28	0.497
Diarrhea(DI)	8.1	3.3	0.009
Financial Difficulties(FI)	19.86	29.8	0.161

DISCUSSION

Patients information needs have changed substantially over the last decades until the 1980s information about the disease treatment and prognosis was assumed to increase patient"s emotional distress physical complaint and treatment refusal. Most physicians disclosed selected information only. Yet these assumptions were not supported by evidence such information later indicated that information disclosure yields positive effects on cancer patients physical and mental health, this insight and increase patient autonomy provoked a shift towards emphasizing cancer patients "right to receive full information about their medical condition.

Numerous studies show that most patients preferred to be fully informed and that diagnostic information and information about side effects is decided by all patients. Yet open and honest communication is not necessarily in the best interest of all patients some

prefer less information and rather avoid hearing every detail of the information. Quantitative studies report a minority of 5-36% of patients not wanting to know all their disease and their treatment. Qualitative studies instigated cancer patient"s consideration not to desire information more extensively. These found that cancer patients often did not wish all information about the disease and the side effects.[5]

Radiotherapy offered to all patients eventually given the complexity and the unpleasantness of the treatment and need for patients to understand and procedures and follow up advice informing them is essential still some patients want more and others less information. The radiation oncologist is expected to tailor information given to individual patients.

The results from this study show that the patients who have been diagnosed with cancer have a strong need for information about the disease as well as its treatment. 88% of the patients wanted to know that the disease was cancer, 70% wanted to know the chance of cure. 66% of the patients wanted to know

the various options they had for the management of the cancer.

The general misconception in India is that patients are passive about the information needs regarding cancer diagnosis and treatment. In a study conducted by Elkin, E.B., et al half of the patients (n=38; 52%) preferred a passive role in the treatment decision making process.[6] However this trend hasn"t been seen in our study. On the contrary most of the patients wanted to know about the diagnosis, its treatment and the different options they had for the management of the cancer.

Using the word "cancer" itself is perceived as stressful for the oncologist and the patient. There are many reasons why doctors avoid communicating a bad news to patients and their relations. Patient-physician communication has not been a standard component of oncology training. Back and Arnold show how a few simple questions can help oncologists distinguish patients who want explicit prognostic information from those who do not, and then proceed to share in information tailored to the patients preferences. Formal training programs, often including review and critique of videotaped encounters with actors or actual patients, may also improve physician"s communications skills. Even doctors are apprehensive about revealing the diagnosis and prognosis of the disease as it might lead to patients depression.[7]

As per coulter el at study failure to provide sufficient information about the illness and treatment is the most frequent source of patient dissatisfaction. Studies have found that patients who are well informed about prognosis and treatment options, including benefits, harms and side effects, are more likely to adhere to treatments.[8]

The main reason for withholding information about the diagnosis in cancer patients is that that families directly relate the diagnosis of cancer with death. Due to time constraints it might be difficult allotting enough time with each patient and this might lead to lower communication with the patient regarding the medical treatment. However, achieving the proper balance between the under-informed and overloaded patient is important because patient"s dissatisfaction with communication has been linked to non-compliance, "doctor Shopping," and general dissatisfaction. The need for information is universal even when patients doesn"t want participate in the making the treatment choice: "Most patients want to see the road map, including alternative routes, even if they don"t want to take the wheel.[9]

It has also been noticed that patients are aware of the nature and severity of illness and they regularly express their need for open communication. In our study education status, gender, age of patients did not influence the desire for information.

In patients with advanced disease treatment strategies aim to improve or maintain QOL over traditional end points such as survival. Radiation not only manages pain resulting from bone metastases but can also help and reduce analgesic intake and the side effect of analgesic which may negatively impact quality of life. Zeng, L., et al.[5] study showed that palliative radiotherapy not only improved the pain symptom but also overall Quality of life. In our study there has been a significant improvement in the symptom scales like pain (p value-0.00) fatigue (p value-0.00), functional scales like physical functioning (P-0.00), and role functioning (p-0.00) after receiving palliative radiotherapy.

Assessment of QOL is frequently conducted with validated tools either by the patients themselves or by proxy, although the reliability of the latter is controversial. Both the European organization for research and treatment of cancer and functional assessment of cancer therapy. Patients who achieve pain relief from palliative radiation also report better QOL in symptom and functional domains related to painful bone metastasis.[10,11]

Palliative Radiotherapy is a standard of care for definitive symptomatic relief. Our study showed majority of patients experience statically significant improvement in QOL especially pain after palliative Radiotherapy.

CONCLUSION

Patients diagnosed with cancer wanted to be fully informed regarding the type of cancer and also the various treatment options available they had irrespective of age, educational status, socio economic status and prognosis. Patients with metastatic cancers who have received palliative radiotherapy have significant improvement in the Quality of life. Patients with metastatic cancers main symptom was pain which significantly improved after palliative radiotherapy.

Limitations

All these questionnaires have been developed and validated in western countries. These questionnaires and their translation need to be validated in our population. Sample size is small. It is a Single institutional study.

REFERENCES

1. Mistry, A., et al., How do the information needs of cancer patients differ at different stages of the cancer journey? A cross-sectional survey. JRSM Short Rep, 2010. 1(4): p. 30.
2. Gattellari, M., P.N. Butow, and M.H. Tattersall, Sharing decisions in cancer care. Soc Sci Med, 2001.
3. Brom, L., et al., Congruence between patients" preferred and perceived participation in medical decision-making: a review of the literature. BMC Medical Informatics and Decision Making, 2014. 14(1): p. 25.
4. Kazi, R., et al., Quality of life outcome measures following partial glossectomy: assessment using the UW-QOL scale. J Cancer Res Ther, 2008. 4(3): p. 116-20.
5. Zeng, L., et al., Quality of life after palliative radiation therapy for patients with painful bone metastases: results of an international study validating the EORTC QLQ- BM22. Int J Radiat Oncol Biol Phys, 2012. 84(3): p. e337-42.
6. Elkin, E.B., et al., Desire for information and involvement in treatment decisions: elderly cancer patients' preferences and their physicians' perceptions. J Clin Oncol, 2007. 25(33): p. 5275-80.

7. Laxmi, S. and J.A. Khan, Does the cancer patient want to know? Results from a study in an Indian tertiary cancer center. South Asian J Cancer, 2013. 2(2): p. 57-61.

8. Coulter, A., Patient information and shared decision-making in cancer care. British Journal of Cancer, 2003. 89(Suppl 1): p. S15-S16.

9. Laxmi S, Khan JA. Does the cancer patient want to know? Results from a study in an Indian tertiary cancer center. South Asian J Cancer. 2013 Apr;2(2):57-61.

10. McDonald R, Chow E, Rowbottom L, Bedard G, Lam H, Wong E, Popovic M, Pulenzas N, Tsao M. Quality of life after palliative radiotherapy in bone metastases: A literature review. J Bone Oncol. 2014 Nov 18;4(1):24-31.

11. Cañón V, Gómez-Iturriaga A, Casquero F, Rades D, Navarro A, Del Hoyo O, Morillo V, Willisch P, López-Guerra JL, Illescas-Vacas A, Ciervide R, Martinez-Indart L, Cacicedo J. Quality of life improvement in patients with bone metastases undergoing palliative radiotherapy. Rep Pract Oncol Radiother. 2022 Jul 29;27(3):428-439.