



IMPACT OF EXERCISE BASED PHYSIOTHERAPY ON RELIEF STATUS OF CANCER PATIENTS AFTER RADIOTHERAPY: A CASE CONTROL STUDY

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ABSTRACT

Objective: Physiotherapists have an important role in the management of cancer pain and have specific skills which enable them to be patient-focused and holistic. The aims of the current study were to identify the pattern of cancer treatment-related pain (secondary cancer pain), assess the status of pain with, analgesic and application of physiotherapy and to compare pain status at rest and during functioning in patients receiving analgesic alone with patients receiving physiotherapy along with analgesics.

Methodology: 30 participants were categorized into two groups: case and control groups. The conventional exercises were applied on patients of experimental or case group (N=15) apart from analgesic therapy for pain relief whereas patients in control group were given analgesic alone (N=15).

Results: There was significant reduction in pain after convention physiotherapy management in subjects both at rest and during activity.

Conclusion: The study assured the efficacy of exercise based physiotherapy on secondary pain in patients receiving radiotherapy.

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INTRODUCTION

The incidence of cancer is increasing at a rapid rate worldwide. The pain in cancer patients may be caused due to any of the following mechanisms: direct tumor involvement, diagnostic or therapeutic procedures, adverse effects of cancer treatment.¹ Pain in cancer survivors is a common problem, encumbering the recovery and rehabilitation of patients who have beaten cancer and deleteriously impacting on cancer patient's mental health, work prospects and quality of life.²

The cancer treatment related pain is often termed as secondary cancer pain such as pain after initiation of anticancer treatments such as chemotherapy (e.g., neuropathy), radiation therapy (e.g., mucositis), or surgery (e.g., postoperative pain).³ World Health Organization (WHO) analgesic ladder management is currently the most accepted and widely used pain management strategy in patients with cancer pain.¹ Physical therapy interventions form a part of non-pharmacological interventions that include a variety of therapeutic methods for pain relief in cancer survivors.⁴

Exercise can play important roles for the cancer survivor as it has been shown to improve physical and psychosocial adverse effects, improve metabolic, cardiovascular, and immune function, help restore homeostasis, and improve quality of

life.⁵ Evidence report that despite the many benefits of physiotherapy, it is often underutilized in the oncology setting. Physiotherapists have an important role in the management of cancer pain and have specific skills which enable them to be patient-focused and holistic.

Thus, the aims of the current study were to identify the pattern of cancer treatment-related pain (secondary cancer pain), assess the status of pain with, analgesic and application of physiotherapy and to compare pain status at rest and during functioning in patients receiving analgesic alone with patients receiving physiotherapy along with analgesics.

MATERIALS AND METHODS

All patients who underwent cancer treatment by radiotherapy and were suffering from secondary cancer pain in age group of 18-60 years of both the genders were eligible for the study. 30 participants were recruited from the J.K. cancer hospital of Kanpur. The patients had to be able to participate in required tests, and to read and understand the native language. Patients with lymphedema were excluded. ethical approval was obtained from the institute and written informed consent was obtained from each patient. Sample of convenience was used.

The participants were categorized into two groups: case and control groups. The conventional exercises were applied on

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patients of experimental or case group (N=15) apart from analgesic therapy for pain relief whereas patients in control group were given analgesic alone (N=15).

The conventional physiotherapy included individually adapted mobilization, exercises for range of motion (shoulder elevation, shoulder flexion while taking a deep breath, horizontal shoulder abduction with hands at the neck while taking a deep breath, and thoracic rotation, hip and knee active range of motion, ankle pumps to be performed at least twice daily five repetitions per exercise each time), and breathing exercises (three sets of 10 deep breaths, performed every two hour) with instructions on coughing/huffing. All patients in the treatment group received about the same amount of physiotherapy for 15 days. VAS was used to assess the pain status in both the groups (during rest and during activity) and was measured before starting of intervention and the post intervention (during rest and during activity) after 15 days.

Statistical Analyses

Comparison of actual and predicted 2MWD was done by using t test. A two tailed p value <0.05 was considered as statistically significant All the analysis was done using Microsoft Excel 2007 (Microsoft Corporation, Washington) and software SPSS 16(SPSS, Inc, Chicago, Illinois).

RESULTS

There was significant reduction in pain after convention physiotherapy management in subjects both at rest and during activity.

Table 1 Mean VAS scores of patients of case – control groups for pain status

Groups	At Rest			During Activity		
	Pre -test VAS score	Post- test VAS score	P value	Pre -test VAS score	Post- test VAS score	P value
Control , n=15	8	04	0.46	9	05	0.67
Experimental (case), n=15	8.5	02	0.04*	9	03	0.031*

*A two tailed p value < 0.05 was considered as statistically significant

DISCUSSION

The main finding from this trial was that patients who receive physiotherapy had significantly more improvement in pain status than patients not receiving physiotherapy.

Medical patients admitted to hospital spend more than 80% of the time lying in bed, and patients who have undergone radiotherapy spend the majority of their time in hospital being sedentary.⁶ The patients in our sample were also quite inactive. Physical activity has been positively associated with control of symptom burden.⁷

Exercise plays important role for the cancer survivor as It has been shown to ameliorate physical and psychosocial adverse effects, improve cardiovascular, immune and metabolic function, help restore homeostasis and improve quality of life.⁵ Physiotherapy provides strategies to help survivors in restoring their physical function and strength so that they can return to work.

Muscle contraction-induced myokines help maintain healthy tissue function, metabolism, immunomodulation, and embryogenesis throughout the body.⁸

The benefits of exercise and increased physical activity on people cancer survivors are many, including improved function, quality of life, strength, and endurance, and reduced pain.⁹ Evidence reported improvements in shoulder range of motion and function in women with breast cancer undergoing radiation therapy with exercises which involves whole body movements with breath control.¹⁰

There were few limitations of the study: sample of convenience was used, we were not able to assess continuous pain status of subjects.

CONCLUSION

The study assured the efficacy of exercise based physiotherapy on seconady pain in patients receiving radiotherapy. Combining physical therapy intervention with other pharmacological and non pharmacological methods of pain control can be promising strategy in controlling pain in cancer survivors.

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