



## THE EFFECT OF GRADED THERAPEUTIC EXERCISES AS A PALLIATIVE CARE IN PATIENTS UNDERGOING CHEMOTHERAPY ON THEIR QUALITY OF LIFE IN CANCER SURVIVORS.

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### ABSTRACT

**Introduction:** Cancer is the leading cause of death in the world accounted for approximately 7.6 million deaths. The treatment plan includes surgery, radiation and chemotherapy which has its own side effects. Due to the side effects the individual loses his health and causes many musculoskeletal, cardio respiratory complications. The main aim of this study was to explore the effects of graded exercises as a palliative care in patients undergoing chemotherapy on their quality of life.

**Method:** 30 patients participated in the study, out of which 16 females and 14 males participated in the study. All the patients were assessed for musculoskeletal and respiratory complications.

**Results:** The outcome measure used was FACT-G and VAFS scale from which the results were determined. The results showed that FACT-G in group B was  $49 \pm 3.91$  which was increased to a mean of  $69.26 \pm 3.90$  post intervention.. The mean VAFS score pre intervention was  $4.13 \pm 1.32$  which was increased to a mean of  $7.2 \pm 1.23$  post intervention.

**Conclusion:** Thus there is effect of graded therapeutic exercise in improving the health of patients undergoing chemotherapy.

**KEYWORDS :** cancer, exercise, palliative care, graded exercises, FACT-G

### Introduction

Cancer is the leading cause of death accounting for about 7.6 million deaths worldwide. It is an abnormal growth of cells.<sup>1</sup> There are 100 or more types of cancer which have the tendency to divide and invade the neighbouring cells and spread to other parts of the body. Basically there are two types of cancer- benign and malignant. All the types of cancer affect humans. The signs and symptoms include an abnormal growth i.e lump, abnormal bleeding, cough, unexplained weight loss, pain, sweating, fever, fatigue, indigestion etc. Oncogenes are the cancer causing genes which are present in high levels and due to mutation it leads to cancerous changes in the tissues.<sup>5</sup>

The treatment plan of cancer in today's era includes- surgery, radiation and chemotherapy. Chemotherapy is used to destroy the cells of cancer by using drugs. It helps by destroying and keeping the cells from growing and helps to protect the neighbouring cells.<sup>7</sup> As this drugs are so powerful that they cause damage to healthy cells also.. The goals of chemotherapy depend on the type of cancer and its main aim is to get rid of all the cancer. Side effects of chemotherapy includes fatigue, hairloss, nausea, vomiting, appetite changes, nerve and muscle problems, numbness and tingling sensations, weight changes, mood changes, fertility problems, changes in libido and sexual function etc.<sup>10</sup>

To overcome and improve the quality of life with chemotherapy palliative care and exercises should also be implemented. Palliative care improves the quality of life of patients and helps in managing distressing and debilitating symptoms. Palliative care is also called as end care which is generally implemented in life threatening situations. The primary goal of palliative care is to improve the quality of life. It helps the patient to feel better and reduce physical, emotional, spiritual and psycho- social distress. All stages of cancer patients receive palliative care in some or other time in their life. Multiple national medical guidelines recommend early palliative care for patients whose cancer has produced distressing symptoms or who need help coping with their illness.<sup>7</sup>

Palliative care along with exercises has shown to be of great importance. Exercises has always been shown to have positively affect the quality of life for cancer patients and increase their cardiovascular strength, muscular strength and endurance, flexibility, balance and coordination..many studies has also shown that regular exercise not only helps cancer survivors but also give them a better quality of life and improves their physical fitness. One

of the most often side effect of chemotherapy is 'chemo brain', where there is mental cloudiness that that results in short attention spans and difficulty remembering common words, names and dates. Radiation and chemotherapy also causes fatigue which develops feeling of despair and anxiousness.<sup>9</sup>

Exercises improves the level of serotonin which elevates the mood and improve cognitive thinking. Exercises also have shown to have linked with increased life expectancy and decreasing the risk of cancer recurrence. The main problems which the long term cancer survivors face are related to social/emotional support, health habits and spiritual/ philosophical view of life.<sup>2</sup>

So by utilising physiotherapy skills, graded exercises along with palliative care will provide a good improvement in quality of life and also to manage the side effects nad contribute positively for functional outcomes.

### Materials and methodology

#### Methods

##### Subjects:

A simple random sampling was done with envelope technique and 30 patients were taken into the study out of which there were 16 females and 14 males. Exclusion criteria stated those patients who were not willing to participate and who suffered from any other comorbidities which made physical exercise contraindicated.

##### Procedure-

30 participants were divided into 2 groups, where group A receive chemotherapy and group B received chemotherapy as well as exercises. The outcome measured used in this was FACT-G ( Functional Assessment of Cancer Therapy- General Version 4) and VAFS ( Visual Analogue Fatigue Scale). The exercises given to group B was for 12 weeks. The baseline treatment for both the groups was chemotherapy and medications.

The duration of the exercises given was of 20-30 minutes as per the patients strength and convenience. First low intensity exercises will be started and gradually moderate intensity exercise was implemented. The pre test and post test values were recorded before and after 12 weeks.

### Data Analysis

#### STATISTICAL ANALYSIS

MS-Excel-2007 was used to enter the data which was analyzed using

instat software. Descriptive analysis for numerical data consists of mean with standard deviation (SD) for various parameters. Intra Group comparison (within Group) was analyzed statistically using paired t test for FACT-G and VAFS Scale Scores, inter Group comparison (between Group) was analyzed statistically using unpaired t test. P value less than 0.05 was considered to be statistically significant.

**RESULTS**

A pre treatment outcome measure using FACT-G and VAFS was done. The specific treatment protocol was followed as per the Group for 12 weeks and the post treatment outcome using FACT-G and VAFS were documented accordingly. An exercise program was designed and a proper ergonomic advice was given.. Intra Group comparison (within Group) was analyzed statistically using paired t test for FACT-G and VAFS Scale Scores. In the Group A, the mean FACT-G score on pre intervention was 52.73 ± 4.43 which was increased to a mean of 54.8 ± 5.04 post sessions. The P value by Paired t test was found to be 0.0009 which is extremely significant. In Group B, the mean FACT-G score on pre intervention was 49 ± 3.91 which was increased to a mean of 69.26 ± 3.90 post intervention. The P value by Paired t test found to be < 0.0001 which is extremely significant.

In the Group A, the mean VAFS score on pre intervention was 3.96 ± 1.48 which was increased to a mean 5.53 ± 1.49 of post sessions. The P value by Paired t test was found to be < 0.0001 which is extremely significant. In Group B, the mean VAFS score on pre intervention was 4.13 ± 1.32 which was increased to a mean of 7.2 ± 1.23 post intervention. The P value by Paired t test found to be < 0.0001 which is extremely significant.

**MEAN AND SD OF THE VARIABLES**

Variables	Mean + SD
No. Of subjects	30
% males	46.66%
% females	53.33%
Age – group A	56.3 ± 9.53
Age- group B	63.5 ± 9.24

**Table no -1 Mean and SD of variables in adults**

FACT- G		VAFS					
GROUP A		GROUP B		GROUP A		GROUP B	
Pre -test	Post -test	Pre -test	Post -test	Pre -test	Post -test	Pre -test	Post -test
52.73± 4.43	54.8 ± 5.04	49 ± 3.91	69.26 ± 3.90	3.96 ± 1.48	5.53 ± 1.49	4.13 ± 1.32	7.2 ± 1.23

**Table no -2 Scores and values of outcome measures.**

**Discussion**

As earlier said the leading cause of death in the world is cancer and due to chemotherapy many side effects occurs which make the patient vulnerable and completely dependent on others.

For cancer patients and survivors, the American College of Sports Medicine recommends the following guidelines:

Take part in regular physical activity, avoid inactivity and return to normal daily activities as soon as possible, aim to exercise at least 150 minutes per week, make sure exercise recommendations are tailored to your individual diagnosis, pay close attention to your body's response to certain activities to avoid injury, include strength training exercises at least two days per week, if recommended by a doctor.<sup>11</sup>

30 patients (14 Males and 16 Females), were taken into the study. The age Group was between 40-75 years .Study place was Krishna

College of Physiotherapy, OPD. Patients were evaluated and were divided into two Groups by convenient sampling with random allocation. Group A Included 15 subjects treated with chemotherapy. Group B included 15 subjects treated with graded therapeutic exercises, counselling and palliative care. A pre treatment outcome measure using FACT-G and VAFS was done. The specific treatment protocol was followed as per the Group for 12 weeks and the post treatment outcome using FACT-G and VAFS were documented accordingly. An exercise program was designed and a proper ergonomic advice was given.

The main purpose of this study was to find the effect of exercises as a palliative care in patients undergoing chemotherapy and also to improve the quality of life of patients as well as to improve the functional outcome.

**Conclusions**

This study suggests that there is significant association between the graded exercises and palliative care in patients undergoing chemotherapy i cancer survivors.

**Limitation and Recommendations**

The limitation of this study is the study can be done on large scale and for a longer period of duration and where a larger sample could be used.

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