

A new interdisciplinary approach for oncological patients: Complementary treatments, isolated or combined intervention?

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ABSTRACT

Cancer patients suffer a clear decrease in their quality of life due to the numerous side effects and sequels produced by the treatments and the disease itself. Scientific evidence confirms that work with physical exercise, physiotherapy, nutrition and psychology provide numerous benefits for these patients. At the UAPO Foundation we address these areas in an interdisciplinary manner, uniting these treatments that are normally given in isolation. In this way it could be verified whether people who have or have had cancer obtain a higher quality of life with our work. Physical exercise is the main axis with a frequency of two 60-minute sessions per week accompanied by nutritional, psychological and physiotherapeutic assistance.

Keywords: Physical exercise, Cancer, Nutrition, Physiotherapy, Psychology, Quality of life.

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INTRODUCTION

According to calculations by REDECAN (Spanish Network of Cancer Registries), in 2024, there will be an estimated 286,664 new cases of cancer in our country. The majority of these cases will suffer a decrease in their quality of life due to the numerous side effects and sequels produced by oncological treatments (Spanish Society of Medical Oncology (SEOM), 2024, p.7).

The UAPO Foundation was created with the aim of improving the quality of life of patients who have or have had cancer through adjuvant treatment and consists of four areas: psychology, nutrition, physiotherapy and physical exercise. Clear evidence shows that working these areas independently improves the quality of life of cancer patients and tolerance to the side effects of treatments.

Knowing that patients can benefit from these complementary treatments, this unit tries to answer whether a holistic approach to these areas would obtain better results than if they were treated individually. If it is shown that, indeed, the benefit is greater, one could even hypothesize whether this would mean a reduction in public health costs.

MATERIAL AND METHODS

The UAPO methodology treats each patient within the four areas seeking to achieve the following objectives:

Main objective: Improve the quality of life of cancer patients.

Secondary objectives:

- Improve the patient's physical condition.
- Improve any sequels or injuries caused by the treatments.
- Increase patients' autonomy in their daily living activities.
- Improve body composition, prioritizing the improvement of muscle mass.
- Evaluate if there is an improvement in emotional management.

Participants: inclusion/exclusion criteria

Currently at the UAPO Foundation, more than four hundred patients with different cancer diagnoses are being treated in an interdisciplinary manner, in our four areas (breast 49.2%; colon 8.2%; prostate 6%; lung 5.4%; ovarian 5%; kidney 3.7%; myeloma 3.7%; lymphoma 3.7%; stomach 2.5%, brain 2.5%; others 10.1%). To access treatment from the UAPO foundation, patients must meet the inclusion criteria (see Table 1).

Table 1. Inclusion criteria.

Inclusion criteria
Patients with a minimum age of 4 years.
Participants with a diagnosis of any type of malignant cancer.
Participants in any phase of treatment. From the survival phase to a maximum of one year after completing treatment.
Participants with physical sequels derived from oncological treatments.
Be able to understand the instructions, programs and protocols of the study
Signing of an informed consent.

INTERVENTION

The intervention in the unit begins with a mandatory initial assessment that consists of:

Anamnesis

Initial interview detailing disease status, treatments received before and currently, non-oncological medication, sequels secondary to treatments, injuries and/or diseases prior to the oncological process. Injuries and/or sequels are measured through: joint assessment (goniometry), muscle assessment (Daniel's test), lymphedema (circometry), cardiotoxicity (medical report), scar status (Vancouver scale), pelvic floor dysfunctions (scheme). PERFECT and modified OXFORD scale).

Physical condition assessment

Different tests are carried out in which it is assessed; dynamic balance (Y balance test); manual grip strength (Hand grip); functionality (Sitting Rising test); the strength and power of the lower body (Sit to stand 5 times test); upper body strength and power (10RM bench press), recovery capacity (Ruffier Test) and cardiorespiratory and functional capacity (Six-minute walk test)

Nutritional assessment

Based on 24-hour food recall, food consumption frequency questionnaire, assessment of nutritional status through Subjective Global Assessment, and body assessment through electromagnetic bioimpedance and anthropometric measurements based on the ISAK protocol.

Psychological assessment

Through questionnaires, of anxiety levels (BAI. Beck Anxiety Inventory), symptoms of depression (BDI II. Beck Depression Inventory), self-esteem levels (RSE. Rosenberg Self-Esteem Scale) and general health status and quality of life (SF-36, version 2).

After the initial assessment, a physical exercise intervention group is assigned that will consist of two weekly sessions of concurrent strength and cardiorespiratory training lasting 60 minutes divided into warm-up, main part and cool-down. Each patient works in groups of a maximum of 4 people, although each case will be treated individually.

In the area of physiotherapy we can differentiate two forms of work:

- Treatment in consultation. These sessions, assigned at the discretion of the physiotherapist, are individualized and last 50 minutes.
- Rehabilitation treatment/therapeutic exercise. Its frequency is two weekly sessions with a maximum of two patients per group and they last 60 minutes.

In the areas of nutrition and psychology, the interventions are assigned depending on the responsible professional with a duration of 60 to 90 minutes.

JUSTIFICATION

Scientific evidence supports the benefits that the different work areas of the unit can have on cancer patients.

An adequate psychological intervention that facilitates emotional management positively benefits both the oncological process and the adaptation to the effects of the treatments. Various psychological factors, such

as the response to stress, can generate biological and behavioural changes in the face of the disease. Certain personality traits and coping styles influence the patient's quality of life (J.P. Arbizu et al., 2009).

During cancer, the patient's nutritional status may be affected. Conditions such as cachexia, sarcopenia, obesity or osteoporosis are highly prevalent in this population, negatively impacting treatment tolerance, hospital stay, post-surgical recovery, physical capacity, and the patient's quality and life expectancy. In turn, due to the amount of contradictory information about diet and cancer, patients feel confused, which increases the risk of suffering from eating behaviours that are detrimental to the prognosis of the disease and their psychosocial health. (Arends et al., 2017; Prado et al., 2021; Ford et al., 2022).

Physical exercise has been shown as an effective tool for cancer prevention and as another treatment, during and after the disease. Strength, muscle mass and cardiorespiratory capacity have proven effective in improving quality of life, tolerance to treatments and their effectiveness, as well as alleviating the side effects derived from them (Schmitz, 2020).

There are many reasons why strength training will help preserve health, since first of all, cancer survivors who are physically active and incorporate a day of strength training have a 33% lower risk of death (Hardee et al., 2014).

Based on this, it is crucial to emphasize not only muscle mass, but also the good function of the muscle itself, since, without good functionality, the fact of having muscle mass is not protective in itself. (Newman et al., 2006).

Physiotherapy is a key piece before, during the course, and after the completion of cancer-related treatments. Pre-rehabilitation is basic and has been proven effective in improving the quality of life of these patients during treatments, improving mobility, elasticity and muscle strength. During the medical process, physiotherapy focuses on the treatment of symptoms and sequels caused mainly by possible surgeries, chemotherapy, radiotherapy, etc., using different techniques (Cancer Prehabilitation Programs and Their Effects on Quality of Life, 2018).

McLeod et al., 2019 saw how the quality of life and the completion rate of therapies seem to be higher in people who have greater muscle mass or include strength training during the disease. Furthermore, it has been seen that preserving muscle mass can be a good prognostic indicator for an adequate response to certain drugs (Shiroyama et al. 2019).

In conclusion, the UAPO Foundation seeks to answer whether interdisciplinary treatment is more effective than individualized treatment for patients who have or have had cancer.

AUTHOR CONTRIBUTIONS

Margarita Torices, Paloma Issa-Khozouz and Raquel Galán are the main authors of the article. Tania Barroso is the author of the section "*Psychological Assessment*" and the psychologist in charge of carrying out this assessment in the Unit. Arancha Mazo is the author of the section "*Nutritional Assessment*" and the nutritionist in charge of carrying out this assessment in the Unit. Celia Aroca, Cristina Maroto, Francisco Torró, José Manuel Morales and David Garrido are the physical educators of the unit who contribute to the multidisciplinary work. Ana Isabel Gonzalez, Marta Guardia, Miguel Castellanos and Alfonso Álvarez are the

unit's physiotherapists who contribute to the multidisciplinary work. Javier Cánovas is the General Manager of the Unit.

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No potential conflict of interest was reported by the authors.

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