

Resistance versus aerobic training in clinical practice

Khaled El Said Omer El Hamaky¹ , Heba Ali Abdlghafar¹, Dr. Shymaa Mohamed Ali ¹

¹Department of Physical Therapy for Cardiovascular/ Respiratory Disorder and geriatrics,
Faculty of Physical Therapy, Cairo University, Egypt

Corresponding Author:

Khaled El Said Omer El Hamaky, Faculty of Physical Therapy, Cairo University, Address :
Egypt ,Giza. Telephone:00201111661822.Email: khaledelhamaky07@gmail.com

ABSTRACT

A Mini-Review

Prostate cancer remains the most frequently diagnosed non-skin malignancy in male patients, still representing one of the main causes of cancer-related death worldwide. Many men who have survived prostate cancer continue to experience symptoms like fatigue, limited ability to exercise, and weakened muscles. Prostate cancer is a highly androgen-dependent disease. so hormonal therapy has undergone iterative advancement, from the types of gonadal testosterone deprivation to modalities that block the generation of adrenal and other extra gonadal androgens. However, androgen deprivation therapy (ADT) causes metabolic syndrome in over 50% of patients receiving long-term therapy for prostate cancer. Hyperinsulinemia, hypertension, central obesity, loss of muscle mass, and dyslipidemia are the various components of metabolic syndrome, which can eventually lead to increased cardiovascular disease and mortality. It has been demonstrated that physical activity alleviates metabolic syndrome symptoms and exercise interventions including aerobic and resistance exercises, may change cardio metabolic risk factors in patients undergoing ADT. Regular exercise has been reported to improve these patients' muscle mass, strength, and physical and psychological well-being. So aerobic and resistive exercises are used to improve fatigue and muscle weakness.

Keywords: resistive exercise, functional capacity, muscle fatigue, prostatic cancer.

INTRODUCTION

Prostate cancer develops when abnormal cells in the prostate gland grow in an uncontrolled way, forming a malignant tumor. Prostate cancer is a major cause of disease and mortality among men, and each year 1.6 million men are diagnosed with, and 366,000 men die of prostate cancer (1). The incidence and mortality of prostate cancer worldwide correlate with increasing age. The average age at the time of diagnosis is 66 years., for African American men, the incidence rates are higher when compared to white men, with 158.3 new cases diagnosed per 100,000 men and their mortality is approximately twice as white men (2). Prostate cancer risk factors that are well-established include black ethnicity, advancing age, and family history. Meanwhile, an increasing number of dietary and lifestyle factors, such as obesity, fitness, diabetes mellitus, dietary patterns, and vitamin E supplementation, have been linked to an increased risk of prostate cancer (3). Early-stage prostate cancer may not cause any symptoms. However, Lower urinary tract symptoms (LUTS), which include nocturia and a weak urine stream, erectile dysfunction, and obvious hematuria, are symptoms that are typically associated with prostate cancer (4). Resistance-based exercise during ADT or after treatment has been shown to significantly improve quality of life and reduce fatigue in prostate cancer patients during the past ten years. some of these trials have also shown modest improvements in symptoms of depression and anxiety (5). Physical activity alleviates metabolic symptoms and exercise interventions including aerobic and resistance exercises, may change cardio metabolic risk factors in patients undergoing ADT. Regular exercise has been reported to improve these patients' muscle mass, strength, and physical and psychological well-being (6). There are several beneficial effects for prostate cancer patients prostate cancer patient

undergoing resistance exercises (RE). lower and upper body muscle strength and cardiovascular fitness as well as measures of body composition increased significantly .Regarding body composition, (7). Physical performance parameters significantly increased with RE. Further, prostate cancer patient significantly improved upper and lower body strength while performing RE which we argue could decrease fall risk and increase ADL performance (8).

DISCUSSION

Most countries have shown improvements in , prostate cancer mortality in recent years. Androgen deprivation therapy (ADT), which is typically used to treat prostate cancer, especially its hormone-dependent variants, is associated with several side effects, including fatigue, gynecomastia, hot flashes, anemia, loss of libido, muscle mass loss, increased fat mass, insulin resistance, and sexual dysfunction (9). Most of the research on RE's effects was done on prostate cancer patient receiving ADT has demonstrated that RE, either by itself or in conjunction with aerobic exercise, improves prostate cancer patient body composition, muscular strength, cardiovascular capacity, physical functioning, and tiredness (10). In prostate cancer patients, resistance exercise training counteracts the adverse effects of ADT on body composition, muscle mass, muscle strength, and aerobic capacity, with no additional benefits of protein supplementation (11). In addition, resistive exercises improve quality of life and reduce fatigue, using 6mwt to assess the result was ($P=0,018$) (12). Resistive exercises were reported to be an effective intervention to counteract fatigue during treatment in contrast to radiotherapy Intervention. The results performing at least two sets of 8 to 12 repetitions of resistive exercises training at 60–75% of

the maximum one repetition two to three times a week is recommended (13).

Conclusion

Resistance training either alone or combined with aerobic exercises is a powerful treatment option used in rehabilitation to enhance functional capacity and alleviate fatigue in prostate cancer survivors.

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