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Clinical Characteristics and Body Composition in Men with Metastatic Prostate Cancer

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Introduction

When compared to males of other races or ethnicities, Black men have the greatest incidence and lowest survival rates for prostate cancer (PC), the most common malignancy detected in men. Despite the fact that most PC patients are diagnosed with localised disease, 10 to 20 percent of men eventually develop metastatic prostate cancer from scratch (MPC). Each year, this illness gets a little worse in developed nations. MPC signifies prostate cancer (PC) that has migrated outside of the prostate gland, most frequently to the bones, distant lymph nodes, liver, and other organs. Despite the fact that this condition is very treatable thanks to developing therapeutic options, it is nonetheless incurable. Androgen deprivation therapy (e.g., antiandrogens and gonadotropin-releasing hormone agonists) with or without chemotherapy is the first line of treatment for hormone-sensitive MPC (e.g., docetaxel).

For patients with a heavier illness burden and good performance status, chemotherapy is utilised more frequently. Patients with inferior performance level and/or a preference for oral over intravenous medicines are given ant hormonal medications as their only course of treatment. Interestingly, Black men treated with frontline therapy for MPC have better clinical outcomes than White men treated with comparable regimens, despite having greater risk disease profiles [1].

Description

Both myosteatosis (i.e., fatty infiltrating SM) and sarcopenia (i.e., decreases in skeletal muscle mass) are regarded as unfavourable body composition phenotypes linked to impaired nutritional status and metabolic changes. These disorders have become indicators of chemotherapy toxicity, a shorter time to tumour progression (TTP), and a lower overall survival rate within the broader context of metastatic disease (OS). Low levels of SM are associated with faster disease progression and lower overall survival (OS) for males with MPC using antiandrogen treatments and single-agent chemotherapy, according to evidence from a recent study on body composition in the MPC scenario [2].

Clinical Data

The electronic health record was used to acquire demographic (such as self-reported race, marital status, and insurance) and clinical information (such as presenting symptoms, medical treatments, laboratory values, smoking status, height, weight, and radiological reports) (EHR). All patients had androgen deprivation therapy, either with or without chemotherapy, using androgen receptor inhibitors, gonadotropin-releasing hormone mimics, or gonadotropin-releasing hormone antagonists (docetaxel). Patients were chosen for participation in our trial if they had been given a hormone-sensitive MPC diagnosis and had not previously received any frontline systemic treatments for metastatic disease. The number of months from the date of the death recorded in the hospital cancer registry, electronic health record, or made publicly available was the length of the follow-up period. Men were appropriately censored at their last known interaction if the death date was uncertain.

Archived computed tomography (CT) images were requested for eligible patients from the Department of Radiology in order to assess body composition. In order to evaluate pre-treatment body composition, diagnostic pictures were used. The subsequent CT imaging, if available, was utilised to evaluate changes in body composition. A radiology technician retrieved the requested test from the Picture Archiving and Communication System and found the axial slice that included the third lumbar (L3) region [3].

Clinical outcomes included time to tumour progression (the amount of time between the diagnosis and the change in therapy as a result of biochemical and/or radiologic evidence of illness) and overall survival (time elapsed from diagnosis to date of death). Docetaxel's first two cycles were followed by an evaluation and analysis of toxicities. This window depicts a period of time during which dose reductions or dosage suspensions (events used to convey clinical significance) are necessary for succeeding cycles and during which disease development is less likely to take place [4].

SM and adipose tissue make up the body composition, a group of tissue biomarkers with possible prognostic significance. Due to recent technical advancements, particularly the accessibility of free or paid analytical tools, assessing body composition utilizing image-based technologies has gotten considerably simpler. As a result, we now recognize the negative connections between SM anomalies and a variety of tumor forms worldwide. The unfavorable link between antiandrogen therapy, reductions in SM health, and increasing obesity in men with early-stage prostate cancer is widely acknowledged [5]

Conclusion

Antiandrogen medications abruptly stop the production of testosterone by design. This in turn has repercussions for the hypogonadal-obesity cycle by having a direct, detrimental effect on protein synthesis. This intricate pathophysiological process includes abnormalities in the endocrine, neural, and adipokine systems. In research evaluating the prevalence and effects of aberrant body composition, men with MPC are generally underrepresented. Since men with MPC are more likely to present with obesity or low levels of SM, they represent a particularly susceptible patient population. Frontline medications that have been shown to increase weight gain and induce SM deterioration may then make these issues worse. Our preliminary findings thus add to the scant body of knowledge on men with MPC and offer new information on body composition by racial group.

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None.

Conflict of Interest

The author shows no conflict of interest towards this manuscript.

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