

BREAST CANCER IN MEN: AN EPIDEMIOLOGICAL OVERVIEW OF THE DISEASE IN THE CENTRAL-WEST REGION OF BRAZIL OVER THE LAST 40 YEARS

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ABSTRACT

Advances in medicine and science have brought advanced care techniques, but significant challenges remain, especially in relation to rare diseases such as male breast cancer. This neoplasm is rarely discussed and often underserved due to its much lower prevalence in men compared to women. In this context, the objective of the present study is to identify the risk factors for the development of male breast cancer and describe the therapeutic measures for its resolution. The work is configured as an analytical, quantitative, descriptive, retrospective study, which was carried out based on data collected from platforms, in addition to the use of data and information collected from the Notifiable Diseases Information System (SINAN) of DATASUS. The analysis of the studies and data reveals that the main risk factors for male breast cancer include advanced age at diagnosis, genetic factors such as mutations in the BRCA1 and BRCA2 genes, Klinefelter syndrome, positive family history, hormonal changes, occupational exposures, diet, and alcohol consumption. The standard treatment is mastectomy combined with endocrine therapy. In addition to surgical treatment, radiotherapy, chemotherapy, and some medications may also be included in the treatment plan. Finally, there is still a complexity in fully understanding breast cancer, so awareness and advances in understanding the disease are essential to address the challenges associated with this rare condition.

Keywords: Breast cancer. Men. Pathology. Epidemiological profile.

INTRODUCTION

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The principle of medicine and care with the development of science and technology has provided empiricism and technique to the care process. Although this technical and scientific progress has led to medicine focused on curing and identifying certain diseases, some are still far from being combated and understood.

This is particularly evident in rare diseases, such as male breast cancer (MBC), as most cases are not adequately addressed in their various dimensions. The lack of communication and information about the neoplasm is a considerable gap in patient care, since MBC is not frequently reported in the literature, as it is a neoplasm that often affects women (FENTIMAN, 2018).

Given the above, it is extremely necessary to identify the factors that are closely related to the increased risk of developing male breast cancer. These include a family history of female breast cancer, obesity, lifestyle habits, hormonal factors such as hypoestrogenism, and genetic factors. In addition, in Brazil, the National Cancer Institute (INCA) reported that 207 deaths of men from breast cancer were recorded, most of whom received a late diagnosis in the country, with virtually all cases associated with one of the risk factors mentioned above. This means that, in Brazil, men with breast cancer were diagnosed between the ages of 60 and 70, possibly at a late stage, which contributes to a lower survival rate, as it can be diagnosed at a more advanced stage. (DATASUS, 2020; HAAS, COSTA, SOUZA, 2009; ARAÚJO, *et al.*, 2018; DANTAS, *et al.*, 2015).

The clinical heterogeneity of the disease makes it difficult to establish a solid treatment. Therefore, to establish specific therapeutic targets, it is necessary to evaluate mammography and ultrasound, followed by standard techniques for histological confirmation, which are fine needle aspiration, core needle biopsy, and surgical excision (LEME, SOUZA, 2006).

Based on this evaluation, it is essential to identify axillary involvement and cancer staging to establish the appropriate treatment, which may initially be surgical, through resection of the breast tissue, nipple, and axillary drainage. Radiotherapy and chemotherapy still show little evidence of efficacy, but hormone receptors remain

positive, so adjuvant hormone therapy has been used as an alternative to enhance results (SALOMON, *et al.*, 2015; RUDDY, WINER, 2013; ARAÚJO, *et al.*, 2018).

In view of this, the chosen treatment method should provide total well-being in the physical, emotional, social, and spiritual aspects of the patient, ensuring autonomy, fulfillment, and human dignity. However, access to such care is difficult due to the lack of research and sufficient information on the subject, as well as bureaucratic obstacles that hinder access to medication and tests for cancer patients (SALOMON, 2015).

Thus, there is a great importance in the individual assessment of patients with MBC, which is restricted in the country to a select group of privileged individuals. To this end, scientific research must gain more space, as well as the development of studies aimed at dignified and humanized treatment, with the objective of promoting early diagnosis and consequently increasing the survival rate.

METHODOLOGY

This is an analytical, quantitative, descriptive, retrospective, and epidemiological study. This is because the current research analyzes the conditions that influence the state and perception of health and disease in the sample population, without direct intervention by the researchers in the observed reality, in order to quantify the opinions collected for the construction of usable information.

To conduct the study, data and information were collected from the Notifiable Diseases Information System (SINAN) of DATASUS, available from the Ministry of Health, and scientific studies on the subject were investigated, including the analysis of original articles, case studies, and bibliographic reviews described in literature.

As this is a population-based study, based on descriptive statistics to characterize the epidemiology of breast cancer in men in the central-western region of Brazil over a given period of time, there was no need for approval by the Research Ethics Committee, since the data were obtained from a publicly available database, accessible online.

RESULTS

The analysis of available studies identified that among the main risk factors for the development of male breast cancer is advanced age at diagnosis, which is on average 60 years, implying late diagnosis and identification of the disease at more aggressive stages, in addition to association with other comorbidities. Furthermore, mutations in the BRCA1 and BRCA2 genes, Klinefelter syndrome, and a positive family history are important factors that indicate the possible development of male breast cancer (GÓMEZ-RAPOSO *et al.*, 2010; DANTAS *et al.*, 2015).

The risk associated with hormonal changes identified mainly in trans men is also taken into account, since they undergo hormone therapy. Most male tumors have a much higher percentage of estrogen receptors than breast tumors found in women (MARQUES, JÚLIO, 2012; CLARKE *et al.*, 2021; FARAH, FEIJÓ, QUEIROZ, 2023).

In addition, some other factors may raise suspicion for the development of the disease, such as prostate cancer, gynecomastia, occupational exposures, dietary factors, and alcohol intake (WEISS, MOYSICH, SUECA, 2005).

Regarding treatment, mastectomy is the most recommended treatment option for male breast cancer and is considered by some studies to be the gold standard. Associated with surgical treatment, endocrine therapy may be performed in some cases to assist conservative surgery (ARAÚJO *et al.*, 2018; FENTIMAN, 2018).

Given the rarity of the neoplasm in men, radiotherapy has been used as adjuvant therapy in cases of larger lesions, lymph node involvement, and tumor extension to the skin, nipple area, and pectoralis major muscle (ARAÚJO *et al.*, 2018).

The use of agents that inhibit estrogen production has also been investigated with the aim of delaying the start of chemotherapy as long as possible. Among these antiestrogenic agents is tamoxifen, which acts on positive hormone receptors. Although there are benefits to using this drug, the number of side effects can lead to non-adherence to therapy (RUDDY, WINER, 2013; FENTIMAN, 2018).

In addition to tamoxifen, aromatase inhibitors can also be used, although they are not as effective, as they inhibit the production of testicular estrogen (ARAÚJO *et al.*, 2018).

In patients who have already undergone first-line therapy but have a primary tumor larger than 1 centimeter and positive lymph nodes, it is essential to start systemic chemotherapy, since in these high-risk cases, treatment increases the survival rate of patients (ARRUDA *et al.*, 2013; FENTIMAN, 2018).

CONCLUSION

Based on the findings of this study and its correlation with the literature, it is concluded that, although rare, several factors can contribute to the development of breast cancer in the male population, which consequently demonstrates the need for attention to this type of neoplasm.

The complexity and rarity of this disease highlight the need for more research and better access to specialized care. Earlier diagnosis and personalized treatment are crucial to improving therapeutic outcomes and patients' quality of life. Finally, awareness and advances in understanding the disease are essential to address the challenges associated with this rare condition.

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