



Association between obesity and breast cancer in premenopause

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1 INTRODUCTION

In Brazil, excluding non-melanoma skin tumors, breast cancer is the most common in women. The number of cancer deaths also increased, from 6.2 million in 2000 to 10 million in 2020. More than one in six deaths is due to cancer (WHO, 2021). In addition to well-established risk factors such as female gender, age, positive family history, genetic mutations, proliferative breast changes, high breast density breasts, early menarche, late menopause and radiation exposure, some researchers associate body constitution with the risk of breast cancer development. As obesity and cancer are diseases that affect millions of people and have important consequences it is necessary to identify the relationship between these two events.

2 OBJECTIVE

The aim of this study is to define whether there is an association between obesity and premenopausal breast cancer.

3 METHODOLOGY

This is an integrative review of the literature conducted in August 2022 that used the descriptors in Health Sciences (DeCS) together with the Boolean operator "AND", which resulted in the descriptor: "*Obesity*" AND "*Breast cancer*" AND "*Premenopausal*" It was developed in the following virtual libraries: *National Library of Medicine (PUBMED)*, *Medical Literature Analysis and Retrieval System Online (MEDLINE)*, *Latin American and Caribbean Literature in Social and Health Sciences (LILACS)* and *The Scientific Electronic Library Online (SCIELO)*. Inclusion criteria were: publications made in English and/or Portuguese between 2012 and 2022, which contained the selected descriptors. Articles not made available in full through the databases were excluded, in addition to those that were duplicated.

4 DEVELOPMENT

Lines of evidence supporting the association between obesity and breast cancer include pathways related to inflammation, insulin resistance, and hormone synthesis. In premenopausal, studies indicate an inverse relationship between these two factors, i.e., obese patients would have a lower risk of cancer; with the exception of Asian women, who have an increased risk. The results of the research indicate the



importance of maintaining healthy weight, avoiding foods with high fat composition and the practice of physical activity. Therefore, weight reduction is a cancer prevention tool, especially for high-risk women. Finally, as divergent relationships have already been identified between premenopausal obesity and breast cancer – depending on the patient's ethnicity – public health intervention strategies should consider the characteristic of the population addressed.

5 FINAL CONSIDERATIONS

Studies evaluating the relationship between obesity and premenopausal breast cancer indicate an inverse relationship between these two factors, i.e., obese patients would have a lower risk of cancer; with the exception of Asian women, who have an increased risk. However, obesity, when present, confers a worse prognosis, increased risk of recurrence and mortality from breast cancer in premenopausal women, especially because it is related to more aggressive tumor subtypes.



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