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BREAST CANCER RISK CALCULATORS

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ABSTRACT

Breast cancer risk calculators, such as Gail, Tyrer-Cuzick, and Claus, estimate the likelihood of the disease based on personal and family factors, aiding in prevention and early diagnosis. These tools allow for personalized interventions, but have limitations related to the accuracy and representativeness of the data. Its use is crucial in personalized medicine, optimizing care and reducing mortality. More research is needed to enhance its clinical application.

Keywords: Risk calculators. Breast cancer.

INTRODUCTION

Breast cancer is one of the most common neoplasms among women worldwide, and it is essential to implement prevention and early diagnosis strategies (ARMSTRONG, 2014). Breast cancer risk calculators emerge as essential tools to estimate the probability of developing the disease, allowing a personalized approach for each patient (TORRESAN, 2024).

OBJECTIVE

The objective of this paper is to present an overview of breast cancer risk calculators, discussing their importance, functioning and implications in clinical practice.

METHODOLOGY

A literature review was conducted on the main available risk calculators, such as the Gail Model, the Tyrer-Cuzick Model and the Claus Model. Data were collected from peer-reviewed articles, clinical guidelines, and relevant academic literature. To search for articles, databases such as Pubmed, Lilas, Scielo and VHL were used, in Portuguese and English.

DEVELOPMENT

Risk calculators are statistical tools that use patients' personal and family information to estimate the likelihood of developing breast cancer throughout life. These tools consider factors

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such as age, family history, age at first menstruation, age at having the first child, among others. Risk calculators play a vital role in identifying women who are more likely to develop breast cancer, enabling early interventions and the adoption of preventive measures, such as more rigorous clinical follow-up, use of chemoprevention drugs and, in some cases, prophylactic mastectomies (TORRESAN, 2024). There are some differences in choosing the type of calculator to apply; a) Gail Model: focused on women without a significant family history of breast cancer, estimates risk based on personal and reproductive factors (VIANNA, 2019); b) Tyrer-Cuzick Model: considers family history of cancer, offering a more comprehensive calculation that includes genetic mutations, such as BRCA1 and BRCA2 (VIANNA, 2019) and c) Claus Model: uses family data to calculate risk, being especially useful for women with significant family history (LEE, 2019). While risk calculators are valuable tools, they come with limitations. The accuracy of the results may be affected by the quality of the information provided and the representativeness of the population sample in which it was developed. In addition, underestimation or overestimation of risk can lead to poor clinical decisions.

FINAL CONSIDERATIONS

Breast cancer risk calculators represent a significant advance in personalized medicine, allowing healthcare professionals to provide more targeted and effective care. The understanding and proper use of these tools are essential to optimize the approach to breast cancer prevention and diagnosis, contributing to the reduction of mortality and improvement of the quality of life of patients.

CONCLUSION

In view of the proposed objective and based on the discussions of the theme explained here, it is concluded that further research regarding risk calculators based on greater practical use by professionals is necessary for greater evidence, especially in relation to more invasive treatments and procedures.

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