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Use of the CanRisk tool in risk prediction in patients with breast and/or ovarian cancer: a Brazilian reality?

Elisângela de Paula Silveira Lacerda[1], Vinícius dos Santos Romão[1], Lis de Paula Lacerda[2], Rosemar Macedo Souza Rahal[1]

[1]Universidade Federal de Goiás – Goiânia (GO), Brazil.
[2]Universidade do Planalto Central – Brasília (DF), Brazil.

Introduction: Predictive tools based on mathematical and genetic models, such as CanRisk, which is based on the Breast and Ovarian Analysis of Disease Incidence and Carrier Estimation Algorithm (BOADICEA) model, have stood out for their ability to estimate the probability of developing these types of cancer in a personalized way. **Objective:** To estimate the absolute and relative risk of an individual developing breast and ovarian cancer over lifetime using the CanRisk tool, comparing the percentage risk with the genetic result. **Methods:** CanRisk was applied to 22 breast cancer patients and 21 ovarian cancer patients from the Goiás Todo Rosa Project, with a positive germline panel. After CanRisk was applied during pre-counseling, data were analyzed using the application's own risk calculator. The estimated risk values were classified according to the National Institute for Health and Care Excellence (NICE) criteria. **Results:** For patients with breast cancer, data showed that the estimated lifetime risks (20–80 years) ranged from 5.9% to 12.9%, with an average of 9.77%, classified as low risk of presenting genetic mutations or developing cancer. Data from 21 patients diagnosed with ovarian cancer presented estimated risks ranging from 0.9% to 2.3%. The values obtained were concentrated in the low-risk range, with three patients below the average (<1%) and none above 2.5%. **Conclusion:** CanRisk did not prove to be a valuable tool for estimating individual risk of breast and ovarian cancer. However, the results reinforce that its accuracy may be limited by the quality and comprehensiveness of the data entered. Although all patients had confirmed mutations in BRCA1/2, the CanRisk model did not classify them as high risk, which suggests that there is no need to use this tool in Brazil.

Keywords: breast cancer; BRCA1 protein; BRCA2 protein.