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MammaPrint™ 70-gene signature with ultralow-risk profile – characteristics and results in the AGEMA-BRA cohort

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Objective: The objective of this study was to analyze the clinical characteristics and outcomes of the ultralow-risk population of the AGEMA-BRA study and compare them with data from the MINDACT study. **Methodology:** This is a retrospective study of patients submitted to genomic risk assessment by the 70-gene MammaPrint™ signature, in the Brazilian population, in a database provided by GenCell, from 2016 to 2020 (AGEMA-BRA study). Patients with an MP score>0.355 were considered an ultralow risk (ULR). To verify the association between qualitative variables, the chi-square test was used. This study was approved by the research ethics committee of the State University of Ponta Grossa (CAAE: 12194219.4.0000.0105). **Results:** The population under analysis corresponds to 951 patients, of which 542 (57.1%) were at genomic low risk, with 144 (15.2%) at ULR. Clinical characteristics and outcomes were available for 251 patients with follow-up (FU) of 42 months, and all low-risk patients (nULR and ULR) were alive, with one living with the disease in each group (nULR and ULR). Univariate analysis of epidemiological, anatomopathological, and immunohistochemical characteristics was performed. In this analysis, only the tumor grade reached statistical significance (p=0.004) demonstrating in the nULR patients 13.7% G1, 67.7% G2, and 18.5% G3 and in the ULR cases 34% G1, 59.6% G2, and 6.4% G3. The other parameters analyzed did not reach statistical significance. **Conclusion:** Comparative analysis between the epidemiological, anatomopathological, and immunohistochemical characteristics of patients with nULR and ULR proved to be very similar with statistically significant differences only in tumor grade. In the MINDACT study, size, tumor grade, and progesterone receptor positivity reached significance. The evaluation of the outcomes, with a mean FU of 42 months, did not show relevance between nULR and ULR, probably due to the low aggressiveness of the disease (which is linked to the late risk of relapse) and to the sample size. Analysis with larger FU and in a larger universe of patients is necessary to confirm these results.

Keywords: breast cancer; hormonal antineoplastics.