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DE-ESCALATION OF CHEMOTHERAPY IN ELDERLY WOMEN USING A 70-GENE PLATFORM – COMPARISON OF THE MINDACT STUDY WITH A REAL-WORLD STUDY IN THE BRAZILIAN POPULATION (AGEMA-BRA)

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Introduction: Breast cancer is the most common malignant neoplasm in women, except for non-melanoma skin tumors, and the population pyramid demonstrates an aging trend in most countries; it is necessary to value the analysis of the therapies used in this population, but elderly, seeking the de-escalation of treatment, mainly reducing the use of chemotherapy drugs. In this context, the application of genetic signatures contributes to determine a less toxic treatment in these women with luminal biological profile tumors, where toxicity is less tolerated and with a higher risk of fatal outcomes by therapy. The MINDACT study evaluated this population using MammaPrint™, but patients over 70 years of age were poorly represented, corresponding only to 0.8% of the patients evaluated (56 of 6693 patients), and only 26 patients with high clinical risk. **Objective:** The aim of this study was to verify the possibility of de-escalation of systemic treatment with the use of MammaPrint™ genetic signature in elderly women by comparing the prevalence of data from the MINDACT study population with a cohort of Brazilian patients submitted to the examination (AGEMA-BRA). **Methods:** This is a cross-sectional study comparing the prevalence of low- and high-risk genomic patients in a population with luminal profile breast carcinoma with high clinical risk in MINDACT study populations with a Brazilian cohort older than 70 years, evaluated by the genetic signature MammaPrint™, between 2016 and 2020. This study describes the analysis of data with the estimation of simple and relative frequencies of variables in relation to low- and high-risk classification and study populations (AGEMA-BRA and MINDACT). Then, the chi-square test was used to verify the differences between the proportions. To measure the intensity of differences/associations, relative risks (RRs) and their 95% confidence intervals were calculated. The tests were considered significant when $p<0.05$. **Results:** From a database of 950 patients submitted to MammaPrint™ analysis from 2016 to 2020, 7 were excluded due to incomplete data. The population over 70 years (71–84 years) at the time of diagnosis was represented by 89 patients (9.4%), all with high clinical risk. Of these patients, 54 (60.7%) corresponded to low genomic risk and 35 (39.3%) at high genomic risk. The comparative analysis between the prevalence of the Brazilian population and the MINDACT study, in which the low genomic risk was 61.5% and the high genomic risk was 38.5%, showed no statistical significance (RR 0.98 (0.69–1.39), $p=0.936$). **Conclusion:** The comparative analysis of the prevalence among the results of MammaPrint™ in the MINDACT study and in a cohort of Brazilian women (AGEMA-BRA) in the population older than 70 years showed no statistical difference. With the confirmation of MINDACT data in this age group in a threefold larger cohort (AGEMA-BRA), it is inferable that, although the low representativeness in the studies, the genetic signature of MammaPrint™ can be applied in the elderly women. The evaluation of outcomes regarding relapse-free survival and overall survival, an ongoing study, is necessary to confirm the data obtained.

Keywords: Breast cancer treatment. Genetic testing. Aged.