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Characteristics and outcomes of patients with triple-negative breast cancer treated with neoadjuvant chemotherapy according to race

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Objective: To evaluate the differences in characteristics and outcomes of patients with triple-negative breast cancer (TNBC) treated with neoadjuvant chemotherapy according to race in a Brazilian cohort. **Methods:** This study retrospectively reviewed data regarding ethnicity, socioeconomic features, tumor characteristics, and type of treatment from medical records of patients who underwent neoadjuvant chemotherapy for TNBC from 2012 to 2024. Patients were classified in categories, mostly by heteroidentification registers at hospital admission: “white”, “black”, (“mixed or brown” were categorized as “black”) or “others or unknown”. Survival was estimated based on the Kaplan-Meier method, and differences were assessed by the log-rank test and stratified by grade (1–2 vs. 3). Cox regression model was used to calculate the hazard ratio (HR). Chi-square (χ^2) test was used to compare categorical variables. **Results:** Of 737 patients, 41.4% were black. There was no significant difference between groups regarding median age, marital status, as well as clinical stage and histological type. However, there was a difference in histological grade, with a higher proportion of black patients with grade 2 disease (39.0% vs. 30.8%; $p=0.03$). A significant statistical difference was found in the start time of treatment, being greater in the black population (2.3 months vs. 2.0 months; $p=0.03$). There were no significant differences in chemotherapy regimen, type of surgery performed, and pathological complete response rate. With a median follow-up of 61 months, the white population had worse 5-year event-free survival (65.5% vs. 56.6%; HR 1.34; stratified $p=0.02$) and worse 5-year overall survival (72.9% vs. 63.2%; HR 1.3; stratified $p=0.06$) than the black population. **Conclusion:** Black women had better event-free survival and overall survival than white women with early TNBC. This may have been influenced by different tumor biology, since fewer black patients had grade 3 tumors.

Keywords: triple-negative breast neoplasms; race.