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# Comparative analysis of tumor biology with age range and clinical outcome of patients diagnosed with breast cancer in one year in a tertiary hospital in the Federal District

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**Objective:** To comparatively analyze the age range of breast cancer patients with tumor profile, clinical staging, and therapeutic proposal in a tertiary hospital. Additionally, this study aimed to evaluate the incidence rate of grade 3 tumors and advanced clinical staging in patients under 50 years of age. **Methods:** This is a retrospective observational cross-sectional study. The medical records of all patients who underwent breast cancer surgery from April 2022 to March 2023 were examined. The relationship between the age groups of patients was comparatively analyzed (with a cutoff point of 50 years) with the predominant molecular biology and its relationship with the immunohistochemical profile, clinical staging, and therapeutic indication. The chi-square test was used to assess the association between the molecular profile with clinical response, age, upfront surgery, and staging. The Wald test for equality of relative risk was used to verify whether age is a significant risk factor for grade, molecular profile, response to chemotherapy, upfront surgery, type of surgery, and clinical staging. **Results:** More advanced clinical staging and high-grade tumors were observed in younger patients and, consequently, greater indication for neoadjuvant therapy in this age group, in addition to less conservative surgery and more breast reconstruction. Patients under 50 years had 85% higher risk of having grade III ( $p=0.0127$ ), 83% higher risk of having stages IIB to IV ( $p=0.0339$ ), and 95% risk of not having undergone up-front surgery ( $p=0.0422$ ). **Conclusion:** The data obtained reveal that women under 50 years of age face specific challenges, such as less conservative surgeries due to tumors with a worse prognosis. The differences observed between age groups reinforce the need for personalized approaches to the management of breast cancer.

**Keywords:** breast cancer; female; epidemiology.