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1065 – Breast density in mammography and its influence on cancer detection: an audit study from a population-based breast cancer screening program in Brazil

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Introduction: Breast density data from Latin American populations remain scarce despite growing awareness of this as both a diagnostic challenge and a potential risk factor.

Objective: This study used data from a breast cancer screening program to analyze the proportion of dense breasts and to estimate its impact on cancer detection.

Methods: This was an audit study with prospective data collection on the main breast cancer screening and diagnostic facility within the public health system of Campinas (“Hospital de Amor”), which included all mammograms from 2023 to 2025 (20 months). Breast densities were designated according to the BI-RADS® categories as follows: A/B – non-dense, C/D – dense. The primary outcome was the impact of breast density on the cancer detection rate (invasive and *in situ*). Data were collected from the unit’s information system, periodically subjected to quality control, and actively retrieved by the research team during the study period. Appropriate statistical tests were used.

Results: A total of 29,092 mammograms were evaluated, comprising 28,337 screening and 755 diagnostic mammograms. Density was concordant between the breasts (91.3%), with dense breasts being the predominant category across all age groups (74.5%). Density decreased with age, with predominantly dense breasts observed in 66.3% of women aged 30–49 years and in only 39.1% of women aged 70–74 years ($p < 0.001$). No significant difference was observed between density and race ($p > 0.05$). Breasts categorized as dense and predominantly dense corresponded to 13.1% and 61.6% of the BI-RADS® 0 results, respectively. Women aged 60–74 showed a 1.8-fold greater risk of having a cancer detected when controlled for race and density compared to women aged 30–49 (relative risk [RR] 1.84; 95%CI 1.33–2.53). However, density did not influence the cancer detection rate, even when stratified by age group, race, or positive results.

Conclusion: Dense breasts predominated in this sample. Cancer detection rates were not independently affected by breast density, suggesting that cancers could be detected regardless of density.

Ethics: Research Ethics Committee Approval (CAAE 60402322.7.1001.5404).

Keywords: breast density; breast neoplasms; diagnostic screening programs; early detection of cancer; mammography.