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# MACROSCOPIC EXAMINATION OF BREAST DENSITY CORRELATION WITH MAMMOGRAPHIC BREAST DENSITY IN BREAST CANCER-CONSERVING SURGERY: A RETROSPECTIVE ANALYSIS

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**Objective:** The aim of this study is to evaluate the association between mammographic breast density (MBD) and macroscopic examination of breast density (MEBD), as well as the association between MEBD and multiple clinical and tumoral characteristics. **Methodology:** The secondary (i.e., retrospective) analysis from a prospective database (BREAST-MRI trial) was performed. Patients with breast cancer stages 0 to III for breast-conserving surgery, from November 2014 to October 2018, were selected. All patients were evaluated with clinical examination, breast ultrasound, and mammography and stratified by MBD. Then, they were randomized on a 1:1 basis in two groups whether to perform breast magnetic resonance imaging. Analysis of the subset of patients' MEBD in the clinical trial was not prespecified. MEBD was estimated by calculating the ratio of stromal and fatty tissues in each breast histopathological sample, and then, patients were classified similarly to ACR BI-RADS<sup>®</sup> criteria. **Results:** A total of 431 MEBD were selected for the analysis. MEBD classification was distributed as follows: 303 (70.3%) were classified as A, 85 (19.7%) as B, 36 (8.4%) as C, and 7 (1.6%) as D. There is no association between MBD and MEBD in our breast surgical specimens, such that MEBD A, B, C, and D were associated with MBD in 22 (97.1%) of 24 A breasts, 34 (18.2%) of 187 B breasts, 26 (13.1%) of 199 C breasts, and 1 (4.8%) of 21 D breasts ( $p < 0.001$ ). Breasts with the highest fat content in the macroscopic analysis were associated with older patients, higher body mass index, multiparity, and postmenopausal status ( $p = 0.001$ ). There was no difference among groups regarding the history of hormone replacement therapy, clinical stage, and immunohistochemical. **Conclusion:** Our study shows that MEBD does not hold a close correlation with MBD, according to the ACR BI-RADS classification.

**Keywords:** Breast Cancer; Breast Density; Mammography; Nuclear Magnetic Resonance; Pathology.