

<https://doi.org/10.29289/259453942022V32S1064>

# 459 - POSITIVE PREDICTIVE VALUES OF THE BREAST IMAGING REPORTING AND DATA SYSTEM (BI-RADS®) CATEGORIES 4, 5, AND 0 IN MAMMOGRAPHY AND ULTRASOUND EXAMINATIONS: ANALYSIS BASED ON LOCAL CLINICAL PRACTICE

João Ricardo Maltez de Almleida<sup>1</sup>, Natália Rezende Fonseca<sup>1</sup>, Gabriela Lemos Chagas<sup>1</sup>, Daniel Cendon Duran<sup>1</sup>, Augusto Tufi Hassan<sup>1</sup>

<sup>1</sup>Grupo CAM – Salvador (BA), Brazil.

**Introduction:** The American College of Radiology (ACR) BI-RADS specifies different approaches to calculating positive predictive values (PPVs) of screening/diagnostic tests. The biopsy yield of malignancy based on tissue diagnosis (PPV3) is considered the most accurate indicator of cancer status. Nevertheless, in routine clinical practice, Brazilian physicians frequently take conduct grounded only on cytopathology and clinical follow-up, which might introduce bias when interpreting BI-RADS-derived metrics of performance. **Objectives:** This study aimed to analyze the PPV of BI-RADS categories 4 and 5 in mammography and ultrasound studies in a local reference outpatient clinic. The results from inconclusive examinations (category 0) and the PPV of BI-RADS 4 subcategories were also investigated. **Methods:** Retrospective analysis of the BI-RADS classification applied to mammography and ultrasound studies performed during October (Breast Awareness Cancer Month) from 2009 to 2013. We calculated the PPV for BI-RADS categories 4 (also for subcategories 4A, 4B, and 4C), 5, and 0, considering not only biopsies performed, but also cytopathologic studies and follow-up as a composite outcome measure.  $\chi^2$  and other pertinent statistical tests were used on SPSS, version 20. **Results:** After exclusion criteria were applied, the study sample was composed of 734 women with a mean age of 55.74 years (SD=12.59). Of the participants, 469 (63.9%) had both studies, 136 (18.5%) had only mammography, and 129 (17.6%) exclusively had ultrasound. The PPV for category 4 in mammography was 29.2% (38/130), for category 5 was 100.0% (6/6), and 2.3% for category 0 (9/391). BI-RADS 4 in ultrasound had a PPV of 13.5% (35/260), 100% for BI-RADS 5 (6/6), and 20% (1/5) when BI-RADS 0 was used. The PPV for each subcategory of suspicious lesions found on mammography was 13.6% (11/81) for BI-RADS 4A, 40% (10/25) for 4B, 83.3% (15/18) for 4C, and 4.6% (6/130) of the studies were not subcategorized. On ultrasound, the PPV for subcategory 4A was 4.7% (8/172), 42.9% (3/7) for 4B, 100% for 4C (12/12), and 26.5% (69/260) examinations were not stratified. The different subcategories for both methods showed a statistically significant association with malignant outcomes using the  $\chi^2$  test ( $p < 0.005$ ). **Conclusion:** Most of the PPVs observed were similar to the ACR BI-RADS benchmarks and other values reported in the scientific literature, even considering the broader outcome measure studied (tissue sampling, cytopathology, and follow-up). Nevertheless, some of the variations observed merit further study, since we employed an unusual composite outcome measure that might partially explain our findings and is more closely related to current clinical practice in Brazil.