https://doi.org/10.29289/259453942025V35S1046

Clinical image quality evaluation of mammography for breast cancer screening

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Objective: To evaluate mammographic image quality in a real clinical practice scenario for breast cancer screening. **Methods:** This was an observational, prospective study that analyzed images from digital mammograms from diagnostic services in the state of Goiás in 2019. A specific protocol was created based on the evaluation criteria of the Brazilian College of Radiology, the European Guidelines, and the American College of Radiology. For each variable score, one was attributed to conformity, and zero to nonconformity. Logistic regression model was utilized and the following independent variables were considered: location (city *vs.* country); the Brazilian Unified Health System (SUS) (public *vs.* private); number of monthly exams (≤300 vs. >300); device manufacturing year (≤2011 vs. >2011); and breast density (≤75% vs. >75% of the parenchyma). **Results:** Of 163 fully functioning mammograms, 151 (92.6%) were eligible, with 53 (32.5%) equipment participating in the research, which produced a total of 1,024 images. In the clinical image analysis, regarding the positioning of the patient, it was observed the higher conformity for symmetry parameters, in both projections (>90%). The conformity rate amongst the other parameters varied from 18.6% to 100%. In the multivariable analysis, it was observed that only the variable monthly exams (odds ratio [OR] 3.44; 95% confidence interval [CI] 1.67–7.09; p=0.0008) and mammogram device manufacturing year (OR 2.46; 1.02–5.95; p=0.04) were associated with a higher conformity rate. After the percentage consolidation conformity rate per diagnostic service, regarding the final clinical mammography quality, no diagnostic service presented desirable conformity (>90%), 28 obtained acceptable conformity (between 70 and 89%), and 25 presented conformity below 70%. **Conclusion:** Conformity rate of mammographic exams is extremely low and varies accordingly to the multiple parameters analyzed. Mammographies performed at centers with less productivity (≤300/month) and with newer devices (>2011) presented higher chances of conformity at the clinical imaging evaluation.

Keywords: screening; mammography; quality of health care.