

Accuracy of Recommendations and Histopathology Results with Breast Imaging Reporting and Data System (BI-RADS) – A Retrospective Study

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ABSTRACT

Objective: To evaluate the diagnostic accuracy of radiology team recommendations compared with histopathology outcomes using Breast Imaging Reporting and Data System (BI-RADS) categories in breast ultrasound (US).

Study Design: Retrospective cross-sectional study.

Place and Duration: Radiology Department, Mian Meer Hospital, Lahore, in collaboration with Mayo Hospital, Lahore, Pathology Department, from 02 January 2021 to 03 June 2022.

Methodology: Female patients referred from the Well Women Clinic (WWC) (N=361), which provides breast health services to the local community, and who underwent breast ultrasound performed by consultant radiologists, were included. Patients had USS scans by non-consultants. Male and female patients referred from sources other than the Well Women Clinic were excluded. BI-RADS categories 1–5 were assigned and compared with American College of Radiology (ACR) BI-RADS guidelines and with histopathology reports where available. Category 0 was excluded due to incomplete data. SPSS v29 was used for statistical analysis.

Results: Out of 48,432 ultrasound referrals, 539 were from WWC; 361 met the inclusion criteria. Mean age was 36.23 ± 13.18 years. BI-RADS distribution: Category 1 = 56.5%, Categories 2–3 = 19.1%, Categories 4–5 = 24.4%. Agreement with ACR BI-RADS guideline recommendations was significant ($\chi^2=475.3$, $p<0.0001$), with accuracies of 100% for discharge, 97% for follow-up, and 97% for referral. Histopathology confirmed malignancy in 41 patients (11.4%). Sensitivity and specificity for malignancy detection were 76% and 95% respectively, with overall diagnostic accuracy of 93%.

Conclusion: BI-RADS-based breast ultrasound by consultant radiologists demonstrated high accuracy against histopathology and guideline recommendations and supporting its role as a reliable first-line diagnostic tool.

Keywords: Breast Imaging Reporting and Data System, Breast ultrasound, Histopathology correlation, Benign breast disease, Breast cancer diagnosis.

How to Cite This:

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