Clinical, Radiological, and Histopathological Concordance in Invasive Lobular Carcinoma: A Retrospective Study from a Tertiary Care Center in a low-middle income country

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INTRODUCTION

- Invasive lobular carcinoma (ILC) is the second most common histologic subtype of breast cancer, representing approximately 10–15%. (1)
- Loss of E-cadherin leads to a diffuse, non-cohesive growth pattern that complicates diagnosis and often results in discordance between clinical, imaging, and histopathology findings, hindering accurate preoperative assessment and surgical planning. (2,3)

OBJECTIVES

Primary objective: To determine the concordance between clinical assessment and pre-operative imaging (mammography, breast ultrasound, MRI breast and contrast-enhanced mammogram (CEM), where available) with final histopathology for ILC.

Secondary objective: To estimate the diagnostic performance of each radiological modality (mammography, breast ultrasound, MRI breast and CEM) for ILC using histopathology as reference.

METHODOLOGY

Study Design
Retrospective Cohort Study
Aga Khan University Hospital (2011–2024)

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Patient Selection
Patients with non-metastatic ILC who underwent upfront surgery
n=114

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Data Collection
Tumor size on:
- Clinical Examination
- Imaging (Mammo, US, MRI, CEM)
- Histopathology

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Data Analysis
Comparison of pathological tumor size (pT) with clinical (cT) and radiological modalities using Pearson correlation

RESULTS

Table 1 Demographics, tumor biology and surgical details

Age (years)	Mean ± SD	55.72 ±11.63
		n (%)
ILC Tumor Grade	Grade II	94 (82.46)
	Grade III	20 (17.54)
Receptor Status	ER positive	111 (97.4)
	PR positive	103 (90.4)
	Her2neu positive	6 (5.3)
Pathological Stage	Stage I	8 (7.0)
	Stage II	65 (57.0)
	Stage III	41 (36.0)
Surgical Procedure (breast)	Mastectomy	99 (86.8)
	Breast Conservation Surgery (BCS)	15 (13.2)
Axillary Surgery	Sentinel lymph node biopsy (SLNB)	52 (45.6)
	Axillary clearance (ALND)	36 (31.6)
	SLNB + ALND	26 (22.8)

Table 2 Comparison of pathological tumor size (pT) with clinical (cT) and radiological modalities

	Mean difference ± SD (mm)	Intraclass Correlation Coefficient (ICC)
Pathological vs clinical T size (n=103)	13.83 ± 15.48	0.44
Pathological vs Mammographic T size (n=53)	20.11 ± 20.97	0.15
Pathological vs Ultrasound T size (n=84)	18.49 ± 16.94	0.36

- Mammography showed poor to moderate agreement, with most lesions only described as spiculated or asymmetric densities.
- MRI and CEM were performed in only 3 and 4 patients, respectively.
- Among the 15 patients who underwent BCS, two required mastectomy due to positive margins.

CONCLUSION

Though ultrasound appeared to be a better modality in predicting the size for ILC, it shows only moderate concordance with pathological staging. MRI and CEM are less frequently used due to cost. Despite good concordance between cT stage and pT, margin positivity after BCS highlights ongoing clinical-pathological discordance.

References:

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