Letter to the Editor

Eur J Breast Health
DOI: 10.4274/ejbh.galenos.2025.2025-3-12

Comment on the "Breast Imaging: Correlation Between Axillary Lymph Nodes Apparent Diffusion Coefficient and Pathological Lymphovascular Invasion in Patients With Invasive Breast Cancer"

Ahmet Bozer
Clinic of Radiology, İzmir City Hospital, İzmir, Türkiye

Cite this article as: Bozer A. Comment on the "breast imaging: correlation between axillary lymph nodes apparent diffusion coefficient and pathological lymphovascular invasion in patients with invasive breast cancer". Eur J Breast Health. [Epub Ahead of Print]

Dear Editor,

I read with great interest the article entitled "Breast Imaging: Correlation Between Axillary Lymph Nodes Apparent Diffusion Coefficient and Pathological Lymphovascular Invasion in Patients With Invasive Breast Cancer" (1). The authors have addressed a clinically relevant and timely topic by investigating the relationship between the apparent diffusion coefficient (ADC) values of axillary lymph nodes and lymphovascular invasion (LVI) in patients with invasive breast cancer. Notably, their demonstration of the prognostic potential of magnetic resonance imaging-based ADC measurements in the preoperative setting represents a valuable contribution to the literature. The detailed evaluation of both radiological and histopathological correlations is also commendable.

However, certain aspects of the study could be further clarified or improved to enhance its scientific impact:

i. *Patient Selection:* The study population was limited to patients with single, unilateral breast tumors and ipsilateral lymph node positivity. This selective cohort limits the generalizability of the findings. Inclusion of a more heterogeneous patient population could improve the applicability of the results.

ii. *Unclear Methodology for ADC Measurements:* The type of regions of interest (ROI) used (e.g., elliptical, freehand) was not specified, and the figures suggest that only a single ROI was used. In addition, the criteria for identifying the "most suspicious" lymph node were not clearly defined. It is also unclear whether the three radiologists reached a consensus or made independent assessments. These methodological ambiguities undermine the reproducibility and transparency of the study.

iii. *LVI Evaluation:* LVI was assessed solely on postoperative histopathological examination, but the use of immunohistochemical markers to enhance detection sensitivity was not mentioned. This could affect the accuracy of LVI identification.

iv. *Neoadjuvant Treatment Status:* The study does not specify whether patients received neoadjuvant chemotherapy. As neoadjuvant therapy may influence both ADC values and Ki-67 expression levels, this missing information may limit the interpretation of the findings.

v. *Lack of Multivariate Analysis:* Although the study presents ROC analyses for ADC and Ki-67, multivariate regression analyses were not performed. Such analyses would be necessary to determine whether ADC and Ki-67 are independent predictors of LVI.

These constructive comments are intended to support the authors and guide future research, without detracting from the value of the current study. I commend the authors for their contribution to the field.

Sincerely,

Corresponding Author:
Ahmet Bozer MD; drahmetbozer@gmail.com

Received: 26.03.2025
Accepted: 01.04.2025
Epub: 27.05.2025

Response to the Letter

Dear Editor,

We appreciate the constructive criticisms from the comment regarding our article "Breast Imaging: Correlation Between Axillary Lymph Nodes Apparent Diffusion Coefficient and Pathological Lymphovascular Invasion in Patients With Invasive Breast Cancer" (1).

We believe addressing the mentioned points in comments will improve upon clarity and impact of our research work.

i. Regarding the issue of patient selection, we acknowledge that the study's focus on patients with single, unilateral breast tumors and ipsilateral lymph node positivity limits the generalizability of our findings. However, this more selective protocol strengthens internal validity and help reducing confounding variables. Expanding the cohort might introduce more heterogeneity that complicates interpretation, with future studies encouraged to explore broader populations.

ii. The reader raised valid concerns regarding ADC measurements and ROI type. As mentioned in methodology, we would like to clarify that elliptical ROIs were manually drawn to measure the solid portions of the lymph nodes and exclude necrotic areas. While figures may show a single ROI, this is for illustrative purposes and to avoid confusion, at least three ROIs measurements were used within each lymph node, and the mean ADC value was calculated. The "most suspicious" lymph node was identified, as mentioned in the discussion segment of the article, based upon established radiological criteria, including size, cortical thickening, loss of fatty hilum, irregular margins, and heterogeneous cortex [references (22, 23) in the original manuscript provide further details]. Furthermore, conjoint interpretation of the magnetic resonance imaging was done by the three radiologists as mentioned to reach consensus-based final agreement regarding lymph node selection and measurements.

iii. We acknowledge the reader's point about LVI evaluation. We relied on standard histopathological markers examination as it remains the conventional method in clinical practice, the use of more immunohistochemical markers (e.g., CD31, D2-40) could indeed enhance the sensitivity of LVI detection. The study provides meaningful results within the scope of conventional diagnostic protocols, and further studies could explore the added value of immunohistochemistry markers in correlating with ADC values.

iv. We recognize that neoadjuvant chemotherapy can influence both ADC values and Ki-67 expression. The retrospective nature of our study made it challenging to avoid this confounding variable. Future prospective studies should incorporate neoadjuvant treatment as a factor in the analysis.

v. Finally, we agree that a multivariate regression analysis, as suggested by the reader, would provide more robust assessment of the ADC and Ki-67 as independent predictors for LVI. Our study primarily focused on the ROC analysis between these parameters using simpler statistical methods, and already provides valuable clinical insights. This study's primary goal was to establish a correlation, paving the way for further investigations incorporating multivariate approaches.

We appreciate the insightful feedback, which will undoubtedly contribute to the improvement of future research in this area.

Sincerely,

Footnotes

Conflict of Interest: No conflict of interest was declared by the author.

Financial Disclosure: The author declare that they received no financial support for this study.

Reference

1. Mounir AM, Shokeir FA, Abd Elraouf GH. Breast ımaging: correlation between axillary lymph nodes apparent diffusion coefficient and pathological lymphovascular ınvasion in patients with ınvasive breast cancer. Eur J Breast Health. 2025; 21: 141-153. (PMID: 40079346) **[Crossref]**