Letter to the Editor

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Response to "Methodological Challenges in Associating T2-Weighted Imaging Features in Breast Cancer With Clinical and Pathologic Findings"

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We thank Dr. Yakup Ozbay [1] for the interest in our article, "Association of T2-Weighted Imaging Features in Invasive Breast Cancer With Clinicopathologic Features and Neoadjuvant Treatment Outcomes" [2] and appreciate the opportunity to clarify our findings.

We agree that our study should be considered exploratory, given its small sample size, as noted in the limitations. T2-weighted imaging features, particularly quantitative T2 relaxation times, remain underexplored in breast cancer, which motivated our investigation. Although the observed disease progression rate was higher than expected, the small absolute number of events (n = 9) limits definitive conclusions but highlights directions for future research. Similarly, wide confidence intervals for intratumoral signal intensity (SI) grades likely reflect subgrouping within the small neoadjuvant chemotherapy cohort (n = 68).

Given the close relationship between T2 imaging grades and quantitative T2 relaxation times, we evaluated associations with clinicopathologic factors separately. Although multivariable analysis could offer broader insights, it was deemed statistically unstable given that only nine progression events were available. Accordingly, we prioritized statistical robustness by presenting univariable results, maintaining an event-to-variable ratio close to the widely accepted benchmark of 10, thereby enhancing the reliability of the reported associations. Future larger-scale studies should allow multivariable analyses or permit focused evaluation of specific subtypes, such as triple-negative or hormone-receptor positive/human epidermal growth factor receptor 2 (HER2)-negative tumors, to better clarify the role of T2-weighted features in risk stratification.

Finally, the limited number of HER2-positive cases (n = 33) may have constrained the detection of associations between intratumoral SI grade and HER2 status. The study by Jirarayapong et al. [3] examined T2 signal characteristics within HER2-positive breast cancers but did not compare these features across molecular subtypes. In our cohort, 57.6% (19/33) of tumors demonstrated high intratumoral T2 SI (grade 1 or 2), exceeding the 45.0% (95/211) reported in their study. Notably, quantitative T2 relaxation times in our study varied according to estrogen receptor and progesterone receptor status and the triple-negative breast subtype, suggesting potential value for more precise tumor characterization. We appreciate the interest shown by Dr. Ozbay and the opportunity to further discuss these findings.

Conflicts of Interest

The authors have no potential conflicts of interest to disclose.

Author Contributions

Conceptualization: Vivian Youngjean Park. Writing—original draft: all authors. Writing—review & editing: all authors.

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