Troponin-to-Lymphocyte Ratio in ICI Associated Myocarditis: A Useful Marker with Limitations

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Dear Editor,

We read with great interest the article by Chen et al. on the prognostic role of the troponin-to-lymphocyte ratio (cTn/ALC) in patients with immune checkpoint inhibitor (ICI) associated myocarditis.[1] This complication, although infrequent, carries a disproportionately high risk of morbidity and mortality among cancer patients receiving immunotherapy. The authors should be commended for exploring a simple and widely available marker that reflects both myocardial injury and immune status. Such an approach is clinically attractive because both troponin and lymphocyte count are routinely measured, inexpensive, and easily standardized. Previous reports have already highlighted the prognostic role of troponin elevation and lymphocyte dynamics in ICI associated myocarditis,[2-5] and the integration of these two markers into a composite index is a logical and potentially valuable step forward.

Nevertheless, several methodological issues deserve consideration. The retrospective and single-center design inevitably introduces selection bias and limits the external validity of the findings. The relatively small sample size, while understandable given the rarity of ICI myocarditis, reduces statistical power and results in wide confidence intervals, which weakens the robustness of the associations reported. In addition, the short follow-up period (median 69 days) may not adequately capture late cardiovascular events or long-term mortality. Another important limitation is that histological confirmation of myocarditis was available in only one case, which may lead to misclassification bias, as clinical diagnosis alone can sometimes overlap with other causes of troponin elevation. Furthermore, while the cTn/ALC ratio performed better than either parameter alone in ROC analysis, the lack of statistically significant differences between the AUC values calls into question the true incremental prognostic value of this ratio compared to established markers.

Despite these limitations, the study enriches current knowledge by proposing a combined biomarker approach. Troponin is already a cornerstone in the detection of myocardial injury, while lymphopenia has been linked to worse immune-mediated toxicity outcomes. By combining these parameters, the cTn/ALC ratio may better reflect the interplay between cardiac damage and systemic immune suppression. This concept aligns with recent evidence on the prognostic role of high-sensitivity troponin in ICI treated patients[6] and suggests that composite indices could refine current risk stratification models. Future research should aim to validate these findings in larger, multicenter cohorts with longer follow-up and ideally incorporate imaging modalities or biopsy data to strengthen diagnostic accuracy. It would also be of interest to assess whether dynamic changes in cTn/ALC ratio over time, rather than a single baseline measurement, provide superior prognostic information.

In summary, Chen et al.[1] provide timely and thought-provoking data on the prognostic value of the cTn/ALC ratio in ICI associated myocarditis. While the results are promising and clinically relevant, they should be interpreted with caution, given the methodological constraints. Nonetheless, this work opens an important line of investigation and underscores the need for simple, reliable tools to identify high-risk patients early. Validation through prospective, multicenter studies will be essential before the routine implementation of the cTn/ALC ratio in clinical decision-making. We congratulate the authors for their contribution and look forward to further research in this field.

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Keywords

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