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Letter to the Editor

The importance of inflammatory indices in the early diagnosis and prognostic evaluation of patients with crush syndrome

Sinan Yıldırım

Department of Emergency Medicine, Faculty of Medicine, Çanakkale Onsekiz Mart University, Çanakkale, Turkiye

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Corresponding Author: Sinan Yıldırım, drsinanyildirim@gmail.com

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Dear Editor,

I read with interest the paper by Kablan et al.,[1] "The importance of inflammatory indices in the early diagnosis and prognostic evaluation of patients with crush syndrome." The authors report a retrospective analysis of patients affected by the February 6, 2023 Hatay earthquake who were admitted to Ankara Etlik City Hospital between January 1 and December 31, 2023, and they evaluate the clinical usefulness of complete blood count based inflammatory indices in the diagnosis of crush syndrome.

In disaster medicine, timely triage and appropriate prioritization for close monitoring are essential in crush syndrome. However, field conditions rarely allow comprehensive and repeated laboratory testing for every patient. Having served in tent hospitals during the 1999 and 2023 earthquakes, I experienced substantial diagnostic constraints, particularly in the early hours when patient volume was high and logistics were challenging. In many cases, biochemical tests such as creatine kinase, electrolytes, and blood gas analysis could not be obtained simultaneously or repeated as needed, whereas a complete blood count was more consistently available. From this perspective, indices derived from hemogram parameters, including SII, SIRI, and PIV, are clinically relevant tools for early decision-making in resource-limited settings. The feasibility of this approach is supported by the simple calculation of SIRI (neutrophils multiplied by monocytes, divided by lymphocytes).

The most notable result is that SIRI was the only independent predictor in the multivariable logistic regression model (beta 0.2687; p 0.026; odds ratio 1.308; 95% confidence interval 1.032 to 1.660). This finding suggests that SIRI preserves discriminative value after adjustment for other variables. The ROC analysis also supports this observation, showing good diagnostic performance for SIRI (AUC 0.811; 95% confidence interval 0.720 to 0.903). The reported AUC values for SII (0.710), PIV (0.764), and NLR (0.746) indicate that SIRI performs at least comparably and, in several comparisons, better. Pairwise analyses further strengthen the message: SII showed lower discriminative ability than SIRI and PIV (SII versus SIRI p less than 0.001; SII versus PIV p 0.010), and SIRI outperformed NLR (SIRI versus NLR p 0.014).

These findings are also relevant for settings where testing is minimal. Even when biochemistry is delayed, SIRI obtained from an early complete blood count may assist decisions regarding monitoring intensity and prioritization, together with clinical assessment and variables such as entrapment duration. In addition, the authors note that studies specifically evaluating SII, SIRI, and PIV in crush syndrome are limited, and this work therefore addresses an important gap in the literature.

Limitations related to sample size, retrospective design, and the small number of deaths are important for generalizability, and the authors appropriately acknowledge these constraints. Prospective, multicenter validation that reflects disaster field realities, and direct comparisons with established multivariable scoring approaches, would further clarify the role of SIRI, particularly in scenarios where only complete blood count data are available.

In conclusion, Kablan et al. provide evidence that SIRI is a promising and practical biomarker for early diagnosis in crush syndrome, with clear relevance to the constraints frequently encountered in disaster settings. I congratulate the authors and your journal on this clinically meaningful contribution.

ETHICAL DECLARATIONS

Peer Review Process

This letter was externally peer-reviewed.

Conflict of Interest

The author declare no conflicts of interest.

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Author Contributions

The author is solely responsible for the entirety of conception, execution, analysis, and writing of the manuscript.

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1. Kablan A, Sarcan E, Avcıoğlu G, Kablan S. The importance of inflammatory indices in the early diagnosis and prognostic evaluation of patients with crush syndrome. *Intercont J Emerg Med*. 2025;3(4):73-79. doi:10.51271/ICJEM-0064

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Author reply "The importance of inflammatory indices in the early diagnosis and prognostic evaluation of patients with crush syndrome "

Ali Kablan*[1], Emine Sarcan[1], Gamze Avcıoğlu[2], Seval Kablan[3]

[1]Department of Emergency Medicine, Ankara Etlik City Hospital, Ankara, Turkiye
[2]Department of Medical Biochemistry, Karadeniz Ereğli State Hospital, Zonguldak, Turkiye
[3]Department of Intensive Care, Hitit University Erol Olçok Training and Research Hospital, Çorum, Turkiye

Dear Editor,

We would like to thank you for your interest in our manuscript, your careful evaluation of our study, and the constructive feedback you have provided. Highlighting the importance of easily accessible and practical biomarkers in clinical conditions such as crush syndrome—where time is critical and diagnostic resources are often limited in disaster medicine—reflects the primary objective of our study.

In our study, we aimed to evaluate the diagnostic and prognostic value of inflammatory indices derived from complete blood count parameters in patients diagnosed with crush syndrome following the February 6, 2023 Hatay earthquake. Our findings demonstrate that systemic inflammation and tissue injury were markedly increased in this patient group, and that the Systemic Inflammation Response Index (SIRI), in particular, emerged as an independent predictor in multivariate analyses. The fact that only SIRI remained statistically significant in logistic regression analysis and demonstrated good discriminative power in ROC analysis further highlights this index as a prominent prognostic marker.

Under disaster conditions, it may not always be possible to obtain biochemical tests simultaneously or repeatedly. In contrast, complete blood count results are often available at an early stage. Therefore, we believe that hemogram-based indices such as SIRI, when used in conjunction with variables such as clinical assessment and duration of entrapment, may contribute to patient monitoring and early decision-making processes.[1] In this respect, we consider that our study offers an approach that is more compatible with field realities.

The limited sample size, retrospective design, and relatively low number of mortality cases constitute important limitations in terms of generalizability. These limitations have been clearly stated in our study. Nevertheless, the limited number of studies in the literature that evaluate SII, SIRI, and PIV together and comparatively in crush syndrome increases the original value of our work.

In the future, we believe that multicenter and prospectively designed studies are needed to directly compare SIRI with existing clinical scoring systems and to more clearly elucidate its contribution, particularly in scenarios where only complete blood count data are available.

We would like to thank you once again for your valuable evaluation and for your contribution to our study.

Sincerely,

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