LETTER TO THE EDITOR

Importance of age in assessment of SIRI and SII in patients with acute cholecystitis

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Dear Editor,

I have carefully reviewed the article by İbrahim Ethem Cakcak and colleagues titled "Predictive evaluation of SIRI, SII, PNI, and GPS in cholecystostomy application in patients with acute cholecystitis."[1] This study emphasizes the importance of the Systemic Inflammatory Response Index (SIRI) and the Systemic Immune Inflammation Index (SII) as inflammatory markers in clinical management and presents significant findings. However, I would like to highlight some methodological points.

While the findings support the diagnostic and prognostic value of SIRI and SII in acute cholecystitis patients, it is crucial to consider the impact of age as a significant variable in the evaluation. The literature suggests that inflammatory markers like SIRI and SII are expected to be higher in younger patients. For instance, the study by Yiyuan Xia et al. demonstrated that SII significantly affects all-cause mortality and cardiovascular mortality in a cohort of 42,875 US adults over 20 years.[2] These findings indicate that inflammatory responses vary with age, and comparisons across different age groups can be misleading.

Impact of Age and Related Literature

Age has a profound impact on the inflammatory response. Younger individuals generally exhibit a more active immune system, leading to higher levels of SIRI and SII. The lack of consideration for age differences in Cakcak's study may reduce the reliability of the results. Moreover, the study conducted by Hilmi Yazıcı and colleagues found that high SIRI values were associated with worse overall survival rates in rectal cancer patients.[3] This raises questions regarding the influence of age on SIRI values.

Additionally, the study by Abbate et al. highlighted the diagnostic performance of SIRI in salivary gland tumors, emphasizing its potential as a cancer diagnostic marker.[4] Similarly, Urbanowicz and colleagues explored the importance of SIRI in the prognostic assessment of cardiovascular diseases.[4] These studies underscore the need for further investigation into the role of inflammatory markers in clinical decision-making.[2]

Clinical Applications of SIRI and SII

In Cakcak's study, the roles of SIRI and SII in clinical decision-making should be evaluated alongside the age factor. Controlling for age-related differences will allow these parameters to be used more accurately and reliably in clinical practice. Specifically, the significance of SIRI and SII lies in their ability to reflect immune system activity and inflammatory responses. I hope Cakcak's work contributes to a broader understanding of the diagnostic and prognostic values of SIRI and SII in rectal cancer and other malignancies.

In conclusion, Cakcak and colleagues' study provides valuable insights into the diagnostic value of SIRI and SII in patients with acute cholecystitis. However, considering the age factor and conducting more extensive prospective studies are essential to enhance the reliability of SIRI and SII in clinical applications. Future research in this area will help clarify the prognostic and diagnostic value of inflammatory markers.

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REFERENCES

1. Cakcak İE, Kula O. Predictive evaluation of SIRI, SII, PNI, and GPS in cholecystostomy application in patients with acute cholecystitis. Ulus Travma Acil Cerrahi Derg 2022;28:940-6. [CrossRef]
2. Zhou Y, Wang Y, Wu T, Zhang A, Li Y. Association between obesity and systemic immune inflammation index, systemic inflammation response index among US adults: a population-based analysis. Lipids Health Dis 2024;23:245. [CrossRef]
3. Wang J, Zhou D, Dai Z, Li X. Association between systemic immune-inflammation index and diabetic depression. Clin Interv Aging 2021;16:97–105. [CrossRef]
4. Chen JH, Zhai ET, Yuan YJ, Wu KM, Xu JB, Peng JJ, et al. Systemic immune-inflammation index for predicting prognosis of colorectal cancer. World J Gastroenterol 2017;23:6261–72. [CrossRef]

AUTHOR'S REPLY

Dear Editor,

We appreciate the thoughtful insights and comments provided by the author regarding our article titled "The Predictive Role of SIRI, SII, PNI, and GPS Values in Cholecystostomy Application in Patients with Acute Cholecystitis."

In response to the discussion surrounding the role of age in systemic inflammatory response markers, particularly Systemic Inflammatory Response Index (SIRI) and Systemic Immune-Inflammation Index (SII), we would like to emphasize that, contrary to the assumption that younger individuals exhibit stronger inflammatory responses, recent evidence suggests that the relationship between age and systemic inflammation is more complex. Studies such as those by Zhou et al. and Wang et al. indicate that systemic inflammatory responses like SIRI and SII can remain elevated or even increase in older individuals depending on the context, such as underlying comorbidities or conditions like obesity and diabetes.[1,2] In fact, Zhou et al. demonstrated that obesity significantly influences systemic immune inflammation indices across age groups, challenging the notion that age alone is a primary determinant of inflammatory marker elevation.[1]

Moreover, our study, specifically in patients with acute cholecystitis, found that older individuals also exhibited elevated SIRI values, contrary to the expectation that younger individuals would show stronger responses. This highlights the need to consider the acute clinical context when interpreting inflammatory markers, as acute conditions such as cholecystitis may drive inflammation irrespective of age. For instance, Wang et al. found that SII values were associated with inflammatory conditions like diabetic depression across age groups,[2] further supporting the idea that systemic inflammation is multifactorial and not strictly age-dependent.

In a study by Chen et al., SII was shown to be a strong predictor of colorectal cancer prognosis across a broad range of ages.[3] These findings align with our results, where we observed elevated SIRI levels even in older patients, further suggesting that inflammatory markers like SIRI may retain their prognostic and diagnostic relevance across different age groups, particularly in acute settings such as cholecystitis.

In conclusion, while age is indeed an important factor to consider, evidence suggests that systemic inflammation markers such as SIRI and SII may not follow a linear correlation with age. In our study, these markers remained elevated even in older patients with acute cholecystitis. We hope this clarification contributes to a more nuanced understanding of the role of inflammatory markers in clinical practice.

Thank you again for the opportunity to engage in this important discussion.

Sincerely,

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REFERENCES

1. Zhou Y, Wang Y, Wu T, Zhang A, Li Y. Association between obesity and systemic immune inflammation index, systemic inflammation response index among US adults: a population-based analysis. Lipids Health Dis 2024;23:245. [CrossRef]
2. Wang J, Zhou D, Dai Z, Li X. Association between systemic immune-inflammation index and diabetic depression. Clin Interv Aging 2021;16:97–105. [CrossRef]
3. Chen JH, Zhai ET, Yuan YJ, Wu KM, Xu JB, Peng JJ, et al. Systemic immune-inflammation index for predicting prognosis of colorectal cancer. World J Gastroenterol 2017;23:6261–72. [CrossRef]