Can the simple parameter of peripheral hematological examination predict the outcome in patients with septic acute kidney injury?

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Dear Editor,

The complete blood counts (CBC) test may be one of the most convenient biochemical parameters in the routine clinical practice to detect any acute and life-threatened situations of patients. These simple parameters obtained from the peripheral hematological parameters have been reported to be valuable in the further decision making.[1–3] However, recent studies have shown that the use of these parameters or ratio from the subgroup analysis (certain parameter/other parameter) could be applied in the prediction of the outcome of patients with various kinds of diseases, including the publication by Dr. Chen etc., in the last November issue of the *Journal of the Chinese Medical Association*.[4] The authors found that an elevated ratio of platelet/lymphocyte is significantly associated with a worse prognosis of sepsis-induced acute kidney injury.[4] Although some evidence has supported that these simple hematological parameters, such as subgroup of white cell counts and platelet counts, and their ratios obtained from the simple peripheral blood test were successfully applied in the prediction of outcomes of diseases,[1–4] we have concerned very much about their value. It is hard to convince us that the use of simple parameters can successfully predict the patients' outcome. The followings are our questions about Dr. Chen's article.

First, we found that some parameters associated with worse outcomes of patients with septic acute kidney injury patients were against our experience. In addition, some data made us confused. For example, less than half of survived patients (42.3%, 11/26) did have been treated with mechanical ventilation, but nearly all patients died when they have been treated with mechanical ventilation (>90% [90.2%, 37/41]).[4] However, the statistically significant difference was absent. We recalculated the data and found this part should be statistically significant. By contrast, the other data (continuous renal replacement treatment [CRRT]) showed that 7.7% of survived patients did not receive CRRT compared to 17.1% of died patients who did have the similar clinical treatment[4]; however, the aforementioned comparison was statistically significant by authors' mention. We recalculated this data and found that this comparison was not statistically significant. Could the authors kindly and carefully repeat their analysis again to validate their data?

In addition, it is relatively confusing that survived patients had lower levels of platelets than died patients did (71×10^9/L vs. 113×10^9/L).[4] This observation seemed to be unusual in the our limited knowledge. If low platelet count of patients was associated with the high possibility to survive, how to explain the following concept that the worse outcomes are often associated with low platelet counts, especially for those patients having the platelet counts below 100,000/μL. Our limited knowledge showed low platelet counts were a reflective of more severe clinical situations, such as an occurrence of disseminated intravascular coagulopathy, which are common in patients with sepsis-induced acute kidney injury.[5]

Finally, we found that all data addressing the factors associated with mortality in septic patients with acute kidney injury provided by authors were not significant; however, 95% confidence interval of odd ratios was crossed over the "1," suggesting that the statistical significance should be present. However, in all items, except mechanical ventilation (no/yes), platelet/lymphocyte ratio, and lactate serum level were the absence of any statistical significance. We believed these data needed the further validation. Could the authors kindly explain it?

We are looking forward to learning the authors' kind response.

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Conflicts of interest: The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

Journal of Chinese Medical Association. (2021) 84: 336-337.

Received December 16, 2020; accepted December 16, 2020.

doi: 10.1097/JCMA.0000000000000486.

ACKNOWLEDGMENTS

This article was supported by grants from the Ministry of Science and Technology, Executive Yuan, Taiwan (MOST 109-2314-B-075B-014-MY2 and MOST 109-2314-B-075-056), and Taipei Veterans General Hospital (V110C-082, and VGH109E-005-5).

The authors appreciate the support from Female Cancer Foundation, Taipei, Taiwan.

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