Clinical Usefulness of Procalcitonin as a Marker of Sepsis: A Novel Predictor of Causative Pathogens?

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The Authors Reply We appreciate the interest and comments from Dr. Mustafa Hatipoglu et al. regarding our study (1). Their major concern is that *Staphylococcus aureus* (*S. aureus*) was not included in the Gram-positive cocci group for the comparison of the procalcitonin (PCT) levels between the patients with sepsis caused by Gram-positive cocci and that caused by Gram-negative rods.

When we performed the prospective study (between May and December 2010), patients with sepsis caused by *S. aureus* were not included by chance. Therefore, we did not have an opportunity to evaluate the PCT levels in patients with sepsis caused by *S. aureus*. This time, we retrospectively observed an association between the PCT level and sepsis caused by *S. aureus* by reviewing the subjects’ medical records. Seventeen patients with sepsis caused by *S. aureus* were admitted to our hospital between January and December 2013. The mean PCT level for these patients was 2.9±3.4 ng/mL, with a maximum of 11.2 ng/mL. These PCT levels were lower than those of the patients with sepsis caused by Gram-negative rods included in the study (149.8±199.7 ng/mL) (1). Furthermore, the PCT level in each patient with sepsis caused by *S. aureus* was less than 16.9 ng/mL, the estimated cut-off level for predicting causative pathogen type in our study (1). Hence, considering the data obtained from our retrospective observation, the PCT levels in the patients with sepsis caused by *S. aureus* were not as high as those observed in the patients with sepsis caused by Gram-negative rods.

On the other hand, Dr. Mustafa Hatipoglu et al. pointed to a recent study reporting that the PCT levels of patients with *S. aureus* bacteremia (median: 0.85 ng/mL) are as high as those of patients with bacteremia resulting from Gram-negative rods (median: 0.78 ng/mL) (2). The patients recruited in that study appear to have had bacteremia without sepsis; clear criteria for sepsis or systemic inflammatory response syndrome (SIRS) were not used for inclusion in that study.

Collectively, we believe that the PCT level is a potential marker of the type of causative pathogen in patients with sepsis. On the other hand, as we mentioned in the discussion section of our study (1), our analysis was limited by the number of recruited patients. The PCT level is known to be affected by various factors; therefore, we are planning a larger study to confirm our results and the diagnostic potential of PCT measurements.

The authors state that they have no Conflict of Interest (COI).  

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References
