CRITICAL CARE

LETTER

Kallistatin - the score beats the marker

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See related research by Lin *et al.*, http://ccforum.com/content/17/1/R27

We appreciate the efforts of Lin and colleagues' study using kallistatin to detect the severity of community-acquired pneumonia (CAP); however, we do have some concerns [1].

Of the gold standards to which kallistatin was compared, only the CURB-65 score was statistically significant to predict mortality. We should anticipate that the previously validated Sequential Organ Failure Assessment (SOFA) and Acute Physiology and Chronic Health Evaluation (APACHE) II scores would also be statistically significant; however, in the study they are not. The expensive and time-consuming blood test is questioned when bedside, inexpensive and quick scoring systems have non-inferior results in predicting outcomes.

There were many patients in the high mortality group with sepsis and acute respiratory distress syndrome (ARDS), and in whom kallistatin has been shown to be consumed [2,3]. These factors are confounders, invalidating the observation that kallistatin levels were altered by severe CAP alone.

The authors note that kallistatin is produced mostly by the liver. The paper notes patients with cirrhosis, but does not provide details of other liver diseases, liver function test values, or patients with ischemic hepatopathy. In these diseases alone kallistatin would be decreased.

Finally, the study was based upon prior *in vitro* data that showed that kallistatin inhibits kallikrein activity [4]. In the study, however, kallikrein was not altered in either group. This questions the overall impact of kallistatin inhibition of kallikrein *in vivo*.

We thank the authors for attempting to validate kallistatin as a marker of severe CAP. This study shows that simple, inexpensive and time-saving scoring methods are equally effective, limiting the widespread use of kallistatin.

Abbreviations
CAP, community-acquired pneumonia.

Competing interests
The authors declare that they have no competing interests.

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Published: 23 April 2013

References

1. Lin WC, Lu SL, Lin CF, Chen CW, Chao L, Chao J, Lin YS: **Plasma kallistatin levels in patients with severe community-acquired pneumonia.** *Crit Care* 2013, **17:**R27.
2. Liu Y, Bledsoe G, Hagiwara M, Shen B, Chao L, Chao J: **Depletion of endogenous kallistatin exacerbates renal and cardiovascular oxidative stress, inflammation, and organ remodeling.** *Am J Physiol Renal Physiol* 2012, **303:**F1230-1238.
3. Chao J, Schmaier A, Chen LM, Yang Z, Chao L: **Kallistatin, a novel human tissue kallikrein inhibitor: levels in body fluids, blood cells, and tissues in health and disease.** *J Lab Clin Med* 1996, **127:**612-620.
4. Zhou GX, Chao L, Chao J: **Kallistatin: a novel human tissue kallikrein inhibitor. Purification, characterization, and reactive center sequence.** *J Biol Chem* 1992, **267:**25873-25880.

doi:10.1186/cc12576
Cite this article as: Draikiwicz S, *et al.*: Kallistatin - the score beats the marker. *Critical Care* 2013, **17:**429.

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