CRITICAL CARE

LETTER

IL-10: a marker of cardiac bypass?

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See related research by Matera *et al.*, http://ccforum.com/content/17/2/R64

We appreciate the efforts of Matera and colleagues' study establishing the utility of IL-10 as a diagnostic and prognostic marker of early sepsis [1]; however, we have some concerns.

Limiting the study to the surgical population limits the generalizability. More importantly, inclusion of 28 (of the 52) patients after on-pump cardiac surgery is concerning. Pump surgery is widely accepted to result in an intense surge in inflammatory markers, including IL-10 [2]. Also, the duration of pump surgery can be variable and the inflammatory response varies with the time spent on pump. The association of IL-10 with a worse prognosis (nonsurvivor group) may therefore not be valid. Cardiac ICU protocols such as the use of perioperative antibiotics were not discussed, which may affect mortality.

In Table 3 of their article, the confidence interval for the odds ratio of IL-10 for the prognosis of bacteremic systemic inflammatory response syndrome patients includes the value 1 [1]. Including this value limits the applicability. The values of biomarkers were not checked daily, and therefore we cannot rule out a new increase in the levels of IL-10 secondary to subsequent episodes of inflammation [3]. The Sequential Organ Failure Assessment score and IL-10 values on day 1 and day 7 correlate with mortality. The utility of an expensive and time-consuming biomarker is questioned when a simple, quick and bedside test could predict the outcome.

Despite the positive results of the marker, it is difficult to imagine how such information would change management in the era of the surviving sepsis guidelines [4].

Authors' response

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We thank the editor for the opportunity to reply to the letter by Balonze and colleagues, who reported some concerns regarding our recently published paper [1].

We do not feel our article is limited to the surgical population: indeed, 36.5% of the enrolled subjects were medical/nonsurgical patients (Table 1 in [1]). We agree that pump surgery results in a substantial increase in inflammatory markers including IL-10 [3]; however, many nonsurgical patients might be subjected to a qualitatively different but comparable stressful and acute event (for example, adult respiratory distress syndrome, shock). The number of nonsurvivors subjected to on-pump cardiac surgery was almost the same in comparison with nonsurvivors never subjected to on-pump cardiac surgery. Also, the time spent during the on-pump phase of cardiac surgery was fairly homogeneous for all patients who underwent such a procedure. The antibiotic administration for the surgical patients followed a default protocol based on wide-spectrum antimicrobial agents.

Moreover, for cardiac surgery patients the sampling at day 1 was in accordance with the main source of inflammation (cardiopulmonary bypass/surgery stress) and with the standard clinical course of these patients. However, the noncardiac surgery patients could effectively show a clinical course with multiple episodes of inflammation/infection; regarding these patients, we agree with the comment of Balonze and colleagues.

Clinical features such as the Sequential Organ Failure Assessment score are simply clinical tools that, in our opinion, should be strengthened with the use of biomarkers [3], reflecting both inflammatory and infectious processes.

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Abbreviations
IL, interleukin.

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

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