European Journal of Pediatrics (2022) 181:3555
https://doi.org/10.1007/s00431-022-04521-9

CORRESPONDENCE

Is procalcitonin a valuable tool in predicting 60-day mortality in premature infants with late onset neonatal sepsis?

Shabih Manzar[1]

Received: 17 April 2022 / Accepted: 1 June 2022 / Published online: 7 June 2022

I read with great interest the article by Ruetsch et al. [1] describing procalcitonin (PCT) as of prognostic value in premature infants with late onset neonatal sepsis (LONS). They reported a PCT value > 8.92 µg/L to be associated with 60-day mortality suggesting that PCT sampling may be optimal at the time of diagnosis and 24 h later.

Interestingly, when I looked at the data, I observed that all infants in the deceased group received vasopressors (100%) while only 2 (4%) in the survivor group. This magnitude of the difference needs further explanation. Further, 82% of the infants in the deceased group received norepinephrine. Could PCT elevation be due to the use of these medications? Elevation in PCT has been reported with drug intoxication without bacterial infection [2].

I noted a discrepancy in the graph (Fig. 4) and text regarding the H0 area under the curve (AUC). In the graph, AUC for H0 was showed as 0.070, while in text it was 0.70. I think, it is a calculation error on the graph, as 0.070 would be a very low AUC.

As the mortality in septic infants could be due to many factors and complex pathophysiological pathways, it would be difficult to point out at PCT alone as a predictor of mortality. PCT is released in response to inflammation rather than infection. The deceased group were very sick in comparison to the survivor group, as evidence by the need for vasopressors. PCT has been shown to be elevated secondary to injury or during surgery [3, 4].

I would agree with the authors' suggestion of using PCT as a prognosis biomarker for preterm infants with LONS; however, I would practice caution with the authors' suggestions to use PCT as a valuable tool in predicting 60-day mortality in preterm neonates with LONS, till further prospective studies with larger sample size are done.

Author contribution Dr. Manzar conceptualized the study and wrote the draft.

Declarations

Competing interests The authors declare no competing interests.

References

1. Ruetsch V, Barreault S, Le Sache N, Tissères P (2022) Procalcitonin is a prognosis biomarker in very preterm neonates with late onset sepsis: a pilot study. Eur J Pediatr 181(4):1459–1464. https://doi.org/10.1007/s00431-021-04326-2
2. Lovas A, Agoston Z, Késmárky K, Hankovszky P, Molnár Z (2014) Extreme procalcitonin elevation without proven bacterial infection related to amphetamine abuse. Case Rep Crit Care 179313. https://doi.org/10.1155/2014/179313
3. Wanner GA, Keel M, Steckholzer U, Beier W, Stocker R, Ertel W (2000) Relationship between procalcitonin plasma levels and severity of injury, sepsis, organ failure, and mortality in injured patients. Crit Care Med 28(4):950–7. https://doi.org/10.1097/00003246-200004000-00007
4. Kilger E, Pichler B, Goetz AE, Rank N, Welte M, Mörstedt K, Vetter HO, Gödje O, Schmitz C, Lamm P, Engelschalk E, Muehlbeyer D, Frey L (1998) Procalcitonin as a marker of systemic inflammation after conventional or minimally invasive coronary artery bypass grafting. Thorac Cardiovasc Surg 46(3):130–3. https://doi.org/10.1055/s-2007-1010209

Communicated by Daniele De Luca

✉ Shabih Manzar
shabih.manzar@lsuhs.edu

[1] Section of Neonatology, Department of Pediatrics, Louisiana State University Health Sciences Center, 1501 Kings Highway, Shreveport, LA 71103, USA