STUDENTS' CORNER
LETTER TO THE EDITOR

Cell-free haemoglobin in trauma: A potential biomarker with unanswered questions

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Dear Editor, Cell-free haemoglobin (CFH) plays a critical role in the pathophysiology of sepsis and is associated with an increased risk of mortality and organ dysfunction. It particularly causes tissue damage in the kidneys and lungs through nitric oxide scavenging, pro-inflammatory signalling, and oxidative stress.[1] In a recent study, it has been indicated that the role of CFH is beyond sepsis, as it can also contribute to endothelial dysfunction, organ injury, and coagulopathy in trauma patients.[2]

Moreover, CFH may hold prognostic value, as patients with high CFH levels upon admission exhibited worse outcomes than those with mildly elevated levels.[2] However, CFH is also elevated in various non-traumatic medical conditions.[1,3] The referenced study does not adequately address potential confounders that might cause elevated CFH levels prior to trauma. While the study has the majority of subjects presenting with blunt trauma, 82% of the relevance of variation of CFH in other types of traumas could be of clinical relevance and must be investigated. Furthermore, the subject's markers were only followed for 24 hours after admission, limiting the understanding of the long-term role of CFH in trauma patients, which could be crucial in further management.[2]

Towards the therapeutic approach, the role of haptoglobin in scavenging surplus haemoglobin is relevant in improving the prognosis of polytrauma patients.[2,4] Lastly, therapeutic interventions currently being researched could also be applied on subjects in future studies to understand the trend of CFH post-treatment and clinical indications for intervention.[5]

In conclusion, it is important to fully establish the significance of the novel approach of CFH in trauma while addressing certain limitations. Expanding the study population, evaluating the confounding factors, and comparison with existing biomarkers would essentially provide a clearer perspective on CFH's role in trauma. Additionally, understanding how CFH develops beyond the acute phase and how it responds to treatment could improve its use in patient care. Without addressing these critical gaps, CFH might remain another marker in search of clinical relevance.

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