

Transfusion practices in trauma

Sir,

We would like to thank the reader for his comments on our recently published article on “Transfusion practice in trauma” published in IJA.^[1] In the article, emphasis was on the importance of early recognition of trauma-induced coagulopathy (TIC). The tests to assess coagulopathy such as prothrombin time (PT), international normalised ratio (INR), and activated partial thromboplastin time (aPTT) are done through central laboratory (CL) testing, and require extended length of time to process the results. Extended duration of time to process the test results through CL defeats the fundamental idea of early recognition of TIC. However, there are bedside rapid INR testing devices such as INRatio^[2,3] and CoaguChek,^[4] that rapidly determines INR within 120 s. These rapid testing devices play a critical role in the management of TIC in the emergency department (ED), saving at least 60 min in the process of obtaining PT, aPTT and INR results.^[3]

Rapid INR testing devices have been available and are being used in some of the major trauma centres and EDs worldwide for the last 10 years.^[3] They are cost-effective and easy to perform. Studies have shown that INR rapid testing is a suitable alternative to CL.^[3-5] These rapid INR devices achieved a clinically acceptable level of accuracy in patients with suspected TIC, providing clinically relevant data to help the physician in the decision-making process.^[3] However, because of the possibility of false positives or negatives, decision making should also incorporate physical examination, estimation of blood loss, rapid haemoglobin determination, focused assessment with sonography for trauma and/or computed tomographic imaging. The rapid INR device is a critical tool in assessing coagulopathy and predicting requirements for a massive transfusion in trauma patients and have already been included in several management algorithms.^[6-9]

In trauma victims, an initially abnormal PT and aPTT correlates with increased mortality.^[10] PT, aPTT, and INR do not address the clot's strength; clot's stability and extent of any existing hyperfibrinolysis. However, thromboelastogram (TEG) or rotation thromboelastometry (ROTEM) helps in early diagnosis of the mechanism of coagulopathy, the strength and

stability of a clot, and early detection of hyperfibrinolysis in trauma patients; testing the blood at the actual body core temperature of the victim.^[6] TEG/ROTEM provides a full spectrum of trauma patient's haemostatic status along with a precise differential diagnosis of the primary cause of patient's coagulopathy,^[10] requiring on an average 30 min for the test results.^[6] TEG/ROTEM has been shown to be a useful tool in guiding transfusion in trauma patients^[10-13] and an algorithm for trauma patients has been proposed.^[11]

Because of the rapid availability of the INR, within 120 s, addition of rapid INR devices to the massive transfusion protocol for managing patients with life-threatening injuries may increase their accuracy, and decrease unnecessary transfusions that carry specific adverse events (multiple organ failure, and acute respiratory distress syndrome).

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	DOI: 10.4103/0019-5049.155015

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