As illustrated in the institutional ROTEM-based transfusion algorithm (Figure 3), several physiological conditions were first optimized, including temperature (> 35?c), ionized calcium (>1mmol/L), hemoglobin (>7.5g/dL) and pH (>7.2). Once these parameters were corrected, ROTEM analysis was used to identify the underlying coagulation abnormality and guide specific therapy. The algorithm prioritizes identification of residual heparin effect by comparing the clotting time in INTEM and HEPTEM assays. A prolonged INTEM clotting time with an increased INTEM / HEPTEM ratio (>1.25) suggests incomplete heparin reversal, for which additional protamine is recommended. If no residual heparin effect is detected, clot firmness parameters are evaluated. A reduced FIBTEM A10 (<10mm) indicates hypofibrinogenemia and guides administration of fibrinogen concentrate or cryoprecipitate. When EXTEM A10 is reduced (<40mm) in the presence of preserved FIBTEM values, platelet dysfunction or thrombocytopenia is suspected and platelet transfusion is recommended. Prolongation of EXTEM clotting time (>80 seconds) may indicate deficiency of coagulation factors and can be treated with plasma or prothrombin complex concentrate. In the patients described in this series, ROTEM enabled rapid identification of different causes of coagulopathy, including prolonged prothrombin time, hypofibrinogenemia, platelet dysfunction and residual heparin effect. Targeted treatment based on the ROTEM findings resulted in reduction of chest drain collection and stabilization of hemodynamics. These observations highlight the potential clinical value of ROTEM-guided transfusion algorithms in improving hemostatic management after cardiac surgery. Although our experience is limited to a small number of patients, the findings are consistent with previous studies demonstrating that ROTEM-guided transfusion strategies may reduce unnecessary blood product administration and improve clinical outcome in cardiac surgical patients.

Conclusion:

Rotational thromboelstometry (ROTEM) is an effective point-of-care diagnostic tool for the evaluation and management of postoperative bleeding in adult patients undergoing cardiac surgery. In this case series involving two patients, ROTEM provided rapid and comprehensive assessment of coagulation abnormalities, allowing clinicians to identify the specific cause of bleeding and implement targeted hemostatic therapy. The use of a ROTEM-guided transfusion algorithm facilitated timely and appropriate administration of blood components, thereby reducing reliance on empirical transfusion strategies. This approach helped minimize unnecessary transfusion of blood products and potentially lowered the risk of transfusion-related complications. Moreover optimized transfusion practices can lead to better utilization of healthcare resources and contribute to cost reduction. Early identification and correction of coagulopathy through ROTEM may also promote faster hemodynamic stabilization, which can ultimately reduce the duration of intensive care unit stay and overall hospital length of stay. Therefore, incorporating ROTEM into routine perioperative bleeding management protocols in cardiac surgery may improve clinical outcomes, enhance patient safety and support more cost-effective care

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