

The clinical and economic impact of ROTEM-guided PBM in trauma

The impact of bleeding in severe trauma

- Traumatic injury contributes to approximately 10% of deaths worldwide, accounting for more than 5.8 million people annually¹
- Uncontrolled post-traumatic bleeding is the leading cause of potentially preventable death in trauma patients²
- Hemorrhage is responsible for 30–40% of trauma-related deaths³

European Guideline on Management of Major Bleeding and Coagulopathy Following Trauma recommends:⁴

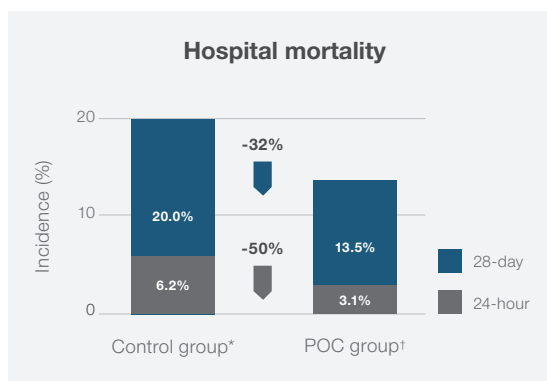
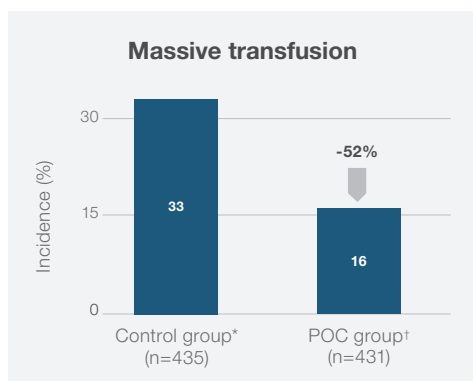
- Routine, early, and repeated monitoring and/or viscoelastic testing
- Immediate monitoring and measures to support coagulation
- Resuscitation using a goal-directed strategy with viscoelastic testing
- Treatment with fibrinogen concentrate or cryoprecipitate, if significant bleeding is accompanied by viscoelastic signs of a functional fibrinogen deficit
- Repeat doses of fibrinogen concentrate/cryoprecipitate, guided by viscoelastic monitoring
- Treatment with platelets if platelet dysfunction is documented in a patient with continued microvascular bleeding
- If fibrinogen levels are normal, administration of prothrombin complex concentrate or plasma based on delayed coagulation using viscoelastic monitoring
- Local implementation of evidence-based guidelines for bleeding management in trauma
- Parameters to assess key measures of bleeding control and outcome

The impact of an early coagulation support protocol with ROTEM testing

Early coagulation support (ECS) with ROTEM point-of-care (POC) testing can lead to significant reduction in massive transfusion and mortality in trauma patients.⁵

A multicenter study was conducted to assess the impact of an ECS protocol on blood product transfusion, mortality, and treatment cost. The systematic use of ROTEM POC testing to monitor coagulation was introduced as an integral component of the protocol.

Significant reductions in massive transfusion and hospital mortality



Potential reduction in

Massive transfusion

52%

24-hour mortality

50%

28-day mortality

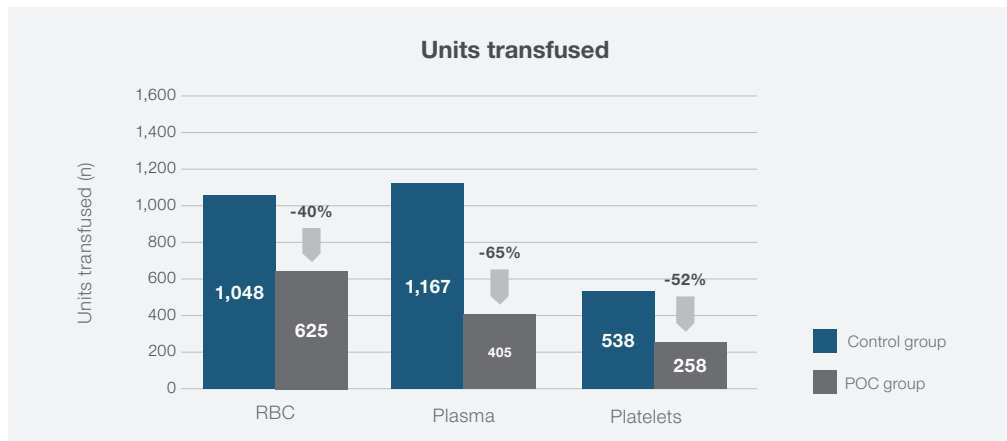
32%

*Standard treatment with traditional laboratory tests.

†ECS with ROTEM testing.

ROTEM-guided PBM can reduce transfusion and overall cost in trauma

The study also demonstrated significant reduction in transfused blood products and overall costs of transfusion and coagulation support, including POC tests and fibrinogen replacement.⁵



Potential reduction in

Red Blood Cells (RBC)

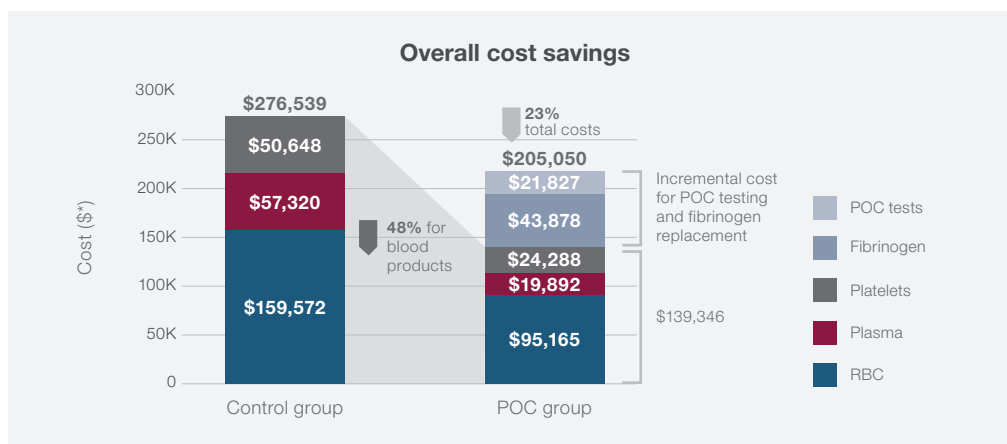
40%

Plasma

65%

Platelets

52%



Potential cost savings in

Total transfused units

48%

Total costs

23%

Example: Overall potential savings, including blood products[†] charges for POC testing and fibrinogen replacement.

Assumes 100 trauma patients[†]/year

\$168.64*

Average potential overall savings/patient⁵

X

100

Patients/year

=

\$16,864

Potential overall savings/100 patients

ROTEM POC testing trauma may reduce blood product transfusion, treatment costs, and mortality, and ultimately improve patient care.

*Converted from € to USD.

[†]Severely injured patients (Injury Severity Score [ISS] >15)⁵.

References

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