

## Preface

# Emerging Use of Viscoelastography in Thrombosis and Hemostasis: A Challenge to Conventional Coagulation Tests?—Part II: The Use of Thromboelastography and Thromboelastometry in the Assessment of Clinical Disorders

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In the first issue of *Seminars in Thrombosis and Hemostasis* related to the theme of viscoelastography in thrombosis and hemostasis, both thromboelastography (TEG) and rotational thromboelastometry (ROTEM) were presented to our readers as methods to study hemostatic functions. In the present issue, more articles on this topic continue with their application to clinical conditions. The first article is a review of literature on their use in the management of patients with hypercoagulability in prostate cancer.<sup>1</sup> This is followed by a discussion of their use in the perioperative period of liver transplantation.<sup>2</sup> The next article discusses the use of ROTEM in predicting transfusion requirements in total joint arthroplasties.<sup>3</sup> Similarly, TEG is useful in the management of postpartum hemorrhage.<sup>4</sup> Viscoelastography is also used in preprocedure workup in patients with cirrhosis of the liver,<sup>5</sup> and in those with myeloproliferative neoplasms.<sup>6</sup> The next article deals with a modification of ROTEM by not activating the coagulation process *in vitro* in order to detect any endogenous activation of hemostasis in the non-activated thromboelastometry (NATEM) assay.<sup>7</sup> The TEG can also be used to evaluate platelet function.<sup>8</sup> The last article shows a new technique using resonant acoustic rheometry that measures the kinetics of coagulation.<sup>9</sup>

We hope our readers will find these articles as informative and exciting as we do. A better understanding and utility of viscoelastography of TEG and ROTEM is challenging.

## Conflict of Interest

None declared.

## References

- 1 Fainchtein K, Tera Y, Kearn N, Noureldin A, Othman M. Hypercoagulability and thrombosis risk in prostate cancer - the role of thromboelastography. *Semin Thromb Hemost* 2023;49(02):111–118
- 2 Stewart E, Nydam TL, Hendrickse A, Pomposelli JJ, Pomfret EA, Moore HB. Viscoelastic management of coagulopathy during the perioperative period of liver transplantation. *Semin Thromb Hemost* 2023;49(02):119–133
- 3 Tsantes AG, Papadopoulos DV, Roustemis AG, et al. Rotational thromboelastometry predicts transfusion requirements in total joint arthroplasties. *Semin Thromb Hemost* 2023;49(02):134–144
- 4 Collins R, Bell S. The role of thromboelastography during the management of postpartum hemorrhage: background, evidence and practical application. *Semin Thromb Hemost* 2023;49(02):145–161
- 5 Hartmann J, Dias JD, Pivalizza EG, Garcia-Tsao G. Thromboelastography-guided therapy enhances patient blood management in

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- cirrhotic patients: a meta-analysis based on randomized controlled trials. *Semin Thromb Hemost* 2023;49(02):162–172
- 6 Lim HY, Ho P. Thrombosis risk assessment in myeloproliferative neoplasm – Is there a role for viscoelastic testing? *Semin Thromb Hemost* 2023;49(02):173–181
- 7 Sokou R, Georgiadou P, Tsantes AG, et al. The utility of NATEM assay in predicting bleeding risk in critically ill neonates. *Semin Thromb Hemost* 2023;49(02):182–191
- 8 Hartmann J, Curzen N. Modified thromboelastography for per-interventional assessment of platelet function in cardiology patients: a narrative review. *Semin Thromb Hemost* 2023;49(02):192–200
- 9 Li WH, Hobson EC, Bunch CM, et al. Resonant acoustic rheometry to measure coagulation kinetics in hemophilia A and healthy plasma: a novel viscoelastic method. *Semin Thromb Hemost* 2023;49(02):201–208