

New solutions for complex bleeding in trauma

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The current issue of the European Journal of Trauma and Emergency Surgery includes a “focus Issue” on “New Solutions for Complex Bleeding in Trauma”. Three up-to-date, well written review articles provide the reader with the most current summary of the literature on three critical issues we all face in our trauma centers daily.

The article written by Berndtson and Coimbra, address the important issue of the change in epidemiology of trauma patients, with more elderly patients being treated in trauma centers. As life expectancy increases, more elderly patients will be exposed to injury and will require treatment in our specialized centers. The problem is that they bring with them several comorbidities and a long list of medications. One of the most important and critical problems in the management of elderly trauma patients is the fact that many of them are using anticoagulation medications and platelet inhibitors for a variety of causes. The authors review the relevant literature on traumatic outcomes with use of such medications, as well as data on ideal reversal strategies. The use of prothrombin complex concentrates (PCC’s) for warfarin reversal, platelet transfusions and DDAVP for clopidogrel reversal, and the challenge of reversing the new direct thrombin and factor Xa inhibitors are discussed in detail.

The article by Martin and Schreiber examine the new trends in acute resuscitation and describe novel and promising resuscitation methods. The evidence for the potential incorporation of tranexamic acid in resuscitation algorithms is presented. Additionally, the authors discuss in detail the concept of hypotensive resuscitation and provide new insights in the pathophysiology of shock including the importance of the glycocalyx and changes in coagulation following injury. The article ends with an extensive and current review of potential interventions, including the early use of plasma, empiric use of fibrinogen and factor VIIa, use of PCC’s, fibrinogen concentrate, freeze dried plasma, arginine-vasopressing, and immunomodulatory antioxidants.

The final article, written by Brenner, Hoehn and Rasmussen, describe the revolution in the use of catheter-based or endovascular techniques to manage vascular trauma in recent years. The therapeutic use of catheter-based techniques for bleeding control (embolization) and large vessel endovascular repair (stents) are described in detail. The article also describes the newest method to obtain aortic occlusion by endovascular means and avoiding the morbidity associated with a left side thoracotomy for aortic cross-clamping: resuscitative endovascular balloon occlusion of the aorta (REBOA).

We believe that these three outstanding review articles will provide new information and guidance in the management of difficult trauma patients that present to trauma centers worldwide with acute bleeding due to a variety of causes.

Enjoy the reading.

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Conflict of interest R. Coimbra and A. Leppaniemi declare that there are no conflicts of interest.