

Panel Discussion of Venous Thromboembolism in Spinal Cord Injury

Course ID 258

Christina Draganich DO, Craig Hospital

Jeffrey Berliner, DO; Thomas Bryce, MD; Brittany Snider, MD; Andrew Park, MD

The development of venous thromboembolism (VTE) is a common complication in the acute phase of spinal cord injury (SCI) and remains a significant cause of morbidity and mortality. The Goals of this Course would be: 1- Review the latest Consortium for Spinal Cord Medicine Clinical Practice Guidelines (CPG) from 2016 that provides evidence informed recommendations that remain the cornerstones of VTE management. 2- Review literature after the publication of the 2016 guidelines, with special consideration from the works of Draganich et al. and Hon et al. that provides evidence to refute the current recommendations regarding screening VTE upon admission to acute inpatient rehabilitation. 3- Discuss the blood biomarkers that may identify people with spinal cord injury that are at increased risk for VTE and may drive treatment protocols. 4- Discuss treatment recommendations and how this paradigm may change based on the recognition of blood biomarkers. The Consortium for Spinal Cord Medicine Clinical Practice Guidelines (CPG) from 2016 provided evidence informed recommendations that remain the cornerstones of VTE management. One recommendation in these guidelines is that individuals with SCI not be routinely screened with duplex ultrasonography for clinically asymptomatic deep venous thrombosis (DVT) upon admission to acute inpatient rehabilitation. This was a thoughtful recommendation based on discussion of the current literature up to 2016 by the panel committee chaired by Dr. Thomas Bryce. A recent body of literature suggests a high incidence of VTE and high likelihood of thrombus progression in patients with SCI. Research by Draganich et al (2023) investigated the incidence of VTE on screening ultrasonography and found that DVT was identified in 70% of this cohort on admission to rehabilitation. Of those who were identified to have a DVT and were initiated on therapeutic anticoagulation, none developed PE. Hon et al (2019) also found a high prevalence of DVT detected through routine duplex screening and that individuals with an acute distal DVT had a high likelihood of thrombus progression. The new research calls this specific guideline in to question, and may be the basis for a change in practice. Recent literature has also investigated how blood biomarkers affect the coagulation cascade and lead to clot formation after SCI. Andrew Park et al (2023) discovered that circulating levels of coagulation factors VII, VIII and X were significantly higher (~20-45%) in the adults with SCI than in non-injured people. Park et al. also discovered that t-PA antigen, PAI-1 antigen and PAI-1 activity were markedly higher (~50-800%; $P < 0.05$) in adults with SCI compared with non-injured adults. Berliner et al. is also currently investigating many blood biomarkers including factors Xa and Factor VIII to help drive recommendations for the identification and treatment of VTE. This panel will start by reviewing the most recent guidelines as presented by Thomas Bryce, MD and will then review current research on screening and blood biomarkers as presented with Christina Draganich, DO, Jeffrey Berliner, DO, and Brittany Snider, MD.. This will provoke a thoughtful panel discussion of possible practice changing knowledge with audience participation.

Learning Objective 1 Review the latest clinical practice guidelines for VTE management in SCI

Learning Objective 2 Review current research on VTE screening and blood biomarkers that may identify individuals with SCI at increased risk for VTE

Learning Objective 3 Cultivate thoughtful panel discussion of possible practice changing knowledge regarding VTE management