

New Anticoagulants and Regional Anaesthesia Catheter Techniques (Neuraxial, Perineural)

Richard W. Rosenquist, M.D.
Professor of Anesthesia
Director, Pain Medicine Division
University of Iowa
Iowa City, IA
USA

Objectives

1. Identify anticoagulants that may impact the performance of regional anesthesia techniques.
2. Review the current ASRA guidelines regarding regional anesthesia in patients receiving antithrombotic or thrombolytic therapy.
3. Understand the limitations of guidelines to reduce the risk of bleeding complications related to regional anesthesia
4. Determine how to incorporate anticoagulation guidelines into daily practice

Regional anesthesia has been associated with improvements in patient outcomes including mortality, major morbidity and patient-oriented outcomes. In the case of epidural anesthesia and continued epidural analgesia, a major component of the decrease in morbidity and mortality is related to attenuation of the hypercoagulable response and an associated reduction in the frequency of thromboembolism. Although this effect is recognized, it is insufficient as a sole method of thromboprophylaxis. As a result, various anticoagulants, antiplatelet and thrombolytic medications have been recommended and used in the prevention and treatment of thromboembolism. Development and evolving standards for the prevention of perioperative venous embolism as well as the introduction of increasingly potent antithrombotic medications have produced increased concerns regarding the risk of bleeding in association with neuraxial and perineural techniques. These compounds include thrombolytics, unfractionated heparin, low molecular weight heparin, oral anticoagulants, antiplatelet agents, herbal therapies, thrombin inhibitors and Fondaparinux. In response to these safety issues, a number of guidelines have been published. The most recent version was published by ASRA and is the third version of their evidence based guidelines. These statements are based on the available evidence and the collective experience of recognized experts in neuraxial anesthesia and anticoagulation. The relative rarity and the potential for devastating outcomes prevent the use of prospective-randomized trials to systematically evaluate the risks and there are no current laboratory models. Recommendations contained in these guidelines may help to increase safety and improve patient care. If a regional anesthetic technique is planned, the patient's anticoagulation status should be optimized prior to needle insertion. Adherence to existing guidelines will not completely eliminate bleeding complications related to regional anesthesia and vigilance in monitoring to facilitate early recognition and prompt intervention are critical to improve patient safety and optimize neurologic outcome. It is also recognized that variances from the guidelines may be necessary and appropriate for individual patients based on the judgment of the anesthesiologist. This lecture will review the most recent guidelines which may be found at www.asra.com and discuss areas of controversy with regard to the guideline recommendations as well as data published subsequent to their release.

References

1. Horlocker TT, Wedel DJ, Rowlingson JC, Enneking FK, Kopp SL, Benzon HT, Brown DL, Heit JA, Mulroy MF, Rosenquist RW, Tryba M, Yuan CS. Regional anesthesia in the patient receiving antithrombotic or thrombolytic therapy: American Society of Regional Anesthesia and Pain Medicine Evidence-Based Guidelines (Third Edition). *Reg Anesth Pain Med* 2010;35:64-101.
2. Horlocker TT, Wedel DJ, Rowlingson JC, Enneking FK and American College of Chest Physicians. Executive Summary: Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy American Society of Regional Anesthesia and Pain Medicine Evidence-Based Guidelines (Third Edition). *Reg Anesth Pain Med* 2010;35:102-5.
3. Hirsh J, Guyatt G, Albers GW, Harrington R, Schünemann HJ, American College of Chest Physicians. Antithrombotic and thrombolytic therapy: American College of Chest Physicians Evidence- Based Clinical Practice Guidelines (8th Edition). *Chest* 2008;133:110S-112S.
4. Benzon HT, Avram MJ, Benzon HA, Kirby-Nolan M, Nader A. Factor VII levels and international normalized ratios in the early phase of warfarin therapy. *Anesthesiology* 2010;112:298-304.
5. Butterworth JF 4th, Rathmell JP. Standard care, standards for care or standard of care? *Anesthesiology* 2010;112:277-8.
6. Fleischmann KH, Kuter DJ, Coley CM, Rathmell JP. Practice guidelines often fail to keep pace with the rapid evolution of medicine; a call for clinicians to remain vigilant and revisit their own practice patterns. *Reg Anesth Pain Med* 2010;35:4-7.
7. Sharrock NE, Gonzalez Della Valle A, Go G, Lyman S, Salvati EA. Potent anticoagulants are associated with a higher all-cause mortality rate after hip and knee arthroplasty. *Clin Orthop Relat Res* 2008;466:714-21.