KEY ADVANCES
PRACTICE ADVANCE

Anticoagulant Reversal Strategies in the Emergency Department

Reconfirmed May 2024

Why is this topic important? Direct oral anticoagulants (DOACs) are used increasingly for various indications. Initially, these agents were approved for use without a corresponding strategy to stop serious bleeding in patients taking DOACs. Emerging data and policy guidelines are now available to reverse life-threatening or critical-site bleeding.

How will this change my clinical practice? Consensus guidelines promote standardized approaches to deciding which patients on DOACs with major bleeding are likely to benefit from reversal and when anticoagulation can be restarted after minor bleeding.

Synopsis Focus Points: All DOACs may be reversed with prothrombin complex concentrates (PCCs). Specific reversal agents are recommended if available.

Background:

DOACs are used to prevent and treat thromboembolic-associated events, such as stroke, venous thromboembolism, and pulmonary thromboembolism. Their main advantage over warfarin is that routine blood monitoring is not necessary. Bleeding is the most common complication, and specific laboratory tests are typically unavailable or unhelpful.

A multidisciplinary panel suggested anticoagulant reversal strategies in the emergency department (ED). (1) They identified three critical considerations for managing the bleeding patient taking an anticoagulant: 1) is this a life-threat? 2) is this a critical site for complications? and 3) what are the specifics of the agent, dose, and time taken?

Life-threatening bleeding is defined as a hemoglobin drop of ≥5 g/dL from previous, uncontrolled bleeding requiring procedural intervention, or hemodynamic instability. **Critical sites for bleeding** include airway, brain, pericardium, aorta, spine, eye, and closed space at risk for compartment syndrome.

Many patients have **major (serious) bleeding** rather than imminently life-threatening presentations. Major bleeding is defined as a hemoglobin drop of ≥2 g/dL from previous or one that requires a blood transfusion of ≥2 units of packed red blood cells. (2)

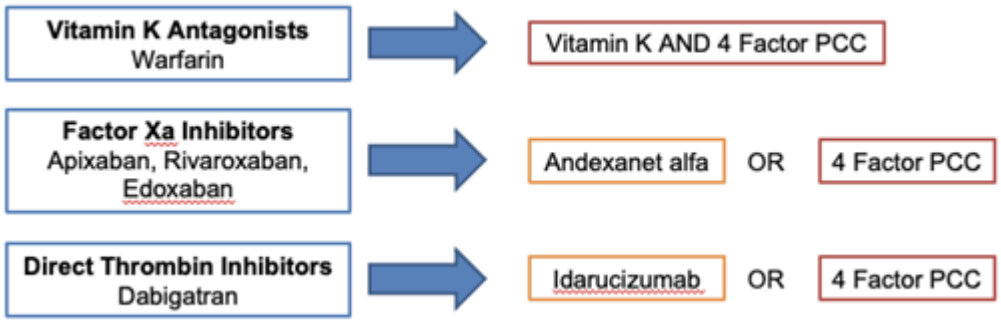
Life-threatening bleeding or critical site bleeding events should be treated with a reversal agent in addition to supportive measures and other potential therapeutic interventions (surgical, interventional radiology, or endoscopic). If the DOAC has an available reversal agent, it should be used as a first-line strategy. (1,2,4) Specific reversal agent examples are idarucizumab for dabigatran, and andexanet alfa for apixaban and rivaroxaban.

If these are not available or the patient does not know which DOAC they take, then **PCC** should be given. (1,2,4) Currently, only 4-factor PCC Kcentra is US Food and Drug Administration–approved for the reversal of major or life-threatening bleeding in patients taking warfarin. Kcentra is frequently used off-label for the reversal of DOACs. **Fresh frozen plasma** is an alternative to PCCs if unavailable, but it requires time to defrost (typically 2 hours), may involve large volumes to be administered, and has limited data to support its use for DOAC reversal.

Hemodynamically stable patients with major bleeding should have their agent held and the source of the bleeding addressed. Pressure should be applied if applicable and consideration should be given to a procedural intervention (i.e., interventional radiology or surgery) if appropriate. (2)

Minor bleeding (e.g., nose bleeds, bruising) may be monitored, the next dose held, and reassessment made as to restarting the medication. (3,4) Restarting the DOAC may be considered after a minor bleeding episode.

This is a strong recommendation based on consensus guidelines.



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Resources for Additional Learning:

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