Evidence-Based Clinical Pathway: Supratheraputic INR due to Warfarin

Prepared by: Cory B, Schieche C, Gentges J

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Primary Sources: Holbrook A, Schulman S, Witt D. Evidence-Based Management of Anticoagulant Therapy: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *Chest.* 2012;141(2_suppl):e152S-e184S. doi:10.1378/chest.11-2295. Ansell J, Hirsh J, Hylek E. Pharmacology and Management of the Vitamin K Antagonists*: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). *Chest.* 2008;133(6_suppl):160S-198S. doi:10.1378/chest.08-0670 Holland L, Warkentin TE, Refaai M, Crowther MA, Johnston, MA, Sarode, R..Suboptimal effect of a three-factor prothrombin complex concentrate (Profilnine-SD) in correcting supratherapeutic international normalized ratio due to warfarin overdose. Transfusion. 2009 Jun;49(6):1171-Garcia DA, Regan S, Crowther M, Hylek EM. The risk of hemorrhage among patients with warfarin-associated coagulopathy. J Am Coll Cardiol 2006; 47:804.Crowther MA, Ageno W, Garcia D, et al. Oral vitamin K versus placebo to correct excessive anticoagulation in patients receiving warfarin: a randomized trial. Ann Intern Med 2009; 150:293.

Pathway applicability:
Patients with supratheraputic INR due to warfarin

Medication Dosage Guide

Dosage for 4 Factor PCC:
Pretreatment INR 2 to <4: Give **25 units/kg IV** (max 2500 units)
Pretreatment INR 4 to 6: Give **35 units/kg IV** (max 3500 units)
Pretreatment INR above 6: Give **50 units/kg IV** (max 5000 units)

Dosage for FFP: 15-30 mL/kg IV (Usually 2-4 units)

Dosage for Recombinant factor VII: 90mcg/kg IV

Dosage for 3 Factor PCC: 50 units/kg IV

Evidence of serious or life threatening bleeding?

No

Yes

What is the INR?

4.5-10

>10.0

1: Omit 1 or 2 doses of warfarin
2: Recheck INR in 1-3 days
3: Resume warfarin when INR in therapeutic range

1: Hold warfarin
2: **Vit. K 2.5-5.0 mg PO**
3: Recheck INR in 1-3 days
4: Resume warfarin when INR in therapeutic range

1: Hold warfarin
2: **Vit. K 10mg IV q12h**
3: Give **4 Factor PCC** (preferred) per dosage guide OR give **3 Factor PCC**
4: Verify INR normalization in 30 min

Consider discharge for patients with close followup and the ability to follow discharge instructions (avoid falls, accidents, strenuous activity)

INR normalized (<1.5)?

No

1: Give **FFP 15-30 mL/kg IV**
2: Recheck INR in 1-2 hours

Consider admission for observation (fall risk, poor follow up, history of anticoagulation related bleeding, active bleeding)

Yes

Proceed with definitive therapy for life threatening bleeding