September 2022

Inpatient Venous Thromboembolism Prevention Protocol

I. Objective

The aim of this protocol is to identify women at risk for venous thromboembolism (VTE) and determine the appropriate strategy to prevent VTE. For information about diagnosis and management of women with thrombophilia and/or VTE history see Thrombophilia and Anticoagulation Protocol or VTE Screening and Treatment protocol.

II. Inpatient antepartum prophylaxis

All antepartum patients admitted to the inpatient obstetric service need VTE prophylaxis, either mechanical with sequential compression devices (SCD) or pharmacologic (unfractionated or low molecular weight heparin). Please see Figure 1.

a. Mode of prophylaxis should be assessed at least daily and additionally as needed in patient's unique clinical scenario in provider note.
b. If patient meets criteria for pharmacologic prophylaxis, low-molecular weight heparin (LMWH) is generally preferred.
c. Pharmacologic prophylaxis should generally be given after the daily fetal NST.
d. At discharge, need for ongoing VTE prophylaxis should be reassessed.

III. Inpatient Intrapartum Prophylaxis

The majority of patients may stop anticoagulation for delivery. Please see thrombophilia protocol for those not eligible for discontinuation of pharmacologic anticoagulation.

a. All patients in labor should have SCDs in place unless actively mobile.
b. All cesarean patients should have SCDs placed prior to cesarean and continued postpartum.
c. Consider anesthesia consultation in high-risk patients.
d. Anticoagulation increases risk of epidural hematoma with regional anesthesia. Minimum latency between last dose of anticoagulation and regional anesthesia eligibility are:
    i. Enoxaparin
        1. Enoxaparin ≤ 40 mg
            a. ≥ 12 hours after the last dose
        2. Enoxaparin > 40 mg
            a. UCMC Institution recommendations > 24 hours
    ii. Unfractionated heparin – prophylactic dosing
        1. 5000 units UFH
            a. 4-6 hours since last dose
            b. OR documented coagulation status with aPTT in normal range or undetectable anti factor Xa
        2. 7500-10,000 units UFH
            a. ≥ 12 hours after the last dose
            b. OR documented coagulation status with aPTT in normal range or undetectable anti factor Xa

3. > 10,000 units UFH
    a. > 24 hours since last dose receiving greater than 10,000 units of UFH per day; neuraxial anesthesia may be used 4 hours after last dose or with PTT < 40, 2 hours after last dose. Protamine sulfate may be used in select emergent cases with expert consultation.

IV. Inpatient Postpartum Prophylaxis

All postpartum patients admitted to the inpatient obstetric service need VTE prophylaxis, either mechanical with sequential compression devices (SCD) or pharmacologic (unfractionated or low molecular weight heparin). Please see Figure 1.

a. Postpartum is the highest risk time for VTE, especially in the first 2 weeks.
b. Mode of prophylaxis should be reassessed at least daily and additionally as needed in patient's unique clinical scenario.
c. Physicians should consider hemorrhage risk when restarting pharmacologic prophylaxis.
d. If indicated, pharmacologic anticoagulation resumption time frames with regards to neuraxial blockade are listed below:
    i. Enoxaparin 40 mg
        1. ≥ 12 hours after neuraxial procedure AND ≥ 4 hours after epidural catheter removal
    ii. Enoxaparin ≥ 1 mg/kg
        1. ≥ 24 hours after neuraxial procedure AND ≥ 4 hours after epidural catheter removal
    iii. Unfractionated heparin prophylaxis (7500 units or 10,000 SC BID)
        1. ≥ 1 hour after neuraxial procedure or ≥ after epidural catheter removal
        2. Indwelling catheters can be maintained with 5000 units UFH twice daily
    iv. IV unfractionated heparin infusion
        1. ≥ 1 hour after neuraxial block before initiating or restarting anticoagulation
e. Sequential compression devices should be left in place until pharmacologic VTE prophylaxis is resumed.
f. At discharge, need for ongoing VTE prophylaxis should be reassessed.

V. Dosing Strategy for Enoxaparin for VTE prophylaxis

Enoxaparin prophylactic dosing strategies are more controversial at the extreme of body weight. Although higher dosing strategies demonstrate more consistent laboratory parameters (anti Xa), they have not been proven to be more effective. Dosing strategies at extremes of body weight are up to provider discretion, but in general:

a. If BMI < 40 kg/m^2, enoxaparin 40 mg daily
b. If BMI is 40 kg/m^2 -59.9 kg/m2, enoxaparin 40 mg BID
c. If BMI ≥ 60 kg/m^2, enoxaparin 0.5 mg/kg BID

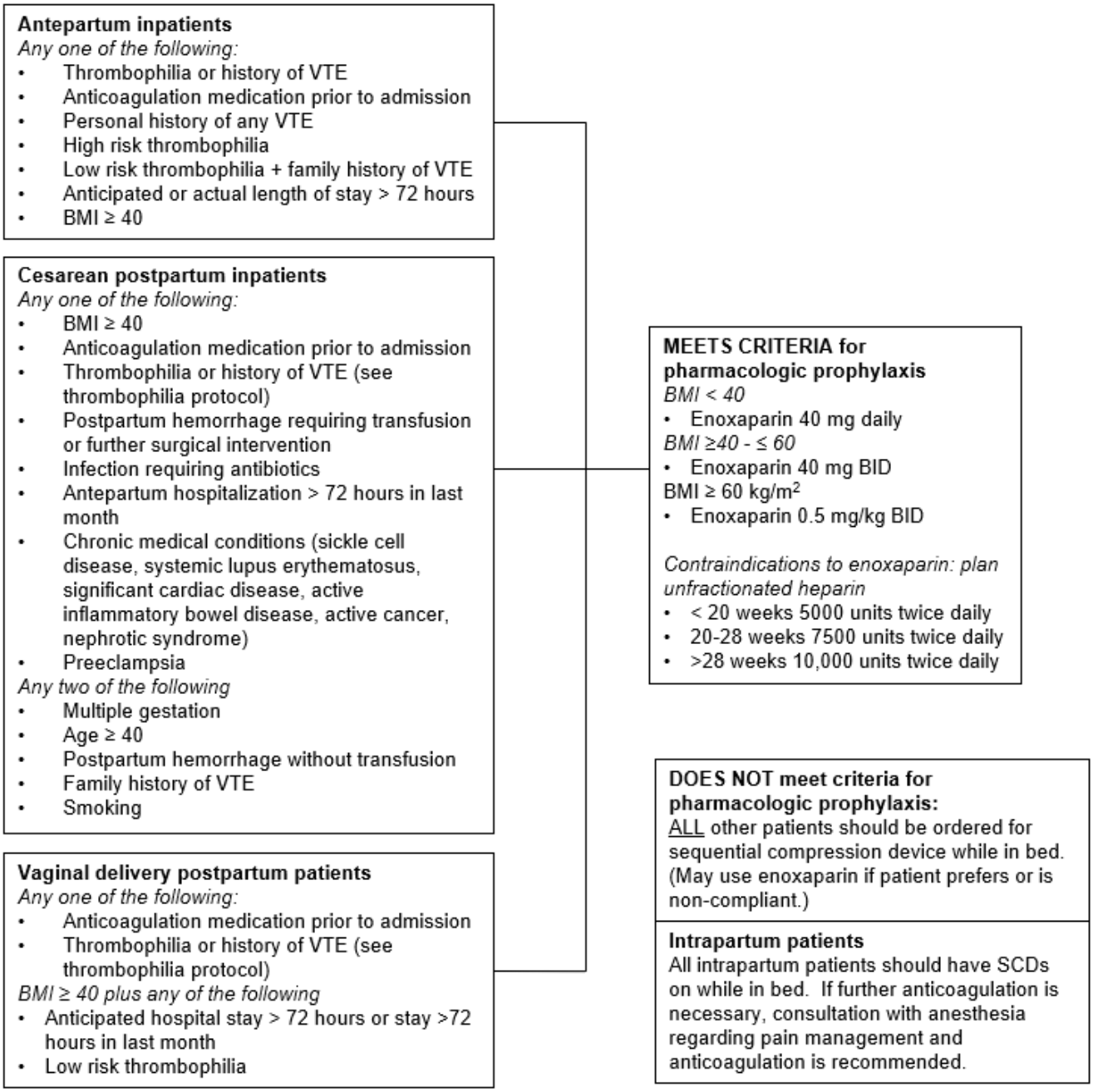

Figure 1. UC Obstetrics flow diagram for inpatient VTE prophylaxis

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