University Health System

ADULT VENOUS THROMBOEMBOLISM PROPHYLAXIS GUIDELINES

Patients will be screened for VTE risk according to the recommended risk assessments below:

- **Non-Surgical Adult Patients - Padua Scoring Tool (See Tables 1 and 2 below)**
- **Surgical Adult Patients - Low/Moderate/High categories (See Table 3, page 2)**
- **Postpartum Cesarean Section - Low vs High risk (See Tables 4 and 5, page 3)**

Table 1: Padua Scoring Tool (for non-surgical adult patients)

Risk Factors	Points
Active cancer [a]	3
Previous VTE (excluding superficial vein thrombosis)	3
Reduced mobility [b]	3
Known thrombophilic condition [c]	3
Recent (≤ 1 month) trauma and/or surgery	2
Elderly age (≥ 70 years)	1
Obesity (BMI ≥ 30 kg/m^2)	1
Heart and/or respiratory failure	1
Acute MI and/or ischemic stroke	1
Acute infection and/or rheumatologic disorder	1
Ongoing hormonal treatment	1

[a] Local or distant metastases, chemo or radiation in previous 6 months
[b] Bed rest with bathroom privileges for at least 3 days
[c] Defects of Antithrombin, Protein C or S, factor V Leiden, Antiphospholipid Syndrome

Table 2: Padua Score Risk Category and Prophylaxis Options

< 4 points = Low risk of VTE	≥ 4 points = High risk of VTE
No specific prophylaxis **Early and aggressive ambulation**	**Thromboprophylaxis is recommended for patients without contraindications** [a]
	Enoxaparin 40 mg once daily Enoxaparin 40 mg BID (BMI > 40 kg/m^2) UFH 5,000 units TID (or BID if < 50kg or > 75 years) Fondaparinux 2.5mg once daily[b] **<u>If CrCl < 30 ml/min</u>** UFH 5,000 units TID (or BID if < 50kg or > 75 years) Enoxaparin 30 mg once daily Warfarin (target INR 2-3)

[a] See Tables 4 and 5 for possible contraindications for pharmacologic and mechanical prophylaxis
[b] Use caution in CrCl < 50 mL/min, contraindicated in CrCl < 30 mL/min

Created by Anticoagulation Safety Committee: 10/2010
Reviewed: 11/2012, 07/2018, 03/2020
Approved by P&T: 10/2010, 06/2020

Table 3: Surgical Patient VTE Risk Category and Prophylaxis Options

Risk Category	Prophylaxis Options
Low Risk • Ambulatory patients with expected length of stay < 3 days • Same day/minor surgery patients	No specific prophylaxis Early and aggressive ambulation
Moderate Risk **(Patient presumed to be at Moderate risk unless Low or High risk criteria are met)** **Examples:** • Most general, open gynecologic or urologic surgery patients	Enoxaparin 40 mg once daily [a] Enoxaparin 40 mg BID (BMI > 40 kg/m^2) [a] UFH 5,000 units TID (or BID if < 50kg or > 75 years) [a] Fondaparinux 2.5 mg once daily [a] **<u>If CrCl < 30 ml/min</u>** UFH 5,000 units TID (or BID if < 50kg or >75 years) Enoxaparin 30mg once daily
Moderate VTE risk plus anticoagulation contraindication (see table 6)	**Mechanical prophylaxis** (add anticoagulant when no longer contraindicated)
High Risk • Hip, pelvic or severe lower extremity fractures • Lower extremity arthroplasty • Major trauma (lower extremity, head, fractures, face, chest abdomen) • Acute spinal cord injury • Paraplegia • Cancer related abdominal/pelvic surgery	Enoxaparin 30 mg BID [a] Enoxaparin 40 mg BID (BMI > 40 kg/m^2) [a] Fondaparinux 2.5 mg once daily [a, b] Warfarin (target INR 2-3) **<u>If CrCl < 30 ml/min</u>** UFH 5,000 units TID (or BID if < 50kg or > 75 years) [a] Enoxaparin 30mg once daily Warfarin (target INR 2-3) **<u>Extended Duration Prophylaxis:</u>** Major orthopedic surgery - extended prophylaxis up to 35 days is recommended Cancer related abdominal or pelvic surgery - extended prophylaxis with enoxaparin for 4 weeks recommended
High VTE risk plus anticoagulation contraindication (see table 6)	**Mechanical prophylaxis** (add anticoagulant when no longer contraindicated)

[a] Caution when epidural or spinal anesthesia or spinal puncture is employed. See "Regional Anesthesia Guidelines for Patients Receiving Antithrombotic Therapy" posted to the Clinical Pathways and Guidelines page.

[b] Use caution in CrCl < 50 mL/min, contraindicated in CrCl < 30 mL/min

Created by Anticoagulation Safety Committee: 10/2010
Reviewed: 11/2012, 07/2018, 03/2020
Approved by P&T: 10/2010, 06/2020

Table 4: OB Postpartum Cesarean Section VTE Risk Factors

Major Risk Factors	Minor Risk Factors
Immobility > 1 week; strict bed rest in antepartum period	BMI > 30 kg/m^2
Postpartum hemorrhage > 1 liter *with surgery*	Postpartum hemorrhage > 1 liter
Previous VTE	Emergency cesarean section
Preeclampsia with fetal growth restriction	Preeclampsia
Thrombophilia (Antithrombin deficiency, Factor V Leiden[a], Prothrombin G20210A)	Thrombophilia (Protein C or S deficiency)
Any of the following medical conditions: • **Systemic lupus erythematosus, Heart disease, or Sickle cell disease**	Fetal growth restriction
Blood transfusion	Multiple pregnancy
Postpartum infection	Smoking > 10 cigarettes/day

[a] Homozygous or heterozygous

Table 5: OB Postpartum Cesarean Section VTE Risk Category and Prophylaxis Options

Risk Category	Prophylaxis Options	Timing to Initiate
Low Risk No major risk factors **OR** < 2 minor risk factors	No specific prophylaxis Early ambulation	----
High Risk 1 major risk factor **OR** ≥ 2 minor risk factors	Enoxaparin 40mg once daily[a] Enoxaparin 40mg BID (BMI > 40 kg/m^2) [a] Enoxaparin 30mg once daily (CrCl < 30 mL/min)[a]	12 hrs without regional anesthesia, or 16 hrs with general anesthesia
	UFH 5,000 units BID[a]	12 hrs after c-section

[a] See table 6 for possible contraindications to pharmacologic prophylaxis

Table 6: Possible Contraindications for Pharmacologic Prophylaxis

- Surgery within 24 hrs
- Already receiving heparin, LMWH, or other anticoagulant
- Platelets < 50,000, coagulopathy (INR>1.5)
- Active hemorrhage from wounds, drains, or lesions
- Recent intraocular, intracranial or spinal surgery
- Multiple trauma with bleeding risk
- Suspected Intracranial Hemorrhage
- Bleeding risk – ex. End-stage liver disease, liver surgery, major abdominal surgery
- Comfort care
- Hypertensive crisis
- Hemophilia

Table 7: Possible Contraindications for SCDs

- Edema of the legs > 3+
- Pulmonary edema
- Allergy to compression cuff material
- Local condition which may be worsened by a compression sleeve
- Severe peripheral vascular disease or neuropathy

Created by Anticoagulation Safety Committee: 10/2010
Reviewed: 11/2012, 07/2018, 03/2020
Approved by P&T: 10/2010, 06/2020

References:

1. Kahn SR, Lim, Dunn AS, et al. Prevention of VTE in Nonsurgical Patients: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (9th Edition). Chest 2012;141:195S-226S.
2. Gould MK, Garcia DA, Wren SM, et al. Prevention of VTE in Nonorthopedic Surgical Patients: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (9th Edition). Chest 2012;141:227S-277S.
3. Falck-Ytter Y, Francis CW, Johanson NA, et al. Prevention of VTE in Orthopedic Surgery Patients: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (9th Edition). Chest 2012;141:278S-325S.
4. Nutescu EA, Spinler SA, Witttkowsky A, et al. Low Molecular Weight Heparins in Renal Impairment and Obesity: Available Evidence and Clinical Practice Recommendations Across Medical and Surgical Settings. Ann Pharmacother. 2009;43:1064-83.
5. Barbar S, Noventa F, Rossetto V, et al. A risk assessment model for the identification of hospitalized medical patients at risk for venous thromboembolism: the Padua Prediction Score. J Thromb Haemost.2010;8(11):2450-2457.
6. Bates SM, Greer IA, Middeldorp S, et al. VTE, Thrombophilia, Antithrombotic Therapy, and Pregnancy: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (9th Edition). Chest 2012;141:691S-727S.