Team Name: Critical Care and Medicine Team Lead: Director Acute Community Hospitals Approved by: Regional Lead - Acute Care & Chief Nursing Officer	Reference Number: CLI.4510.SG.001 Program Area: Across Hospital Units Policy Section: General
Issue Date: November 27, 2014 Review Date: Revision Date: June 21, 2023	Subject: Venous Thromboembolism (VTE) Prophylaxis Guideline

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STANDARD GUIDELINE SUBJECT:

Venous Thromboembolism (VTE) Prophylaxis Guideline

PURPOSE:

Venous thromboembolism (VTE) is one of the most common complications of hospitalization and the most common preventable cause of hospital death. Every hospitalized patient is assessed for VTE risk at the time of admission to hospital, at the time of a significant change in clinical status, at the time of transfer from one type of care to another and at discharge. Optimal, evidence-based thromboprophylaxis is provided to every hospitalized patient in whom it is indicated based on risk of thrombosis, risk of bleeding and available options.

DEFINITIONS:

Venous thromboembolism (VTE) - a thromboembolic event ("blood clot") that develops within the venous system and includes deep vein thrombosis and pulmonary embolism.

Deep venous thrombosis (DVT) - a thrombus occurring in one or more deep veins, especially in the legs, where it may produce leg swelling and/or pain.

Pulmonary embolism (PE) - a thrombus that arises in a deep vein and that embolizes to one or more of the pulmonary arteries where it may result in breathlessness, chest pain, hemoptysis, syncope or death.

Thromboprophylaxis (TP) - refers to the use of mechanical methods or anticoagulant medication to prevent VTE from developing in patients who are at risk.

Optimal TP - is defined by an appropriate:

- Modality for patient's risks of VTE and bleeding
- Dose (if an anticoagulant)
- Timing after admission, after surgery or after transfer within the institution
- Compliance
- Duration

Anticoagulant thromboprophylaxis - refers to the use of unfractionated Heparin (UFH), low molecular weight Heparin (LMWH), Heparanoid, Warfarin or direct thrombin inhibitor.

Mechanical thromboprophylaxis - refers to the use of mechanical methods to promote venous outflow from the legs, the most commonly used tool in mechanical thromboprophylaxis are antiembolic stockings (AES).

IMPORTANT POINTS TO CONSIDER:

- For prophylactic doses of Dalteparin, the dose is not altered in the presence of moderate renal dysfunction. For severe renal dysfunction (GFR less than 10mL/min) consultation with pharmacy is recommended.
- Avoid Rivaroxaban in patients on Warfarin, or patients who have renal dysfunction (CrCl 30-49mL/min – use with caution, CrCl less than 30mL/min – avoid use), hepatic dysfunction, or a continuous epidural.
- For patients less than 40kg, consultation with pharmacy is recommended.
- If platelets fall greater than or equal to 50% within 1 day of Heparin therapy or after day 5 of Heparin therapy, or if patient has had Heparin exposure in the past 30 days, consider work up of patient for Heparin-induced thrombocytopenia (HIT) and consultation with hematology is recommended.
- Patients that are pre- or post-partum with significantly reduced mobility are at risk for VTE. Consult with obstetrician/gynecologist recommended to guide anticoagulation decisions in this patient population

PROCEDURE:

1) At time of admission to hospital, significant change in clinical status, or transfer from one type of care to another, and at discharge, assess patients for VTE risk (refer to Risk Assessment & Venous Thromboembolism Prophylaxis Recommendations CLI.4510.SG.001.SD.01).
2) Before initiation of anticoagulant thromboprophylaxis (refer to CLI.4510.SG.001.SD.02), assess patient for risk of bleeding. Pharmacological prophylaxis is not offered to patients with any of the major risk factors for bleeding (Table 1) unless the risk of VTE outweighs the risk of bleeding.
3) For any patient in whom surgery is planned, or is likely to occur shortly after admission, it is recommended to consult with the surgeon regarding whether initiation of anticoagulant TP is warranted and which agent should be used.

Table 1: Major Risk Factor for Bleeding

Active bleeding	Concurrent use of anticoagulants (ex. Warfarin with INR greater than 2)
Acute stroke	Lumbar puncture/epidural/spinal anaesthesia within the next 12 hrs
Thrombocytopenia (platelets less than 75 x 10^9/L)	Lumbar puncture/epidural/spinal anaesthesia within the previous 4 hrs
Uncontrolled hypertension (230/120 mmHg or more)	Untreated inherited bleeding disorders (ex. haemophilia or vWillebrand's)
Acquired bleeding disorders (ex. acute liver failure)	History of HIT within last 3 months (for Heparin and LMWH) *

* Heparin Induced Thrombocytopenia (HIT) is an absolute contraindication if occurring in the last 3 months, but any history of HIT puts the patient at risk of recurrence.

4) For patients that are at greater than a Low Risk for VTE, and are not safe to receive anticoagulation thromboprophylaxis, consider mechanical prophylaxis with antiembolic stockings. Refer to Risk Assessment & Venous Thromboembolism Prophylaxis Recommendations (CLI.4510.SG.001.SD.01).

5) For patients identified as at risk for VTE: Provide and review with patient/essential care provider(s)/family the Clot Prevention (Venous Thromboembolism Prophylaxis) CLI.4510.SG.001.SG.02 teaching sheet.

6) Assess the complete blood count (CBC) before initiating anticoagulant TP, and then if patient is on unfractionated Heparin or Dalteparin, reassess platelets every 2-3 days for up to 14 days (or until UFH is stopped, whichever occurs first). If there is no evidence of HIT by 14 days and the patient remains on thromboprophylaxis, reduce to weekly checks.

7) Discontinue anticoagulation thromboprophylaxis when the patient can be reclassified as Low Risk.

8) Assess patients undergoing major orthopedic surgery (including hip or knee replacements or hip fracture surgery) for post-discharge prophylaxis. Provide patient with prophylaxis as part of Discharge Medication Plan & Prescription.

SUPPORTING DOCUMENTS:

CLI.4510.SG.001.SD.01	Risk Assessment & Venous Thromboembolism Prophylaxis Recommendation
CLI.4510.SG.001.SD.02	Clot Prevention (Venous Thromboembolism Prophylaxis)
CLI.6010.PL.009	Medication Reconciliation Policy
CLI.6010.PL.009.FORM.01	Best Possible Medication History (BPMH) and Admission Reconciliation & Order Form
CLI.6010.PL.009.FORM.02	Discharge Medication Plan

REFERENCES:

Accreditation Canada Required Organizational Practice Venous Thromboembolism (VTE) Prophylaxis

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