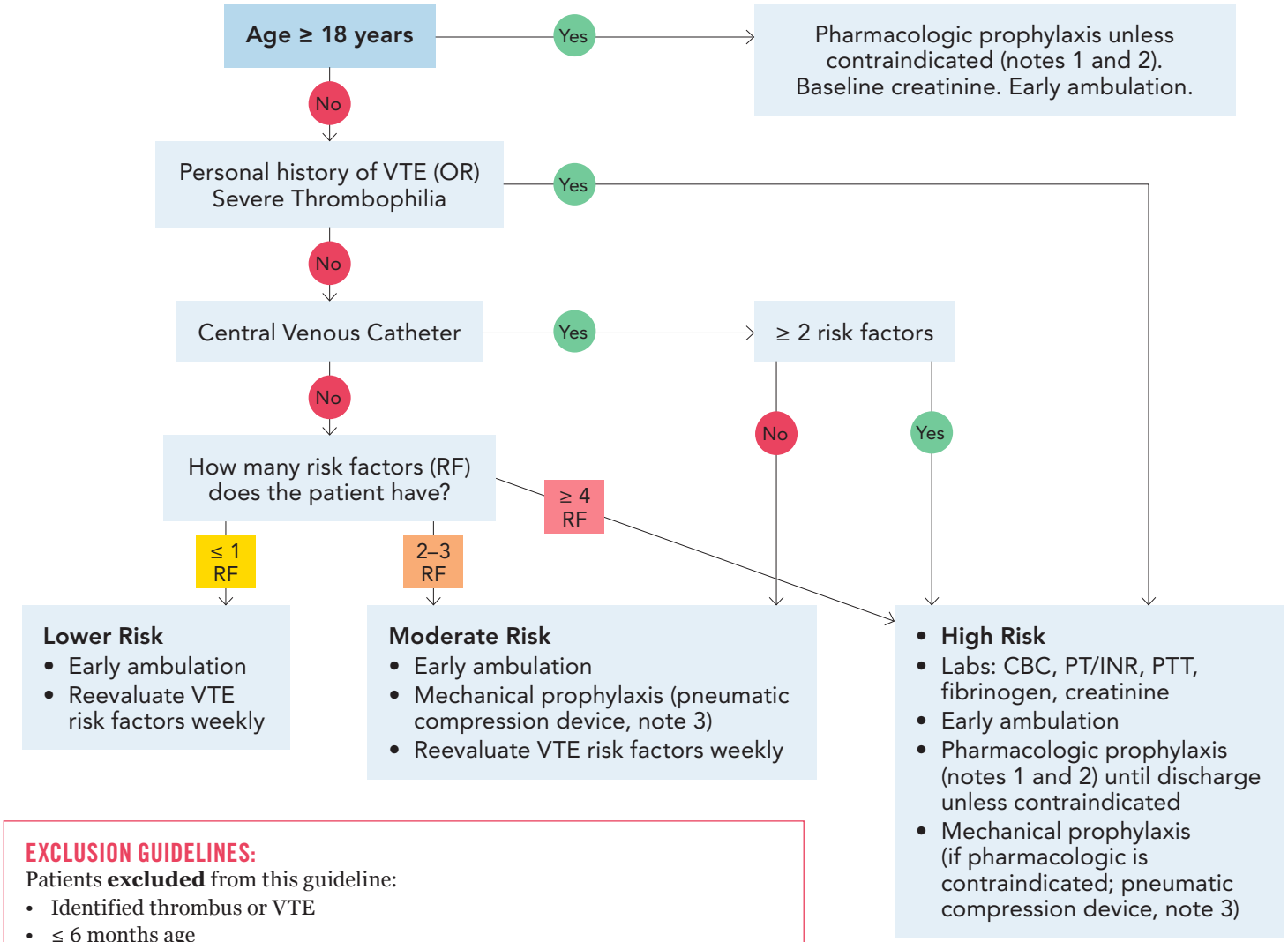
CLINICAL GUIDELINE | VENOUS THROMBOEMBOLISM (VTE) RISK STRATIFICATION IN HOSPITALIZED PATIENTS

(AGE > 6 MONTHS)

Children's MINNESOTA

Aim: To standardize risk screening and prophylaxis for VTE in hospitalized patients.



EXCLUSION GUIDELINES:

Patients **excluded** from this guideline:

- Identified thrombus or VTE
- ≤ 6 months age
- NICU patients (young infants are also at risk for VTE, however this was out of scope for guideline due to lack of studies on pharmacologic interventions).
- Mental health or disordered eating (e.g. CTED program) related admissions
- COVID-19 admissions (see separate guideline)
- Trauma admissions/consultations (see separate guideline)

Risk Factors (RF)

1st degree relative with VTE
Asparaginase within 30 days
Autoimmune disease
Brain Injury
Burn
Cardiac disease (involving dilated cardiomyopathy, atrial fibrillation, single ventricle pathology, or palliative surgical shunts)
DKA
Estrogen-containing medications
Glasgow Coma Score < 8
Immobility > 3 days
Infection (severe and active)
Inflammatory disease
Inotropes/Vasopressors, current
Malignancy, active
Mechanical ventilation/intubation
Nephrotic syndrome
Obesity (BMI > 30 or > 95th percentile)
Ortho surgery involving immobility
Smoker
Spinal cord injury (< 6 weeks from injury)
Stroke, personal history of
Surgery, major and within 2 weeks
Thrombophilia, confirmed
TPN for more than 2 weeks
Trauma, major

Severe Thrombophilia

Antiphospholipid Antibody Syndrome
Antithrombin deficiency
Homozygous Factor V Leiden
Homozygous Prothrombin mutation
Protein C deficiency
Protein S deficiency

VENOUS THROMBOEMBOLISM (VTE) RISK STRATIFICATION IN HOSPITALIZED PATIENTS

(AGE > 6 MONTHS)

Children's MINNESOTA

Aim: To standardize risk screening and prophylaxis for VTE in hospitalized patients.

NOTE 1

Pharmacologic prophylaxis options:

LMWH-enoxaparin, or unfractionated heparin, see hospital policy 322.

- < 60 kg: Enoxaparin 0.5 mg/kg/dose subQ BID. Pharmacy to monitor and titrate.
- ≥ 60 kg, non-obese, no renal dysfunction: Enoxaparin 40 mg subQ Qday. No levels
- ≥ 60 kg, obese or renal dysfunction: Enoxaparin 30 mg subQ BID, Pharmacy to monitor and titrate.
- If BMI > 40, enoxaparin 40 mg subQ BID, Pharmacy to monitor and titrate

- Avoid LMWH-enoxaparin if creatinine clearance < 30, consider unfractionated heparin.
- If patients previously on aspirin, recommend discussing the addition or substitution of pharmacologic ppx with prescribing service
- Currently insufficient evidence to recommend routine use of direct oral anticoagulants (DOAC) in pediatrics

NOTE 2

Contraindications to Pharmacologic VTE Prophylaxis

Discuss thromboprophylaxis with any involved surgical services.

Absolute contraindications:

Active hemorrhage

Diagnosed bleeding disorder, known or tendency

Thrombocytopenia (platelets < 25 k)

Neurosurgery, TBI, or major solid organ injury in last 72 hr

Recent intracranial hemorrhage or acute stroke

Thrombolytic therapy within last 24 hr

Epidural or paraspinal hematoma

Epidural catheter in place (may use unfractionated heparin)

Lumbar puncture or epidural catheter removed in last 6 hr

Significant uncorrected coagulopathy (e.g. INR > 2, or fibrinogen < 100, or PTT > 40): *Consult hematology in this scenario*

Heparin-induced thrombocytopenia, or other hypersensitivity to heparin or LMWH-enoxaparin

Relative contraindications:

For LMWH-enoxaparin, renal dysfunction (may need dose adjustment)

Significant uncontrolled hypertension with blood pressure > 99th percentile

Pelvic fracture in last 24–48 hr

Intracranial/spinal lesion at high risk of bleed

Anti-platelet therapy (discuss management with primary service, e.g. cardiology)

*For invasive procedures: hold heparin x 6 hours, hold LMWH-enoxaparin x 12–24 hours

NOTE 3

Contraindications to mechanical prophylaxis:

Affected extremity has acute fracture, vascular access line under location of compression device, or skin/other condition (dermatitis, burn, tumor), OR unable to achieve correct fit due to patient size (generally age < 5 yr), OR lower extremity peripheral arterial insufficiency.

NOTE 4

Monitor for signs and symptoms of bleeding if on pharmacologic prophylaxis

Oozing at sites (IV, surgical wounds, etc.)

Gross hematuria

Severe epistaxis (requiring intervention)

Bleeding causing a drop in hgb by 2 g/dL

Lower GI bleeding (black tarry stools, frank blood)

Upper GI bleeding (hemoptysis)

Ecchymosis or petechiae

VTE prophylaxis workgroup: Garland, Hester, Huntley, MacIver, Deisz, Orioles, Lawson, Lissick, Weyandt, C. Johnson, Reed, Lasege, Ries, Morhack, Schwarze, Olthoff, Zeirke