DEEP VENOUS THROMBOSIS:
TREATMENT & MANAGEMENT

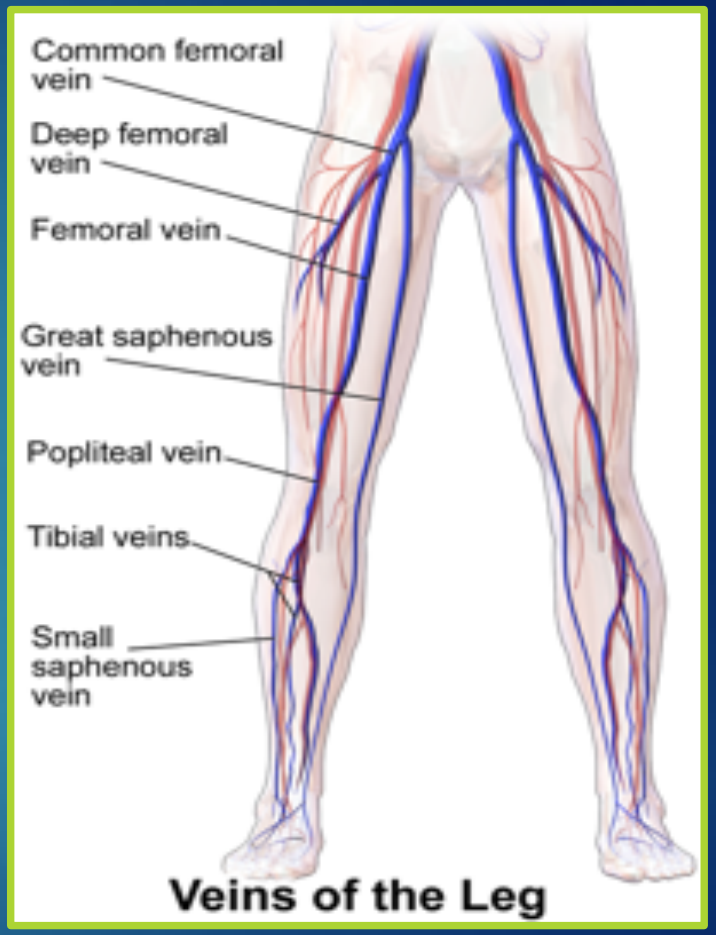
FM FLAME: 95
HABEL & ERLANDSON 11.22.20
SWEDISH FAMILY MEDICINE RESIDENCY

LEARNING OBJECTIVES

- To understand the approach to DVT given the provoking factors, clot location, treatment options, and duration of therapy.
- Prerequisites:
  - NONE
- See also – for closely related topics
  - FM FLAME 93: Deep Vein Thrombosis: Risk Factors and Pathogenesis
  - FM FLAME 94: Deep Vein Thrombosis: Presentation and Diagnosis
  - FM FLAME 96: Deep Vein Thrombosis Complications: Pulmonary Embolism

DVT TREATMENT: DEPENDS ON LOCATION

- Proximal: Popliteal, femoral, and iliac veins **GET TREATED** if no contraindications exist
- Distal: Other veins of the calf that do not involve the popliteal vein
  - Can be observed instead of treated w/ meds: weekly ultrasounds for 2 weeks to observe for clot extension or resolution
  - Can be treated: if symptomatic, or found to be extending on surveillance ultrasound
  - If stable, can continue surveillance w/ above ultrasound method
    - (order proximal leg U/S rather than full as one is only looking for extension into popliteal veins after initial diagnosis)



Blausen.com staff (2014). "Medical gallery of Blausen Medical 2014". *WikiJournal of Medicine* **1** (2). DOI:10.15347/wjm/2014.010 . ISSN 2002-4436

CHOOSING WHETHER TO ADMIT TO HOSPITAL

- Outpatient therapy can be considered when patients have **ALL** of the following features:
  - Hemodynamically stable
  - A low risk of bleeding
  - No renal insufficiency
  - A practical system in place at home for the administration and surveillance of anticoagulant therapy (ex. good living conditions, caregiver support, phone access, understanding and ability to return to the hospital should deterioration occur)

CHOOSING WHETHER TO ADMIT TO HOSPITAL

- Outpatient therapy is **NOT** appropriate in patients with:
  - Massive DVT (ex. iliofemoral DVT, phlegmasia cerulea dolens)
  - Concurrent symptomatic pulmonary embolism (PE)
  - High risk of bleeding on anticoagulant therapy
  - Comorbid conditions or other factors that warrant in-hospital care
  - Pregnancy
  - Family history or personal history of inherited bleeding disorder

TREATMENT

- Early ambulation is encouraged
- **Anticoagulation**
  - LMWH (low molecular weight heparin)
  - Fondaparinux
  - Rivaroxaban or Apixaban oral Monotherapy
  - Warfarin
- Graduated Compression stockings (30-40mmHg)
  - Start these after coagulation is started (if before, they could provoke embolization)
  - Within 2 wks of dx and continue for 2 yrs to prevent post phlebitis syndrome
  - Patients at risk of poor compliance due to discomfort and inconvenience

CHOOSING WHETHER TO ANTICOAGULATE

- Absolute Contraindications
  - Recent Surgery w/ high risk of bleed
  - Hemorrhagic Stroke
  - Active Bleeding
  - Major Trauma
  - Thrombocytopenia <50k
- In these cases, an IVC filter may be more appropriate, consult surgeon for shared decision w/ patient

- Relative Contraindications
  - Recurrent bleeding via GI telangiectasias
  - Intracranial or spinal tumors
  - Large AAA w/ concurrent severe hypertension
  - Stable aortic dissection
  - Recent, planned, or emergent low bleeding-risk surgery/procedure
- As with all patient care, these involve shared decision making

TREATMENT DURATION DEPENDS ON RISK FACTORS

- Tx should involve shared decision making with patients as often there is no recommended ***optimum*** timeframe
- 3-12 months of anticoagulation for provoked thrombus
  - Risk Factors that define a provoked event:
    - Surgery, hospitalization, immobility ≥3 days, pregnancy, or estrogen therapy
  - Minimum of 3 months recommended. Consider 6-12 months for:
    - Persistent risk factor or unresolved provoking event
    - Complications such as phlegmasia cerulea dolens

TREATMENT DURATION DEPENDS ON RISK FACTORS

- Indefinite Anticoagulation Considerations:
  - No identifiable cause of DVT, recurrent DVT, or provoked DVT w multiple persistent risk factors (FHx or frequent travel that causes long periods of immobility)
- Evaluate ANNUALLY w/ a risk-benefit discussion
  - Risk of recurrence vs. HAS-BLED score to consider whether the risk of non-treatment/prophylaxis is greater than the risk of the patient having a bleeding event
  - Contraindications for anticoagulation that have begun in the previous 12 months

PHARMACOLOGIC OPTIONS

- Warfarin (vitamin K antagonist)
  - More affordable than heparin and most oral anticoagulants
    - Depending on insurance coverage
  - More patient contact hours to check INR (goal 2-3) for titration
  - Pt must have special diet
    - i.e. stable intake of Vitamin K rich foods
  - Contraindicated in pregnancy due to teratogenicity

PHARMACOLOGIC OPTIONS

- Heparin (LMWH) or Fondaparinux (factor Xa inhibitor)
  - Injectable medication, less convenient and tolerable overall
  - Expensive
  - Often used as a bridge to Warfarin to maximally anticoagulate rapidly while warfarin titration is being conducted
  - Favored for DVTs associated with malignancy due to increased risk of thrombosis and bleeding

PHARMACOLOGIC OPTIONS

- Rivaroxaban and Apixaban (Factor Xa Inhibitors)
- Most common complication is **bleeding**; use w/ caution in elderly, post-bariatric surgery, and hepatic-impaired populations
- Renal dosing appropriate for lower creatinine clearance
- Not for use in pregnancy; not contraindicated in breastfeeding, but discussion warranted
- Do not use in patients w/ anti-phospholipid antibody syndrome with all 3 positive traits, instead use warfarin
- Apixaban has less risk of major bleeding, esp in elderly

PHARMACOLOGIC OPTIONS

- Dabigatran (Direct Thrombin Inhibitors)
- Used for patients who have been treated with a parenteral anticoagulant for 5 to 10 days vs. rivaroxaban and apixaban that may be used initially
- Most common complication is **bleeding**
- Use with caution in elderly, post-bariatric surgery, hepatic and renal function compromised populations
- Not for use in pregnancy; not contraindicated in breastfeeding, but discussion warranted
- Do not use in patients with anti-phospholipid antibody syndrome w/ all 3 positive traits, instead use warfarin

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