Outpatient Management of Deep Vein Thrombosis: How to Make Care Easier

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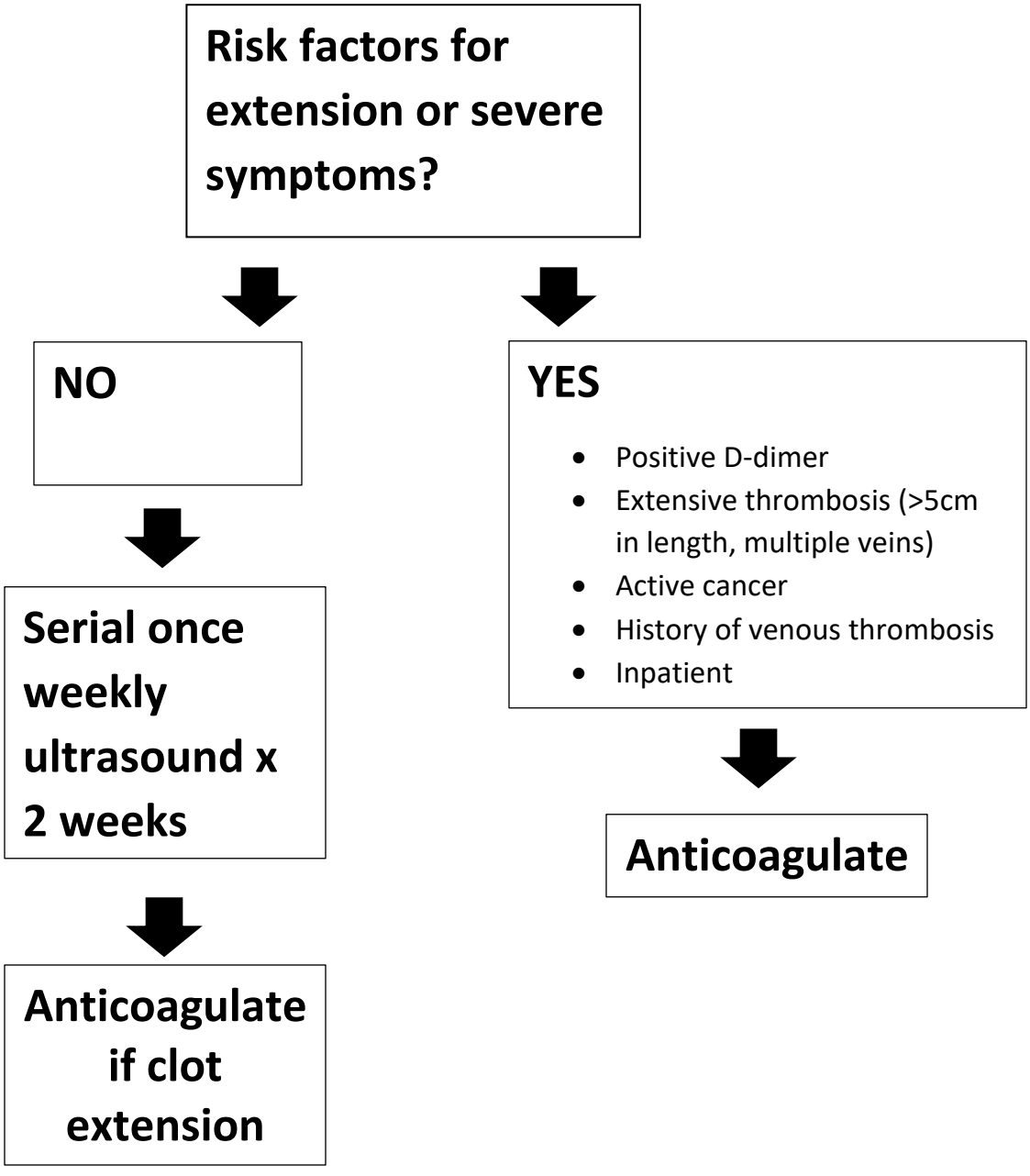
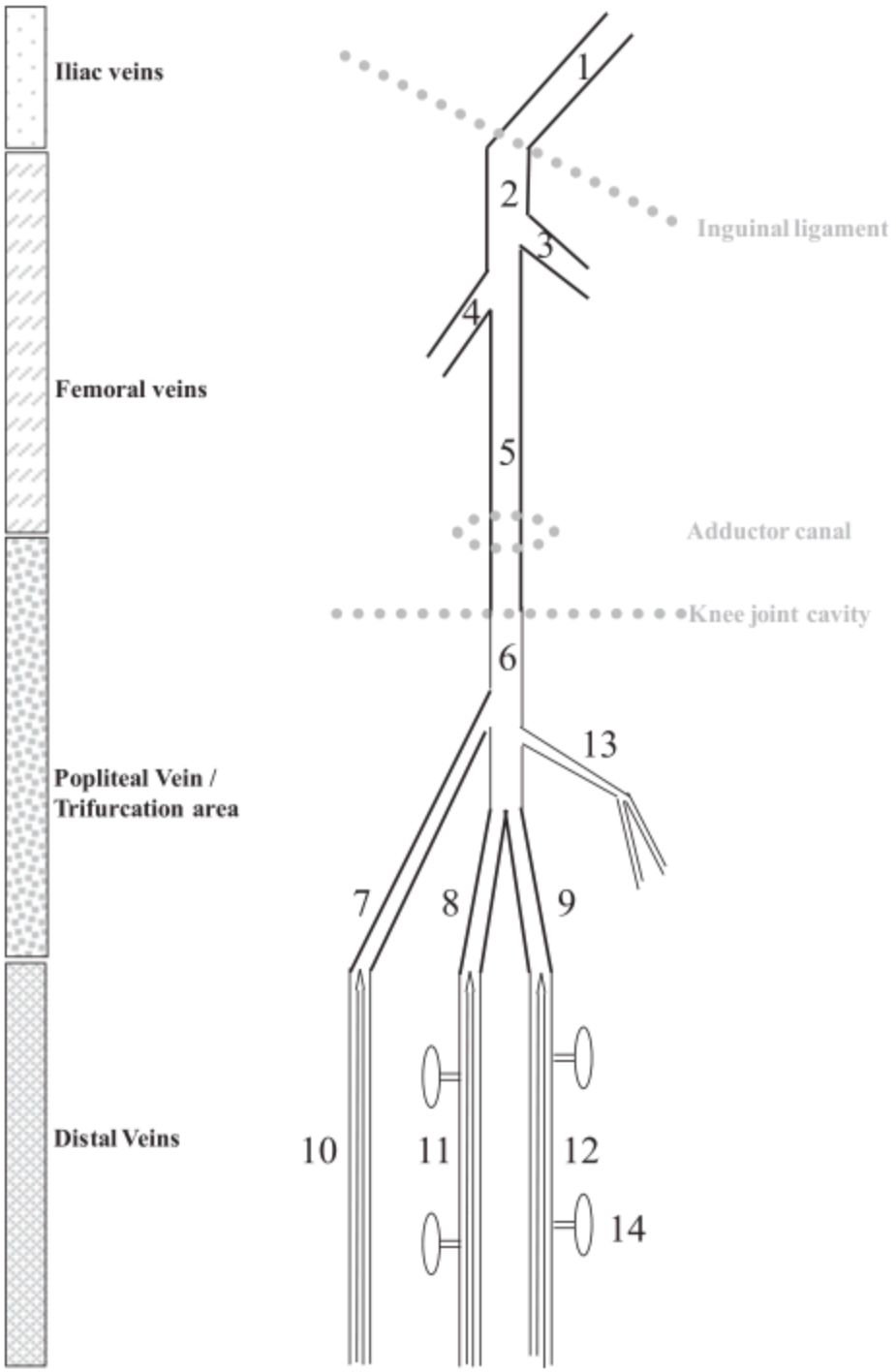
1. Isolated Distal Deep Vein DVT
   - Include veins below the knee: tibial, peroneal, gastrocnemius, and soleus muscle veins.
   - 23-59% of patients with DVT
   - Risks: proximal extension (8-15% of untreated), pulmonary embolism, recurrent venous thromboembolic disease, post-thrombotic syndrome.

How to manage once diagnosed?
(*CHEST 2016 Antithrombotic Therapy Guidelines*)





Schematic representation of leg veins

1, External iliac vein; 2, common femoral vein; 3, greater saphenous vein; 4, profound femoral vein; 5, (superficial) femoral vein; 6, popliteal vein; 7, anterior tibial confluent segment; 8, posterior tibial confluent segment; 9, peroneal confluent segment; 10, anterior tibial veins; 11, posterior tibial veins; 12, peroneal veins; 13, gastrocnemius muscle veins (medial head); 14, soleus muscle veins.

(*Palareti, G et al. Blood 2014*)

2. Choice of anticoagulant

Factor	***Preferred anticoagulant***
Renal disease with decreased creatinine clearance (CrCl <30)	Vitamin K antagonist
History of GI bleed	Vitamin K antagonist
Antiphospholipid antibody syndrome	Vitamin K antagonist
Poor compliance	Vitamin K antagonist
Weight Extremes (BMI >40 or <20 or weight > 120 Kg)	Vitamin K antagonist
Preference for reversal agent	Dabigatran, vitamin K antagonist
Once daily dosing	Rivaroxaban, vitamin K antagonist
Pregnancy	Low molecular weight heparin
Liver disease and coagulopathy	Low molecular weight heparin
Cancer associated thrombosis	Low molecular weight heparin

- In acute management of DVT, vitamin K antagonists need to be overlapped with an initial period of therapeutically dosed low molecular weight heparin (or unfractionated heparin in severe renal failure) for a minimum of 5 days and stopped when INR is therapeutic.
- Use of dabigatran requires an initial period of treatment with therapeutically dosed low molecular weight heparin.
- Rivaroxaban is dosed 15mg po BID for the first 3 weeks before reduction to 20mg po Daily.

3. Thrombophilia Screening

- Does not influence decision making regarding duration of anticoagulation. Key factor is provoked versus idiopathic venous thromboembolic disease.
- Should not be tested at time of initial DVT, as results can be influenced by anticoagulation, acute thrombosis, pregnancy, etc.
- Of limited value in patient with strongly provoking factors e.g. cancer, surgery, immobility, hospitalization.
- If patient wishes to pursue testing, rationale for testing should be discussed (can refer to specialist for detailed evaluation) e.g. risk to female family members planning to initiate estrogen based oral contraception or pregnancy in setting of a strong family history for venous thromboembolic disease.

4. Cancer Screening

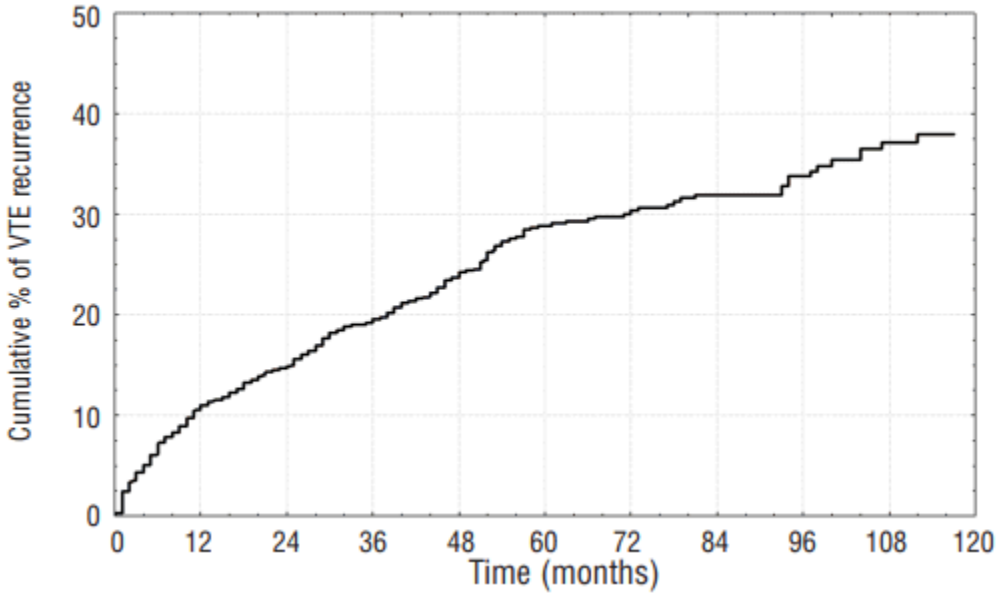
- Up to 10% of patients with idiopathic venous thromboembolic disease are diagnosed with cancer within a year.
- Limited evaluation: history, physical (including pelvic exam in females, prostate examination in age > 40 and testicular exam in males), chest X-ray, and age appropriate malignancy screening based on current guidelines.
- More extensive screening, including CT imaging has not been shown to improve survival.

5. Duration of Anticoagulation

- Need to consider bleeding risk in decision making – standard scoring systems may not be reflective of true risk or limited to vitamin K antagonists e.g. HASBLED.

Factors that increase risk for bleeding	
Age > 65	Antiplatelet therapy
Renal failure	Alcohol abuse
Liver failure	NSAID use
Thrombocytopenia	Diabetes
Cancer/Metastatic cancer	Prior stroke
Reduced functional capacity	Frequent falls

- For all patients appropriate for anticoagulation, minimum 3 months.
- In patients with provoked DVT in setting of surgery, immobility or hospitalization, complete 3 months of anticoagulation and then this can be discontinued.



(*Prandoni, P. et al. Haematologica 2007*)

- In patients with idiopathic DVT has benefit from long term anticoagulation beyond initial period, but needs to be balanced against patient preferences and bleeding risk.
- Repeating Doppler ultrasound of affected leg at end of 3 month period can establish presence of chronic thrombus, allowing for comparison if recurrent leg symptoms.

6. Transitioning between anticoagulation agents

From a vitamin K antagonist to:	
Dabigatran	Start when INR is less than 2
Rivaroxaban	Start when INR is less than 3
Apixaban	Start when INR is less than 2

From a direct oral anticoagulant to a vitamin K antagonist	
Dabigatran	Overlap with initiation of VKA depending on renal function, continued until: • Creatinine clearance 50 or higher – 3 days of overlap • Creatinine clearance 30-50 – 2 days of overlap • Creatinine clearance 15-30 – 1 day of overlap
Rivaroxaban	Need to bridge with low molecular weight heparin with concomitant warfarin starting at the time when next dose of rivaroxaban would have been given.
Apixaban	Need to bridge with low molecular weight heparin with concomitant warfarin starting at the time when next dose of rivaroxaban would have been given.

7. Periprocedural Management

- Need to consider both bleeding risk of procedure and current anticoagulant.
- Interruption in anticoagulation may not be required for low bleeding risk procedures such as skin biopsy, dental extractions, and endodontal procedures. Tranexamic acid mouthwash can be used to reduce risk of post-procedural bleeding.
- May be appropriate to using bridging anticoagulation in high risk patients (e.g. DVT within last 3 months of procedure, high risk thrombophilias such as protein S

or C deficiency) on warfarin to reduce duration off anticoagulation and reduce risk of thrombosis.

- Bridging anticoagulation not generally require for direct oral anticoagulants, unless high risk of thrombosis and inability to resume oral medications. Timing of discontinuation depends on renal function.

8. Post-thrombotic Syndrome

- 20-50% of patients following deep vein thrombosis due to venous valve damage and venous hypertension, severe in 5-10% of cases.
- Not prevented by routine use of compression stockings
- Heaviness, swelling, pruritus, edema, ulcer, hyperpigmentation.
- Symptomatic management: graduated compression stockings 35 mmHg at ankle and 25 mmgHg at mid-calf used in the daytime, and removed overnight. Contraindicated in patients with claudication.

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