Anticoagulation in Venous Thromboembolism (v1.3)

For information and treatment plans, visit www.anticoagulationtoolkit.org

Anticoagulation is recommended for most cases of VTE unless there is a strong contraindication. Two types of VTE may not require anticoagulation if certain conditions are met (see table below).

### Determining Need for Anticoag.

<table>
<thead>
<tr>
<th>Type/Location</th>
<th>Risk factors</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute isolated distal DVT of leg without severe symptoms or risk factors for extension*</td>
<td>Risk factors for extension: positive D-dimer, thrombus is extensive, thrombus is close to proximal veins, no reversible provoking risk factor, active cancer, h/o VTE, or inapt status</td>
<td>No anticoagulation; Serial imaging in 2 weeks</td>
</tr>
<tr>
<td>Subsegmental PE without proximal DVT or risk factors for recurrence*</td>
<td>Risk factors for VTE recurrence: hospitalized/immobile patients, active cancer, no reversible provoking risk factor</td>
<td>No anticoagulation; Clinical surveillance</td>
</tr>
</tbody>
</table>

### Guidelines support home initial treatment for some types of VTE as long as certain conditions are met.

#### Setting of Treatment

<table>
<thead>
<tr>
<th>Type/Location</th>
<th>Clinical criteria for initial treatment in home</th>
<th>Home environment criteria for initial treatment in home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-risk PE</td>
<td>Clinically stable with good cardiopulmonary reserve, including age ≤50, no hx of CA or chronic cardiopulmonary disease, HR ≤100, SBP ≥100 mm Hg, and O2 saturation ≥90%</td>
<td>Well-maintained living conditions, Strong support network, Ready access to medical care, Expected to be compliant, Access to phone</td>
</tr>
<tr>
<td>Acute DVT of leg</td>
<td>No severe pain or important comorbidities</td>
<td></td>
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</tbody>
</table>

#### Choice of Anticoagulant

<table>
<thead>
<tr>
<th>Anticoagulant</th>
<th>Dosing information (see package insert for full prescribing information)</th>
<th>Pros/Cons</th>
<th>Initial assessment/monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apixaban (Eliquis®)</td>
<td>10 mg BID X 7 days then 5 mg BID</td>
<td>Only DOAC to have less GI bleeding than warfarin in clinical trials, Twice daily dosing</td>
<td>Renal function, liver function, and CBC before initiation and at least yearly</td>
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<tr>
<td>Dabigatran (Pradaxa®)</td>
<td>150 mg BID (if CrCl 30-50 mL/min) after 5-10 days of parenteral tx</td>
<td>Reversal agent is available, Dyspepsia is common side-effect, Must stay in original packaging, Twice daily dosing</td>
<td>Renal function, liver function, and CBC before initiation and at least yearly</td>
</tr>
<tr>
<td>Edoxaban (Savaysa®)</td>
<td>60 mg daily after 5-10 days of parenteral tx</td>
<td>Once daily dosing</td>
<td>Renal function, liver function, and CBC before initiation and at least yearly</td>
</tr>
<tr>
<td>Rivaroxaban (Xarelto®)</td>
<td>15 mg BID X 21 days then 20 mg daily</td>
<td>Should be taken with food, Twice daily dosing initially, Once daily maintenance dosing</td>
<td>Renal function, liver function, and CBC before initiation and at least yearly</td>
</tr>
<tr>
<td>Warfarin (Coumadin®)</td>
<td>Initial dose: 5mg is a typical starting dose, but a lower dose may be considered in certain patients (eg. elderly, malnourished, liver disease), Subsequent dosing based on INR with target range 2-3</td>
<td>Can be used in patients with severe renal disease (CrCl &lt;30 mL/min), Requires frequent monitoring, Strong food and drug interactions, Less expensive than the DOACs</td>
<td>Baseline: INR and CBC, INR 3 days after initiation and approx. 7 days after dose changes, INRs can be gradually spaced out to monthly if stable</td>
</tr>
<tr>
<td>LMWH</td>
<td>Enoxaparin: 1 mg/kg SC 12h (if CrCl≥30), 1 mg/kg SQ daily (if CrCl&lt;30), Dalteparin (only FDA approved for VTE treatment in CA): 200 IU/kg SC daily in certain patients (eg. elderly, malnourished, liver disease), Initial dose: 5mg is a typical starting dose, but a lower dose may be considered in certain patients (eg. elderly, malnourished, liver disease), Subsequent dosing based on INR with target range 2-3</td>
<td>Drug of choice in pregnancy</td>
<td>Baseline: CBC, creatinine</td>
</tr>
</tbody>
</table>

### Anticoagulation in Venous Thromboembolism

- DOACs (dabigatran, rivaroxaban, apixaban, edoxaban) are recommended over warfarin for DVT of the leg or PE. However, DOACs are contraindicated in pts with severe renal insufficiency (CrCl <30 mL/min), mechanical heart valves, mod/sea hepatic dysfunction, and preg/nurs.
- LMWH is recommended for the leg or PE in pregnancy. Edox. or riva. are now suggested over LMWH in CA-associated VTE pts with low bleed risk.*
- DOACs are dosed by weight, with considerations for renal and hepatic function.
- LMWH is dosed by formula and adjusted based on renal function.
- Concurrent use of anticoagulants with strong dual inducers of CYP3A4 and PGP (eg. rifampin) is contraindicated.
- Dual antiplatelet therapy (including P2Y12 inhibitors) is contraindicated when DOACs are being used.
- Intrahepatic cholestasis of pregnancy is a contraindication for LMWH.
- Patients with mechanical heart valves should not be prescribed DOACs.
- DOACs are contraindicated in pts with severe hepatic disease (Child-Pugh class B/C).

### Long-term management

- Individualize treatment variables based on risk factors (eg. age, concomitant medications, medical history).
- Periodically reevaluate treatment goals and revise treatment plan as needed.
- Consider switching to or from anticoagulants based on patient preferences and treatment goals.

### Non-pharmacological Management

- Physical activity, compression, and heparin prophylaxis are important components of VTE prevention.
- Patients should wear compression stockings and participate in physical therapy.
- Smoking cessation, weight loss, and exercise are recommended.
- Avoidance of alcohol and controlled medication use is important.

### Patient Education

- Inform patients about the risks and benefits of anticoagulation.
- Educate patients about potential side effects and how to manage them.
- Teach patients how to monitor their INR and other laboratory values.
- Provide information about dose adjustments and medication changes.
- Encourage patients to be proactive in their management of VTE.

### For more information, visit www.anticoagulationtoolkit.org

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*IS Thistle guidance: In high bleed risk (GI cancer or mucosal abnormalities, GU cancers), LMWH is suggested. ** Use Cockcroft-Gault with actual weight for CrCl.
References


Drug package inserts

- Apixaban: https://packageinserts.bms.com/pi/pi_eliquis.pdf
- Dabigatran: http://docs.boehringer-ingelheim.com/Prescribing%20Information/PIs/Pradaxa/Pradaxa.pdf
- Edoxaban: http://dsi.com/prescribing-information-portlet/getPIContent?productName=Savaysa&inline=true
- Enoxaparin: http://products.sanofi.us/lovenox/lovenox.html

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