How Long to Anticoagulate after DVT: Duplex Imaging to Guide Treatment Duration (?)

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How Long to Anticoagulate After Unprovoked DVT

Recurrent venous thromboembolism after discontinuing anticoagulation in acute proximal DVT or PE

Grade of Recommendation

<table>
<thead>
<tr>
<th>Condition</th>
<th>Grade of Recommendation</th>
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<tbody>
<tr>
<td>Proximal DVT provoked by surgery, recommend 3 months AC</td>
<td>1B</td>
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<tr>
<td>Proximal DVT provoked by non-surgical transient risk factor, recommend 3 months AC</td>
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<tr>
<td>Unprovoked DVT (distal or proximal), recommend &gt; 3 months AC over shorter period. After 3 months, evaluate risk-benefit of extended therapy.</td>
<td>1B</td>
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Recurrent venous thromboembolism in acute proximal DVT or PE

Cumulative incidence of recurrent thromboembolism with idiopathic and secondary VTE

Prandoni, Haematologica 2007

How Long to Anticoagulate After Unprovoked DVT

Bleeding

- Patient age
- Active cancer
- History of prior GI bleed
- Stroke
- Recent MI
- Anemia
- Chronic renal disease
- Liver dysfunction
- Thrombocytopenia

Recurrent Thrombosis

- Acute VTE
- Patient age
- BMI
- D-dimer
- Male gender
- Leg pain
- Active cancer
- APA Syndrome
- AT/ Prot C/ Prot S deficiency
- Hyperhomocysteinemia
- Residual venous obstruction (RVO) ?

Heit, Am J Hematol 2012

Disclosures

Timothy K. Liem
Co-founder and Chief Medical Officer
Qview Health, Inc.
Consultant
C. R. Bard, Inc.
Residual venous obstruction, alone and in combination with D-dimer, as a risk factor for recurrence after anticoagulation withdrawal following a first idiopathic deep vein thrombosis in the Prosing Study

- D-dimer 1 mos after AC withdrawal
- RVO measured at time of AC withdrawal

Cosmi, Eur J Vasc Endovasc Surg 2010

Residual vein obstruction as a predictor for recurrent thromboembolic events after a first unprovoked episode: data from the REVERSE cohort study

- 452 pts 1st unprovoked VTE + 5-7 mos anticoagulation
- VKA discontinued for all groups
- Pts followed every 6 mos

Le Gal, J Thromb Haemost 2011

Duplex imaging of residual venous obstruction to guide duration of therapy for lower extremity deep venous thrombosis

- Systematic review of studies evaluating recurrent VTE based on RVO (+) vs RVO (-) status

MEDLINE
Cochrane Central Register of Controlled Trials
Cochrane Database of Systematic Reviews
Database of Abstracts of Reviews of Effects

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Duplex Criteria for Residual Venous Obstruction Vary

- Vein diameter measured during maximal compression
  - Recanalized: D < 2 mm single meas
  - Residual Thromb: D < 3 mm multi meas

- Min wall thickening (< 2.5%) Partial resolution (< 40% max diam)
- Min resolution (< 50% max diam) No resolution Worsening thrombus

Vein diameter measured during maximal compression

Cosmi 2010

Stephenson, JVS Venous and Lymph Dis 2014

Clinical Prediction Scores for Recurrent VTE

- Systematic review of studies evaluating recurrent VTE based on RVO (+) vs RVO (-) status

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<td>Tosetto, J Thromb Haemost 2012</td>
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Prognostic significance of residual venous obstruction in patients with treated unprovoked deep vein thrombosis

A patient-level meta-analysis

- 2527 pts with 1st unprovoked proximal DVT (10 prospective studies)
- RVO is a mild risk factor for recurrent VTE

Donadini, Thromb Haemost 2014
Clinical Prediction Scores for Recurrent VTE
Vienna Prediction Model

http://cemsiis.meduniwien.ac.at/en/kb/science-research/software/clinical-software/recurrent-vte/#calc-params

How Long to Anticoagulate After Unprovoked DVT

Bleeding

Patient age
Active cancer
History of prior DVT
Stroke
Recent MI
Anemia
Chronic renal disease
Liver dysfunction
Thrombocytopenia
Choice of anticoagulation

Recurrent Thrombosis

Idiopathic VTE

Heit, Am J Hematol 2012

Is Duration of Anticoagulation Influenced by Choice of Anticoagulation?

- Meta-analysis of 12 RCTs of 102,607 patients
- Slight reduction in major bleeding with TSOACs

Major Bleeding

Study vs Response

1. DVT provoked by a transient risk factor 3 mos AC
2. Unprovoked DVT
Extended duration anticoagulation >3 mos AC
Individualized

1. Clinical prediction scores for recurrent VTE
   - Patient age
   - D-dimer
   - Gender
   - Residual venous obstruction (RVO) is a weak predictor

4. Risk for recurrent VTE vs risk for bleeding

Summary

1. DVT provoked by a transient risk factor 3 mos AC
2. Unprovoked DVT
Extended duration anticoagulation >3 mos AC
Individualized

1. Clinical prediction scores for recurrent VTE
   - Patient age
   - D-dimer
   - Gender
   - Residual venous obstruction (RVO) is a weak predictor

4. Risk for recurrent VTE vs risk for bleeding

Chai-Adisaksopha, Blood 2014