D-dimer and/or Duplex Findings to Manage DVT

Timothy K. Liem, MD, MBA, FACS
Professor of Surgery
Division of Vascular and Endovascular Surgery
Knight Cardiovascular Institute
Oregon Health & Science University

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

Prandoni, Haematologica 2007

Cumulative incidence of recurrent thromboembolism with unprovoked and secondary VTE

Disclosures

Timothy K. Liem, MD discloses the following:

• Site PI for Boehringer-Ingelheim (dabigatran)

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Duplex Criteria for Residual Venous Obstruction Vary

RVO (+) Association

RVO (-) Association

Prandoni 2009

Cosmi 2010

Siragusa 2008

Le Gal 2011

Vein diameter measured during maximal compression

- Recanalized
  D < 2 mm single meas
  D < 3 mm multi meas

- Residual
  D < 2 mm single meas
  D < 3 mm multi meas

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

Stephenson, JVS Venous and Lym Dis 2015

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Donadini, Thromb Haemost 2013

- 257 pts with 1st unprovoked proximal DVT (10 prospective studies)
- 55.1% with RVO
- Median follow up 23.3 mos
- Recurrent VTE 15.8%
- Recurrence locations
  - 53.4% ipsilateral LE
  - 29.5% contralateral LE
  - 17.1% isolated PE

Donadini, Thromb Haemost 2013

Only if RVO detected at 3 mos

D-dimer

- 355 pts with 1st unprovoked VTE + anticoagulation ≥ 6 mos had D-dimer while on VKA.
  - AbNL D-dimer continue VKA
  - NL D-dimer no VKA + re-test 1, 3, 5, 7, 9, 11, 13 mos

- Early conversion (≤ 90 d)
- Late conversion (> 90 d)
- No D-dimer conversion

Cosmi, Blood 2010


- 608 pts with 1st unprovoked VTE + anticoagulation > 3 mos had single D-dimer 1 mos after discontinuing VKA
  - NL D-dimer - 385
  - AbNL D-Dimer - 223
  - No anticoagulation - 120
  - Resume warfarin - 103

AbNL (- VKA) 10.9% per yr
NL (no VKA) 4.4% per yr
AbNL (+ VKA) 2.0% per yr


Kearon, Chest 2016

Antithrombotic Therapy for VTE Disease: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines

Proximal DVT provoked by surgery, recommend 3 months AC
Grade of Recommendation 1B

Proximal DVT provoked by non-surgical transient risk factor, recommend 3 months AC
Grade of Recommendation 1B

Unprovoked DVT (distal or proximal), recommend ≥ 1 month AC over shorter period. After 3 months, evaluate risk-benefit of extended therapy.
- Patient sex and D-dimer level 1 month after stopping AC may influence the decision to stop or extend therapy.
Grade of Recommendation 1B
Summary

- The association between residual venous obstruction (RVO) and recurrent VTE is weak.

- D-dimer after completion of anticoagulant therapy is a predictor of recurrent VTE
  - Provoked DVT
  - Unprovoked DVT

- D-dimer can and should be used to tailor the duration of anticoagulant therapy.