Vascular Protection: Preventing Thrombotic Complications of VTE and PAD

Thursday, October 11, 2018, 2:00pm ET

**Guest Speakers:** Geoff Barnes, MD  
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**Moderators:** Tracy Minichiello, MD; Sara Vazquez, PharmD, BCPS, CACP;  
and Diane Wirth, ANP, CACP

Anticoagulation FORUM
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Disclosures

Geoffrey Barnes
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Scott Damrauer
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Case 1 – Venous Thromboembolism

• 32 year old woman presents to clinic after a recent DVT diagnosis

• Developed right leg swelling after a 4 hour car ride
  • Diagnosed with DVT in ED, treated with rivaroxaban

• Past Medical History:
  • DVT 3 years ago while taking OCPs (6 months warfarin)

• Social History:
  • Non-smoker
  • Recently married
  • No children or prior pregnancies
Case 1 – Important Clinical Questions

• Why did she develop DVT?

• Is rivaroxaban appropriate therapy?

• How long should she be treated?

• How might this impact her plans to get pregnant in the next 1-2 years?
Thrombophilia Testing?

• Best to test ONLY if it will impact clinical care
  • Choice of anticoagulant
  • Length of treatment
  • Screening family members
  • Implications for other aspects of care (e.g. pregnancy)

• Her testing revealed heterozygous for Factor V Leiden
  • Other thrombophilias “normal”
VTE Risk and Factor V Leiden

<table>
<thead>
<tr>
<th></th>
<th>Initial VTE Risk</th>
<th>Recurrent VTE Risk</th>
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<tbody>
<tr>
<td>Heterozygous</td>
<td>OR 4.2 (3.4-5.3)</td>
<td>OR 1.4 (1.1-1.8)</td>
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<tr>
<td>Homozygous</td>
<td>OR 11.5 (6.8-19.3)</td>
<td>OR 2.65 (1.2-6.0)</td>
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Factor V Leiden mutations in 4-5% of the general population
- 12-18% of patients with VTE
- Caucasian > other
- Homozygous mutation is rare

Blood. 1995;85(6):1504
Arch Intern Med. 2006;166(7):729
JAMA. 2009;301(23):2472
Drug Selection?

- Recurrent VTE → Rivaroxaban (and other DOACs) are good choices
  - Low-dose option after 6 months

Drug Selection?

• Direct Oral Anticoagulants & Factor V Leiden?

RE-COVER I & II

RE-MEDY

DE = Dabigatran etexilate; W = Warfarin

Length of Treatment

131 Patients with Recurrent (2nd) VTE
How to Manage Future Pregnancy?

Factor V Leiden + prior VTE → Often anticoagulated antepartum + postpartum

Factor V Leiden without prior VTE → Usually do NOT anticoagulated
  • Consider postpartum anticoag if family history of VTE or cesarean delivery

*Lancet* 2003; **361**: 901–08
*Obstet Gynecol.* 2018;132(1):e18
*Chest.* 2012;141(2 Suppl):e691S
Return to the Case

• Continued on rivaroxaban (patient choice)

• Plan to contact provider as soon as she becomes pregnant to change anticoagulant
Case 2 – Peripheral Artery Disease

74 year old man presents with arterial ulceration on this right foot.

Past Medical History:

- Hypertension
- Myocardial infarction, s/p coronary artery bypass 6 years ago
- Type 2 diabetes mellitus
- Chronic kidney disease, stage 2 (eGFR 55 mL/min/1.73m²)

Current medications:

- Aspirin
- Rosuvastatin
- Metformin
- Lisinopril
Antiplatelet & antithrombotic therapy in PAD

GOALS
• Prevention of MACE
  • MI
  • Stroke
  • Cardiovascular death
• Prevention of MALE
  • Revascularization
  • Amputation

OPTIONS
• Aspirin monotherapy
• P2Y12 inhibitor monotherapy
• Dual antiplatelet therapy
• Anti-thrombotic therapy
Case 2 continues...

He undergoes a left femoral artery to below the knee popliteal artery bypass using a PTFE graft.
What is the role for post-operative antiplatelet & anticoagulation therapy?
Antiplatlet & antithrombotic therapy in PAD

GOALS
• Prevention of MACE
  • MI
  • Stroke
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OPTIONS
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• Dual antiplatelet therapy
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Improve graft patency
CASPAR trial

- 851 patients undergoing lower-extremity, below-knee bypass surgery
- Randomized to ASA+clopidogrel or ASA+placebo

Belch et al. JVS 2010
Case 2 continues...

The patient was started on clopidogrel 75mg daily.

4 years later slow graft flow is noted on a screening duplex and an angiogram demonstrates high grade iliac and popliteal artery stenosis on the left. A covered stent is placed in his left common iliac artery and the below knee popliteal artery is treated with drug-coated balloon angioplasty.

Post-procedurally he developed atrial fibrillation.
How should his anti-platelet & anti-thrombotic therapy be managed?

• Should he be anticoagulated for his atrial fibrillation?
• What agent and does should be used?
• What should his antiplatelet regimen be?
Anticoagulation for atrial fibrillation

**CHA₂DS₂Vasc score**
- No CHF history 0
- **Hypertension** 1
- Age ≥ 75 2
- Diabetes 1
- Stroke 0
- Vascular disease 1
- Male sex 0

Total 5

~ 7 percent per year risk of stroke
Dual antiplatelet therapy & anticoagulation

- Meta-analysis of 12 observational studies and 4 RCTs
- Anticoagulation + DAT (7,546) versus Anticoagulation + MAT (6,456)
- Patients with atrial fibrillation undergoing PCI or s/p MI

![Graph showing relative risk for various outcomes such as major bleeding, minor bleeding, MI, stroke, stent thrombosis, and repeat revascularization.]
**Rivaroxaban + DAT v MAT**

- RCT comparing:
  1. Rivaroxaban 15mg daily + P2Y$_{12}$ inhibitor
  2. Rivaroxaban 2.5mg twice daily + Aspirin + P2Y$_{12}$ inhibitor
  3. Warfarin + Aspirin + P2Y$_{12}$ inhibitor

- Non-valvular atrial fibrillation patients undergoing PCI

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**CLINICALLY SIGNIFICANT BLEEDING**

**MACE**

Gibson *NEJM* 2016
Return to the case

• Anticoagulated for atrial fibrillation with rivaroxaban

• Single anti-platelet therapy with clopidogrel for 3 months
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