Venous Thromboembolism Prophylaxis with Rivaroxaban in Elective Foot and Ankle Surgery

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Conflict of Interest

Martin Wiewiorksi, MD
My disclosure is in the final AOFAS Mobile App.
I have no potential conflicts with this presentation
Why VTE Prophylaxis?

- Incidence of deep venous thrombosis in foot/ankle surgery is low (1.5 – 3.5 %), but still an potential threat

<table>
<thead>
<tr>
<th></th>
<th>Deep Venous Thrombosis (%)</th>
<th>Pulmonary Embolism (%)</th>
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<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Proximal</td>
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<tr>
<td>Total Hip Replacement</td>
<td>42–57</td>
<td>18–36</td>
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<tr>
<td>Total Knee Replacement</td>
<td>41–85</td>
<td>5–22</td>
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<tr>
<td>Hip Fracture</td>
<td>46–60</td>
<td>23–30</td>
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Oral VTE Prophylaxis

- Oral application for prophylaxis of venous thromboembolism (VTE) after total hip and knee arthroplasty has high acceptance:
  - Non-invasive nature
  - Oral application instead of subcutaneous application of low-molecular-weight heparin (LMWH)

- Patients in our clinic receive either oral thrombosis prophylaxis (rivaroxaban), or subcutaneous prophylaxis with LMWH (dalteparin).
- No clinical data exists describing the use of oral prophylaxis in elective orthopedic foot and ankle surgery.
How Rivaroxaban Works

**Oral**
- **INDIRECT**
  - Cumarin-derivates, factors II, VII, IX, X
- **DIRECT**
  - Rivaroxaban

**Parenteral**
- **INDIRECT**
  - Fondaparinux
  - Idraparinux
- **DIRECT**
  - LMH
  - UFH
  - Argatroban
  - Bivalirudin

**Anti** = Antithrombing; LMH = Low Molecular Weight Heparin; UFH = Unfractionated Heparin
Aims and Hypotheses

The aims of this study were:
1. To assess the incidence of VTE after oral prophylaxis after elective foot and ankle procedures
2. To identify risk factors for VTE after oral prophylaxis after elective foot and ankle procedures
Methods

• Retrospective chart review of patients undergoing elective foot and ankle surgery between January 2010 and 2013
• Type of medicamentous thrombosis prophylaxis was noted
  • All patients receiving oral antithrombotic medication (rivaroxaban, Xarelto©, Bayer, Germany) were included
  • Location, length and type of surgery and tourniquet time were noted
  • Co-morbidities (e.g. diabetes, coagulopathy, ASA classification) were noted
  • Patients previously treated with phenprocoumon or clopidrogel were excluded

• A phone interview was conducted and patients were asked whether a thromboembolic incident occurred or not
• If an incidence was reported, the report of the diagnostic findings was obtained from the general practitioner
Results

- 450 patients were included
- Two thromboembolic incidents occurred (0.4%; deep venous thrombosis confirmed by ultrasound)
- Both patients had a history of previous deep venous thrombosis and a positive family history for VTE
- Due to low percentage of patients with VTE, a multivariate analysis could not be performed
Conclusion

The incidence of VTE after oral thrombosis prophylaxis with rivaroxaban is low and comparable with the incidence after subcutaneous application of LMWH