failure of rivaroxaban therapy
- 64 year old female underwent ventral hernia repair six weeks prior to development of DVT
- Rivaroxaban therapy for 7 days and developed chest pain
- No prior history of thrombotic events, current smoker
- Compliant with medications
- Negative thrombophilia evaluation

Pulmonary Embolism While on Therapeutic Rivaroxaban

- Case Report
  - 57 year old female.
  - Right ankle fracture treated with walking boot immobilization.
  - DVT 2 weeks later popliteal and tibial veins.
  - Began rivaroxaban 15 mg BID.
  - No previous history of DVTs.
  - Family & personal history of thromboembolic events negative.
  - Hypercoagulable workup was negative.
  - Awoke from sleep SOB with pleuritic chest pain.
  - Treatment day 13
  - No missed doses.
  - PESI Score 1.
  - Switched to enoxaparin Q12h.
Discussion

• Rivaroxaban has been hailed as a convenient and safe oral alternative for the treatment of deep vein thrombosis (DVT).
• There is currently a scarcity of literature surrounding rivaroxaban including dose tailoring and monitoring. Considering the broad patient safety implications of anticoagulation failure, rivaroxaban should be used more cautiously.
• Rivaroxaban acts as a direct inhibitor of factor Xa. It was approved by the FDA for the prevention and treatment of thrombosis in 2012.
• DVT may lead to life threatening pulmonary embolism (PE) if patients are not adequately anticoagulated.

Failure of Dabigatran and Rivaroxaban to Prevent Thromboembolism in Antiphospholipid Syndrome: A Case Series of Three Patients

• Mayo Clinic – Three patients known antiphospholipid syndrome treated successfully with warfarin but were switched to direct oral factor inhibitors (DOFIs)
• Thrombotic endocarditis with symptomatic cerebral emboli
• Ischemic arterial strokes and right transverse sigmoid sinus thrombosis
• Porto mesenteric venous thrombosis
• None had failed warfarin therapy prior to conversion
• Caution in using DOFIs for APS patients outside a clinical trial setting

Rheumatology Key Message: Letters to Editor

• Rivaroxaban does not seem to be efficient and safe in all antiphospholipid syndrome patients especially those with a history of arterial thrombosis or a high-risk aPL Profile (triple positivity)
• 4 cases reported

Pulmonary Embolism in Morbidly Obese Patient Receiving Dabigatran

• 57 year old male prior DVT, HTN, type 2 diabetes mellitus, atrial fibrillation, gastric bypass, submassive PE – BMI 44.29 kg/m² taking drug for 6 years
• Failure may be due to gastric bypass surgery and proton pump inhibitor use which are known to affect dabigatran trough levels
• Two other cases reported in 2013 and 2016

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Rivaroxaban Failure During the Postpartum Period

- 35 year old postpartum women presented to ER new multiple segmental PE 5 days after therapy started for DVT
- No precipitating cause including noncompliance
- Possible pharmacokinetic alterations seen postpartum period contributing to decreased drug exposure
- Further research needed to identify impact of pharmacokinetic changes in postpartum patients and other special populations requiring anticoagulation


Advantages

- Rapid onset of action
- Predictable therapeutic effect
- Lack of requirement for monitoring
- Limited interactions with other drugs

Advantages That Maybe Disadvantages

- Short half life may only require cessation of drug for management of hemorrhagic complications but at the same time demands strict adherence to the drug for clinical efficacy
- Lack of monitoring seems extremely attractive however not only does it prevent tailoring of the intensity of anticoagulation but also makes determination of adequacy of anticoagulation unreliable
- No specific antidote yet available for reversal of the anticoagulant effect


References