Rivaroxaban (Xarelto®)

Pharmacologic Category: Factor Xa Inhibitor

Pharmacodynamics/Kinetics: $T_{1/2}$ of ~5 to 9 hrs (normal renal function)
Time to peak, plasma: 2 to 4 hrs
Indicated for Nonvalvular Atrial Fibrillation (To prevent stroke and systemic embolism), Postoperative Thromboprophylaxis, and DVT/PE treatment

Dosing Guidelines

1) Nonvalvular Atrial Fibrillation

Creatinine Clearance	Recommended Dose
> 50 ml/min	20 mg QDAY (with evening meal)
15-50 ml/min	15 mg QDAY (with evening meal)
< 15 ml/min or HD patient	Avoid Use

Send CI if dose not appropriate. Call MD if < 15 ml/min or HD patient.

2) Postoperative Thromboprophylaxis (Knee or Hip)

- Dose = 10 mg daily (Avoid use if CrCl < 30 ml/min.)
- **Initiate therapy after hemostasis has been established (~10 hours postoperatively).**
- Use for 12 to 14 days for knee replacement.
- Use for 35 days for hip replacement.

3) DVT/PE Treatment

Creatinine Clearance	Recommended Dose
> 30 ml/min	15mg BID for 21 days, Then 20mg QDAY (Take with food.)
< 30 ml/min	Avoid Use

Send CI if dose not appropriate. Call MD if < 30ml/min or HD patient.

Conversion Guidance

- **Rivaroxaban to Warfarin**
  - Discontinue rivaroxaban and initiate both warfarin and a parenteral anticoagulant at the time the next rivaroxaban dose would have been administered (12 or 24 hours)
- **Warfarin to Rivaroxaban**
  - Discontinue warfarin and start Rivaroxaban when INR < 3.0
- **Lovenox to Rivaroxaban**
  - Initiate Rivaroxaban 0-2 hours before time of next scheduled dose of Lovenox would have been administered
- **Fondaparinux to Rivaroxaban**
  - Initiate Rivaroxaban 0-2 hours before time of next scheduled dose of Fondaparinux would have been administered
- **Dabigatran to Rivaroxaban**
  - Initiate Rivaroxaban 0-2 hours before time of next scheduled dose of Dabigatran would have been administered
- **Heparin to Rivaroxaban**
  - Stop heparin infusion and initiate rivaroxaban simultaneously
- **Rivaroxaban to Heparin drip/LMWH/Fondaparinux**
  - Initiate heparin drip/LMWH/Fondaparinux when next dose of rivaroxaban would have been administered (12 or 24 hours)

Recommendation for Discontinuation Prior to Surgery:

- Discontinue 24 hours prior to surgery

Reversal Agents

- No specific antidote (not dialyzable)
- Prothrombin Complex Concentrate (PCC), APCC, or recombinant factor VIIa can be used.

******Remember that rivaroxaban can contribute to INR elevation, therefore, initial INR measurements after initiating warfarin may be unreliable.******

Dabigatran (Pradaxa®)

Pharmacologic Category: Thrombin Inhibitor

Pharmacodynamics/Kinetics: ***-$T_{1/2}$ of ~12 to 17 hrs (normal renal function)***
-Time to peak, plasma: 1 hr (delayed 2 hrs by food with no effect on bioavailability)
-Do not open capsule (increases bioavailability by 75%)

Indicated for Nonvalvular Atrial Fibrillation: To prevent stroke and systemic embolism

Dosing Guidelines

Creatinine Clearance	Recommended Dose
> 30 ml/min	150 mg BID
15-30 ml/min	75 mg BID
< 15 ml/min or HD patient	Not recommended

Send CI if dose not appropriate. Call MD if < 15 ml/min or HD patient.

Conversion Guidance

- **Dabigatran to Warfarin**
  - CrCl > 50 ml/min → Start 3 days before stopping dabigatran
  - CrCl 31-50 ml/min → Start 2 days before stopping dabigatran
  - CrCl 15-30 ml/min → Start 1 day before stopping dabigatran
- **Warfarin to Dabigatran**
  - Discontinue warfarin and start dabigatran when INR < 2.0
- **Parenteral Anticoagulant to Dabigatran**
  - Initiate dabigatran 0-2 hours before time of next scheduled dose (Lovenox) or at the time of d/c for the continuously administered parenteral drug (Heparin)
- **Dabigatran to Parenteral Anticoagulant**
  - Wait 12 hours (CrCl ≥ 30 ml/min) or 24 hours (CrCl < 30 ml/min) after last dose of dabigatran.
- **Dabigatran to Rivaroxaban**
  - Initiate Rivaroxaban 0-2 hours before time of next scheduled dose of Dabigatran would have been administered

Recommendations for Discontinuation Prior to Surgery:

- CrCl ≥ 50 ml/min → Stop 1-2 days prior to procedure
- CrCl < 50 ml/min → Stop 3-5 days prior to procedure
  Recommend 2 days (≥ 50 ml/min) or 5 days (< 50 ml/min) for patients undergoing MAJOR surgery

Reversal Agents

- No specific antidote (HD does remove)
- FFP and PRBCs can be used.

******Remember that Pradaxa can contribute to INR elevation. Warfarin's effect on INR will be better reflected after dabigatran has been stopped for ≥ 2 days.******