

Inclusion criteria:

- Weight \geq 2.6 kg
- Able to tolerate oral or gastric feeds

Exclusion criteria:

- Patients receiving transpyloric/jejunal feeds
- Antiphospholipid antibody syndrome
- Mechanical heart valves

Patient with indication for direct-acting oral anticoagulant (DOAC) management

Indications for management:

- Treatment or prophylaxis of VTE

Rivaroxaban considerations for use

Adverse effects:

- Most common event is bleeding; refer to [antidote](#) section for management
- > 10%
 - Gastroenteritis, vomiting, cough
- 1-10%
 - Syncope, pruritus, skin blister or rash, abdominal pain, increased serum transaminases, anxiety, depression, dizziness, fatigue, insomnia, back or limb pain, muscle spasm

Antidote:

- There is no reversal agent for rivaroxaban available at Children's Mercy.
- Discontinuation of the oral agent generally will terminate the anticoagulant effect.
- If immediate reversal is needed for emergent surgery/procedure or life-threatening bleeding, use Kcentra (prothrombin complex concentrate) 25 - 50 units/kg (max dose 2000 units) once and consider use of anti-fibrinolytics.
- If rivaroxaban dose was taken < 2 hours prior, can use activated charcoal.
- Consider antifibrinolytic agent if bleeding is minor.
- Rivaroxaban is not dialyzable.

Drug Interactions:

- Inducers and inhibitors of CYP3A4 and P-glycoprotein
 - Inducers may decrease the drug concentration
 - Common examples: some antiepileptics
 - Inhibitors may increase the drug concentration
 - Common examples: azole antifungals, macrolide antibiotics
- Increased potential for hemorrhage:
 - Anticoagulants: Heparin, Vitamin K antagonists, direct thrombin inhibitors
 - Thrombolytic agents: alteplase, streptokinase, urokinase
- Drugs affecting platelet function: aspirin, NSAIDs, dipyridamole, clopidogrel, ticlodipine, cilostazol
- Complementary/alternative medications known to have the potential to increase bleeding risk: garlic, ginger, ginkgo biloba, fenugreek, St. John's Wort

Other considerations:

- [Fast Facts](#)
- For recommendations regarding transitioning between anticoagulants, contact hematology.
- Consider alternative analgesics such as acetaminophen, as clinically appropriate, if analgesia is required.
- Rivaroxaban should be taken with food as it aids in absorption. Administer via oral or gastric route only.

Guidance for holding prior to procedures:

- For minor procedures where bleeding risk is low, hold for at least 24 hours prior to procedure.
- For higher risk procedures with increased risk of bleeding, hold for at least 48 hours prior to procedure.
- May need to hold longer in patients with decreased renal function; discuss with hematology.

Initiation and Maintenance

- Consult Coagulation Service
- Obtain baseline CBC, PT, aPTT
- [Determine weight-based dosing for treatment or prophylaxis as indicated](#)
- Determine rivaroxaban formulation:
 - Oral suspension (1 mg/mL)
 - Tablets (10 mg, 15 mg, 20 mg)
- [Patient Education](#)

Duration of Therapy		
Provoked thrombus	DVT/Intra-abdominal/CSVT	Minimum of <u>6 weeks</u> of anticoagulation therapy with prolongation if clot remains fully occlusive (continue for 3 months) and/or risk factors still present (continue until risk factor resolved).
	PE	Minimum of <u>6 months</u> of anticoagulation therapy with prolongation based on clinical situation.
Unprovoked thrombus		Minimum of <u>3 months</u> of anticoagulation therapy with prolongation based on clinical situation.

Abbreviations:

VTE = venous thromboembolism
 CSVT = cerebral sinus venous thromboembolism



QR code for mobile view

This clinical pathway is meant as a guide for physicians and healthcare providers. It does not establish a standard of care, and is not a substitute for medical judgment which should be applied based upon the individual circumstances and clinical condition of the patient. Printing of Clinical Pathways is not recommended as these documents are updated regularly. Copyright © The Children's Mercy Hospital 2023. All rights reserved.

References:

Goldenberg, N. A., Kittelson, J. M., Abshire, T. C., Bonaca, M., Casella, J. F., Dale, R. A., Halperin, J. L., Hamblin, F., Kessler, C. M., Manco-Johnson, M. J., Sidonio, R. F., Spyropoulos, A. C., Steg, P. G., Turpie, A. G. G., & Schulman, S. (2022). Effect of Anticoagulant Therapy for 6 Weeks vs 3 Months on Recurrence and Bleeding Events in Patients Younger Than 21 Years of Age With Provoked Venous Thromboembolism: The Kids-DOTT Randomized Clinical Trial. *Jama*, *327*(2), 129-137. <https://doi.org/10.1001/jama.2021.23182> [Published correction appears in *JAMA* (2022, Mar 22), *327*(12),1188.]

Izzo, A.A., DiCarlo, G., Borrelli, F., & Ernst E. (2005). Cardiovascular pharmacotherapy and herbal medicines: the risk of drug interaction. *International Journal of Cardiology*, *98*(1), 1-14. doi: 10.1016/j.ijcard.2003.06.039.

Lexicomp Online, Pediatric and Neonatal Lexi-Drugs. *Rivaroxaban*. Retrieved May 2, 2023, from <https://online.lexi.com>.

Male, C., Lensing, A. W. A., Palumbo, J. S., Kumar, R., Nurmeev, I., Hege, K., Bonnet, D., Connor, P., Hooimeijer, H. L., Torres, M., Chan, A. K. C., Kenet, G., Holzhauer, S., Santamaria, A., Amedro, P., Chalmers, E., Simioni, P., Bhat, R. V., Yee, D. L., . . . Monagle, P. (2020). Rivaroxaban compared with standard anticoagulants for the treatment of acute venous thromboembolism in children: a randomised, controlled, phase 3 trial. *Lancet Haematol*, *7*(1), e18-e27. [https://doi.org/10.1016/s2352-3026\(19\)30219-4](https://doi.org/10.1016/s2352-3026(19)30219-4)

Martin, K. A., Lee, C. R., Farrell, T. M., & Moll, S. (2017). Oral Anticoagulant Use After Bariatric Surgery: A Literature Review and Clinical Guidance. *Am J Med*, *130*(5), 517-524. <https://doi.org/10.1016/j.amjmed.2016.12.033>

Stanford University School of Medicine Department of Otolaryngology-Head & Neck Surgery. Medications and herbs that affect bleeding. Retrieved September 18, 2023, from https://med.stanford.edu/content/dam/sm/ohns/documents/Sinus%20Center/Stanford_Medication_and_Herbs.pdf.

Xarelto. Highlights of prescribing information. (2023, February). <https://www.janssenlabels.com/package-insert/product-monograph/prescribing-information/XARELTO-pi.pdf>.