

What are DOAC's and what are they used for?

- Anticoagulants are commonly used to treat atrial fibrillation and a variety of thrombotic conditions. **Direct oral anticoagulants (DOAC's)** represent a major advancement in oral anticoagulation. Prior to their introduction, Warfarin (Coumadin) was the anticoagulant of choice. Warfarin has many disadvantages. It is considered a narrow therapeutic index medication, meaning, just a small difference in dose or blood concentration can lead to serious adverse drug reactions and/or therapeutic failures that can be life-threatening. It requires frequent lab monitoring and has several drug interactions, making it very difficult to stay within the desired therapeutic range.
- There are currently 4 DOAC's available. Dosing and indications are listed in the table below.
 - In atrial fibrillation: Meta-analysis of RCT's have demonstrated that among adults ≥ 75 years of age, DOAC's have a lower frequency of stroke/systemic embolism and a noninferior risk of major bleeding versus warfarin.¹
 - In VTE: results from VTE RCT's have shown that when compared to warfarin, DOACs provide at least equal efficacy, possibly improved, as well as decreased rates of major bleeding in those ≥ 75 years of age.²

Indication	Apixaban (Eliquis)	Dabigatran (Pradaxa)	Edoxaban (Savaysa)	Rivaroxaban (Xarelto)
Nonvalvular Atrial Fibrillation (AF)	5 mg bid	150 mg bid	60 mg once daily	20 mg once daily with largest meal (food increases bioavailability)
VTE Treatment	10 mg bid for 7 days, then 5 mg bid; may reduce to 2.5 mg bid for extended treatment ≥ 6 months	Parenteral anticoagulation for 5-10 days; followed by 150 mg bid	Parental anticoagulation for 5-10 days; then 60 mg once daily	15 mg bid for 21 days, then 20 mg daily with largest meal; may reduce to 10 mg daily for extended treatment ≥ 6 months
VTE Prophylaxis	2.5 mg bid-orthopedics only	110 mg for the 1st day, then 220 mg once daily-orthopedics only	Not FDA approved	10 mg once daily, with or without food
Prevention of MACE in CHD/PAD	Not FDA approved	Not FDA approved	Not FDA approved	2.5 mg bid

Direct Oral Anticoagulants (DOAC's)

July 2022

Indication	Apixaban (Eliquis)	Dabigatran (Pradaxa)	Edoxaban (Savaysa)	Rivaroxaban (Xarelto)
Dose Adjustments*	AF: if ≥ 2 of the following, reduce to 2.5 mg bid: age ≥ 80 , TBW ≤ 60 kg, SCr ≥ 1.5 mg/dL	AF: CrCl 15-30 ml/min: reduce to 75 mg BID VTE treatment/prophylaxis: avoid if CrCl < 30 ml/min	AF: not recommended if CrCl > 95 ml/min AF and VTE treatment: CrCl: 15-50 ml/min: reduce to 30 mg daily CrCl < 15 ml/min: avoid use	AF: CrCl 15-50 ml/min: reduce to 15 mg once daily with largest meal Avoid if CrCl < 15 ml/min. VTE treatment/prophylaxis: Avoid if CrCl < 30 ml/min PAD/CHD-stable: Avoid use if CrCl < 15 ml/min
Caveats	Antidote: Andexanet alfa	Antidote: idarucizumab Must be stored in original container. Beers list medication: Increased risk of GI bleeding compared with warfarin and reported rates with other DOACs when used for long-term treatment of VTE or atrial fibrillation in adults ≥ 75 years. ³	Antidote: Andexanet alfa	Antidote: Andexanet alfa Beers list medication: Increased risk of GI bleeding compared with warfarin and reported rates with other DOACs when used for long-term treatment of VTE or atrial fibrillation in adults ≥ 75 years.

*Some of these need further dose adjustments when used with P-gp inhibitors, CYP3A inhibitors, with reduced renal function. Refer to PI for specific dosing recommendations.

NOTE: In clinical trials, the Cockcroft-Gault equation utilizing ACTUAL body weight was used to estimate CrCl in all phase 3 clinical trials of DOACs.

References:

1. Kim J. *Cardiol* 2018;72:105.
2. Van ES N, et al. *Blood*. 2014;124(12):1968-78.
3. 2019 American Geriatrics Society Beers Criteria Update Expert Panel. American Geriatrics Society 2019 updated AGS Beers Criteria for potentially inappropriate medication use in older adults. *J Am Geriatr Soc*. 2019;67(4):674-694. doi: 10.1111/jgs.15767
4. Clinical Pharmacology/monographs.