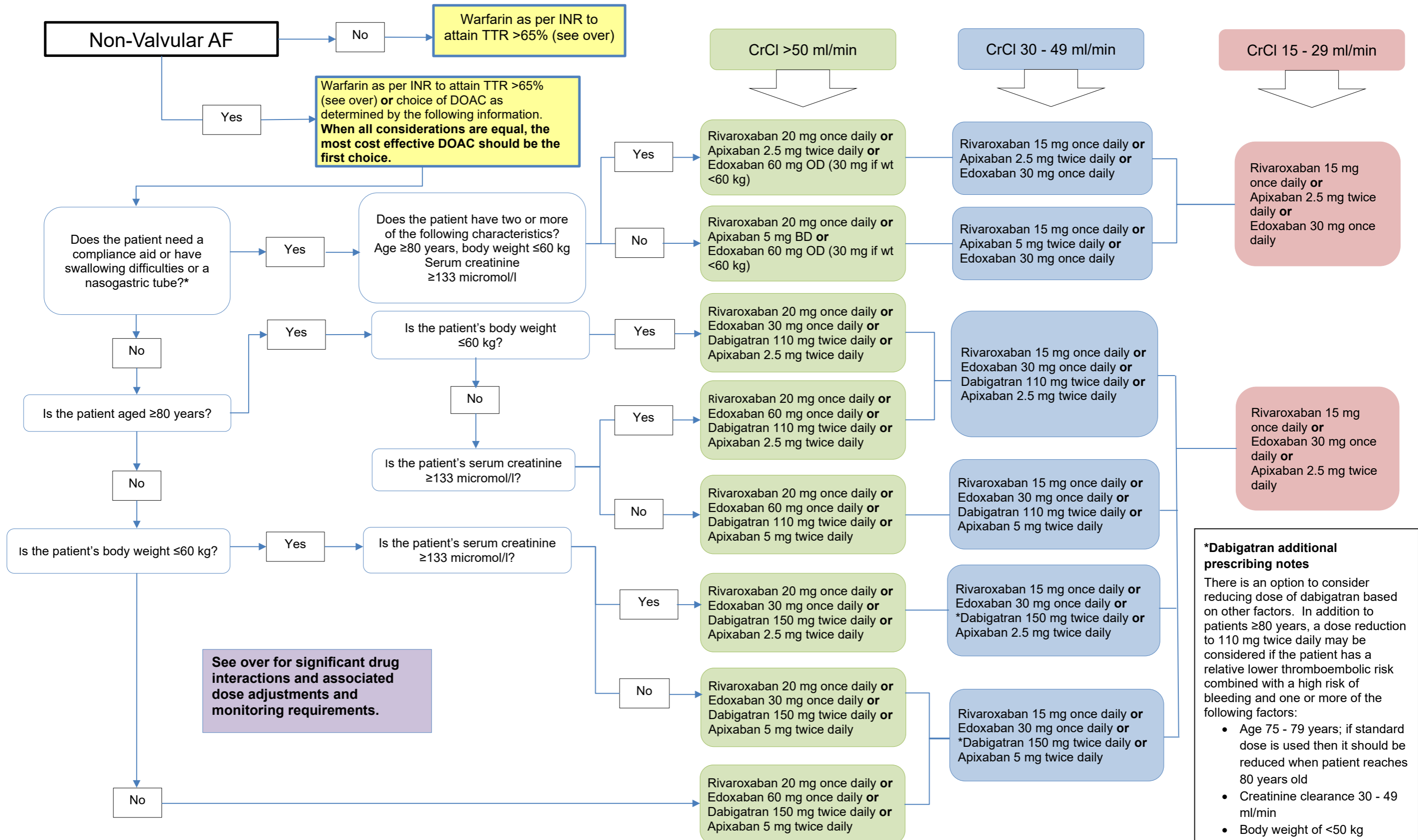


DECISION MAKING ALGORITHM: ORAL ANTICOAGULANT CHOICES FOR STROKE PREVENTION IN AF



*For guidance on crushing tablets and dispersing in water, juice or puree, please refer to the full guideline ([313FM Dabigatran, Rivaroxaban, Edoxaban and Apixaban for Atrial Fibrillation \(AF\)](#))

Adapted from "NOAC prescribing in patients with non-valvular AF" Greater Glasgow & Clyde CCG

DOAC MONITORING GUIDANCE

Creatinine Clearance (CrCl) - Cockcroft-Gault Method – use actual body weight when calculating CrCl for DOACs (see also note below)

It is essential to calculate the patient's creatinine clearance using the Cockcroft-Gault (CG) formula for DOAC dosing decisions using **ACTUAL BODY WEIGHT** ideally taken **within last 6 - 12 months or more recently if frail or likely to have been a change in weight** (NOT ideal body weight). For definition of frailty see [Rockwood clinical frailty scale](#).

There is limited data on appropriate dosing of DOACs in extremes in body weight (specialist advice should be sought for patients who weigh <45 kg or >120 kg). Actual body weight was used in clinical trials to calculate CG equation but there was a paucity of data in the clinical trials and it may not be accurate for estimation of CrCl at extremes of bodyweight, especially in obese patients.

The use of a web based application such as [MDCalc LINK](#) is suggested where actual bodyweight is used to calculate the CG CrCl. If in addition the patient's height is added the different weight method calculations (modified for body weight) can be seen giving a range of possible values for CrCl. Where these results cross or are close to a CrCl level that may require a DOAC dose change, this can support dosing decision on the most appropriate DOAC, taking into account stroke and bleeding risk. For further guidance and information on dosing in renal impairment see [DOACs in Renal Impairment-Practice Guide to Dosing Issues](#) (there is also a MDCalc app available for download).

RECOMMENDED MONITORING SCHEDULE
Assess compliance and interacting drugs –at initiation AND at each review, recommended at least annually <ul style="list-style-type: none"> – Check for side effects - at each review, recommended at least annually.
<ul style="list-style-type: none"> – FBC and LFTs (as ALT), weight, BP and pulse check – at initiation AND at least annually – Bilirubin - at initiation ONLY.
Stroke versus bleeding risk assessment - at initiation AND at least annually
U&Es at initiation AND as below: CrCl >60 ml/min - annually. Consider 6 monthly if aged >75 years and frail. CrCl 30 – 60 ml/min 6 monthly CrCl <30 ml/min 3 monthly The European Heart Rhythm Association suggests that if CrCl is less than 60 ml/minute, the frequency of monitoring (in months) can be guided by the CrCl divided by 10. For example, if the creatinine clearance is 34 ml/minute then the renal function should be monitored every 3 - 4 months. More frequent monitoring if inter-current illness or medicines that may impact on renal or hepatic function.

When to consider switching from warfarin to DOAC

Consider changing to one of the DOACs if:

- 2 INR values higher than 5 or 1 INR value is higher than 8 within the past 6 months
- 2 unplanned INR values less than 1.5 within the past 6 months
- Time in therapeutic range (TTR) is <65% in last 12 months
- Housebound and/or requiring drugs dispensed in compliance aid by community pharmacy

Switching from DOAC to warfarin

- Discontinue warfarin and start apixaban as soon as INR is <2.5
- Discontinue warfarin and start dabigatran as soon as INR <2.5
- Discontinue warfarin and start rivaroxaban as soon as INR ≤3.0
- Discontinue warfarin and start edoxaban when the INR is ≤2.5

The time taken to reach the desired INR may vary from person to person and will depend on the individual's initial INR level and renal function.

Abbreviations

DOAC - Direct oral anticoagulants; OAC - Oral anticoagulants; INR - International normalised ratio; AF - Atrial fibrillation

NB: All patients prescribed an oral anticoagulant require a patient safety card (also known as an alert card) which provides appropriate details of their treatment.

Drugs with the potential to interact with DOACs - see also individual SPCs for DOACs on available on www.medicines.org.uk

The European Society of Cardiology have produced a useful practical guide on prescribing DOACs which gives useful information on the effect of drug to drug interactions and clinical factors on DOAC drug levels – see <https://academic.oup.com/eurheartj/article/39/16/1330/4942493>.

Effect	Interacting agent	Action
Increased bleeding risk	Verapamil	Reduce dose of dabigatran to 110 mg twice a day
Increased OAC exposure	Ciclosporin, dronedarone, erythromycin, ketoconazole	Reduce dose of edoxaban to 30 mg once a day if use cannot be avoided. Avoid combination with other OACs.
Increased OAC exposure	Itraconazole, voriconazole, posaconazole, clarithromycin, HIV protease inhibitors,	Avoid combination
Decreased OAC exposure	Rifampicin, phenytoin, carbamazepine, levetiracetam phenobarbitone, St John's Wort	Contraindicated with dabigatran and rivaroxaban (ref SPC) and combination best avoided with apixaban and edoxaban. Can use warfarin with initial closer INR monitoring.
Increased bleeding risk	Aspirin, clopidogrel, ticagrelor, prasugrel, dipyridamole, NSAIDs, SSRIs, SNRIs	Caution. Avoid antiplatelet unless there is a specific indication for use.
Theoretical increase in OAC exposure	Tacrolimus	Suggested that combination is avoided
Changes in bioavailability	Food	Rivaroxaban must be taken with food. Other OACS unaffected by timing of meals.

See also:

[Guideline 34FM Dabigatran: Guidance for Management of Overdose, Bleeding and Emergency/Elective Surgery](#)

[Guideline 240FM Rivaroxaban and Apixaban: Guidance for Management of Overdose, Bleeding and Emergency/Elective Surgery](#)

[Guideline 313FM Dabigatran, Rivaroxaban, Edoxaban and Apixaban for Non Valvular Atrial Fibrillation \(AF\)](#)

[Guideline 775FM Treatment of Atrial Fibrillation](#)

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