

# Atrial Fibrillation: Management

Tuesday 20<sup>th</sup> February 1pm

# Outline

- Introducing CESEL AF management guidance
  - Dr Mark Essop
- AF detect
  - Handheld MyDiagnostick devices- AF detection project SEL- Rachel Howatson
  - Diagnosis with 12 lead ECG- Dr John Whitaker
- AF protect
  - Rate or rhythm control- Dr John Whitaker
  - Initiation of anticoagulation- Victoria Collings
- AF perfect
  - Monitoring anticoagulation to ensure it is safe and effective- Victoria Collings
- Q&A

South East London Integrated Medicines Optimisation Committee (SEL IMOC)

# Direct Oral Anticoagulant (DOAC) Initiation and Monitoring Guidance for Non- Valvular Atrial Fibrillation (AF)

Please note that the initiation and monitoring recommendations in this document apply to patients with the atrial fibrillation (AF) indication and NOT for patients with deep vein thrombosis (DVT) or pulmonary embolism (PE) or other venous thromboembolism (VTE). The dosing recommendations and DOAC choice are different for VTE patients and this guidance should not be referred to for these patients.

Approval date: February 2024

Review date: February 2026 (or sooner if evidence or practice changes)

# Initiation of anticoagulation



# Assess risk of stroke: CHA<sub>2</sub>DS<sub>2</sub>VASC

Risk factor	Score
Congestive heart failure/LV dysfunction	1
Hypertension	1
Age ≥75	2
Diabetes mellitus	1
Stroke/TIA/thrombo-embolism	2
Vascular disease <sup>a</sup>	1
Age 65–74	1
Sex category (i.e. female sex)	1
<b>Maximum score</b>	<b>9</b>

(c) Adjusted stroke rate according to CHA<sub>2</sub>DS<sub>2</sub>-VASC score

CHA <sub>2</sub> DS <sub>2</sub> -VASC score	Patients (n=7329)	Adjusted stroke rate (%/year) <sup>b</sup>
0	1	0%
1	422	1.3%
2	1230	2.2%
3	1730	3.2%
4	1718	4.0%
5	1159	6.7%
6	679	9.8%
7	294	9.6%
8	82	6.7%
9	14	15.2%

Lip GYH et al. Chest 2010; 137;263-272.

# Assess risk of bleeding: HASBLED

Condition	Points
<b>H</b> - Hypertension	1
<b>A</b> - Abnormal renal or liver function (1 point each)	1 or 2
<b>S</b> - Stroke	1
<b>B</b> - Bleeding	1
<b>L</b> - Labile INRs	1
<b>E</b> - Elderly (> 65 years)	1
<b>D</b> - Drugs or alcohol (1 point each)	1 or 2

HAS-BLED score	Bleeds per 100 patient-years
0	1.13
1	1.02
2	1.88
3	3.74
4	8.70
5	12.5

## Assess risk of bleeding: ORBIT

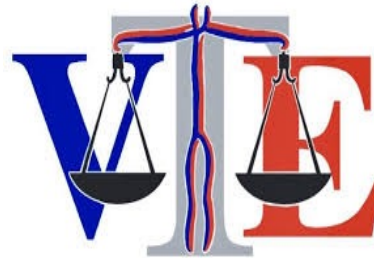
Clinical Characteristic	Score
Anaemia <130 for males and <120 for females	2
Age > 74 yrs	1
Bleeding history Any history of GI bleeding, intracranial bleeding, or haemorrhagic stroke	2
GFR < 60ml/min/1.73m <sup>2</sup>	1
Treatment with antiplatelets	1

- Low risk 0-2 (2.4% annual major bleed risk)
- Medium risk 3 (4.7 % annual major bleed risk)
- High risk 4-7 (8.1 % annual major bleed risk)

# When should anticoagulation be offered?

*Offer anticoagulation to people with a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 2 or above, taking bleeding risk into account*

*Consider anticoagulation for men with a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1, taking bleeding risk into account*



## **Absolute contraindications to anticoagulation:**

- Active serious bleeding (*where the source should be identified and treated*)
- Severe thrombocytopenia (*platelets < 50*)
- Severe anaemia under investigation
- Recent high risk bleeding event e.g. intracranial haemorrhage

# Before initiation or referral for anticoagulation

- Measure weight/height
- Baseline bloods: U&Es, FBC, LFT, clotting screen (HbA1c, TFTs, lipids)
- Consider modifiable risk factors for bleeding:
  - Deprescribing antiplatelets/NSAIDs
  - Optimise BP
  - Advise reduction in alcohol
  - Treat reversible causes of anaemia

*Anticoagulation can be initiated in primary care by suitably competent practitioners but there are also anticoagulation services to which patients can be referred to*



# Calculating renal function

DOAC doses change depending on renal function and weight

- Use Cockcroft-Gault to calculate CrCl using **actual body weight**
- If **>120kg** use **adjusted** body weight



<b>77</b> mL/min Creatinine clearance, original Cockcroft-Gault	<b>48</b> mL/min Creatinine clearance modified for overweight patient, using adjusted body weight of 82 kg (180 lbs).
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- Do **NOT** use eGFR may overestimate renal function
  - Do **NOT** ideal body weight may underestimating renal function
- incorrect dosing

## Creatinine Clearance (Cockcroft-Gault Equation) ☆

Calculates CrCl according to the Cockcroft-Gault equation.

### INSTRUCTIONS

For use in patients with stable renal function to estimate creatinine clearance.

When to Use	Pearls/Pitfalls	Why Use
Sex	Female	Male
Age		years
Weight	Norm: 1 - 150	kg ↕
Creatinine	Norm: 62 - 115	µmol/L ↕
The Cockcroft-Gault Equation may be inaccurate depending on a patient's body weight and BMI; by providing additional height, we can calculate BMI and provide a modified estimate and range.		
Height	Norm: 152 - 213	cm ↕

## Choice of anticoagulant

Many factors influence the choice of anticoagulant, and when to refer to an anticoagulation clinic

Contraindications to DOACs:

- Mechanical heart valve
- Transcatheter aortic valve implantation within last 3/12
- Mitral valve replacement or repair within last 3/12
- Known moderate to severe mitral stenosis (valvular AF)
- Triple positive antiphospholipid syndrome (APLS)
- CrCl < 15ml/min

## Other factors and choice of anticoagulant

- Arterial thrombus (unlicensed vascular indication)
- Pregnant/breastfeeding or planning a pregnancy
- Menorrhagia
- Known intolerance to anticoagulation
- History or risk of serious bleeding (e.g ICH, GI bleed, oesophageal varices)
- Hepatic disease associated with coagulopathy
- Thrombocytopenia
- Active or underlying cancer
- Extremes of weight < 50kg or > 150kg
- Concerns regarding absorption
- Complex drug interactions – commonly ARVs, anti-epileptic drugs
- Triple therapy with antiplatelets

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# Monitoring anticoagulation



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Excellence in  
anticoagulant care

# Dosing of DOACs in AF

	Dabigatran	Apixaban	Edoxaban	Rivaroxaban
Normal dose	150mg BD	5mg BD	60mg OD	20mg OD
Reduced dose	110mg BD	2.5mg BD	30mg OD	15mg OD
Criteria for dose reduction	<ul style="list-style-type: none"> <li>Age &gt; 80</li> <li>Verapamil</li> </ul> <p>Consider dose reduction:</p> <ul style="list-style-type: none"> <li>Reflux/gastritis</li> <li>Age &gt; 75</li> <li>CrCl 30-50ml/min</li> <li>"Bleed risk"</li> </ul>	<ul style="list-style-type: none"> <li>CrCL &lt; 30mLmin</li> <li>Two or more of:               <ul style="list-style-type: none"> <li>Age &gt; 80</li> <li>Weight &lt; 60kg</li> <li>Serum Cr &gt; 133µmol/L</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>CrCL &lt; 50ml/min</li> <li>Weight &lt; 60kg</li> <li>Ciclosporin, dronedarone, erythromycin, ketoconazole (strong Pgp inhib)</li> </ul>	<ul style="list-style-type: none"> <li>CrCL &lt; 50ml/min</li> </ul>
CI (renal)	CrCl < 30ml/min	----- CrCL < 15ml/min -----		

# DOAC monitoring

<b>First Review</b> (Ideally after 1 month of therapy)	<b>Then MINIMUM YEARLY review</b> (More frequent renal, liver and haemoglobin monitoring if CrCl <60ml/min, age over 75 years and/or frail- see table 6 below)
<ul style="list-style-type: none"> <li>- <b>Check for side effects</b> (<i>refer to SPC for each DOAC- table 4</i>) – seek advice and guidance from haematology clinic if present/a concern</li> <li>- <b>Check for bruising/bleeding</b> – refer for further investigation according to local pathways as indicated (<a href="#">see DOAC FAQ</a>. For more information)</li> <li>- <b>U&amp;Es and FBC</b>- as specified by initiating clinic/secondary care and/or if indicated by a change to clinical state</li> <li>- <b>Check CrCl</b> (and review DOAC dosing- <i>see table 4</i>)</li> <li>- <b>Check medication adherence</b>- refer to community pharmacist for NMS (New Medicines Service) and further support (refer to DOAC counselling checklist- <i>appendix 1</i>)</li> <li>- <b>Schedule repeat prescriptions and review</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Age</b> – check if DOAC dosage adjustment is required (<i>see table 4</i>)</li> <li>- <b>Weight</b> - check if DOAC dosage adjustment is required (<i>see table 4</i>)</li> <li>- <b>FBC</b> - investigate any Hb drop without an identifiable cause and if platelets &lt;100</li> <li>- <b>LFTs</b> – seek advice and guidance from haematology clinic if Bilirubin &gt;1.5 ULN, AST/ALT &gt;2 x ULN</li> <li>- <b>U&amp;Es and CrCL</b> (<i>as per table below</i>)- check if DOAC dosage adjustment is required.</li> <li>- <b>Interacting/new medications</b>- check if may effect DOAC dosing and set a review/course length date (seek advice from pharmacist as indicated)</li> </ul>

- Adherence
- Adverse effects
- (Re) Assess risk of stroke and bleeding

# Frequency of monitoring

**6** *Renal function monitoring frequency:* (see also guidance [Calculating Renal Function](#))

Creatinine Clearance (CrCl) range (ml/min)	How often to check renal function?
<15	<b>All DOACs contraindicated</b> , refer to specialist (to consider warfarin)
15 to 30	3 monthly, consider referral to specialist (dabigatran contraindicated)
30 to 60 and/or aged >75 years and/or frail±	6 monthly
All patients aged > 75 years and/or frail	4 to 6 monthly ±
>60	12 monthly

±EHRA/ESC 2018: 6 monthly renal, liver function (LFT) and haemoglobin (Hb) monitoring for elderly and frail patients

## What about switches?

- NHSE now recommend best value DOAC are:
  - Apixaban *generic* twice daily
  - Edoxaban once daily
- Switching for clinical reasons *only*
- Consider patient on VKAs if suitable, in collaboration with their warfarin clinic
  - Particularly if TTR is <65%



Guidance for the safe switching of patients on anticoagulants for non-valvular atrial fibrillation (NVAF) to the direct oral anticoagulant (DOAC) edoxaban in South East London (SEL)



## References

- South East London Integrated Medicines Optimisation Committee (SEL IMOC) guidance [SEL IMOC - Cardiovascular disease guidance - NHS South East London \(selondonics.org\)](https://selondonics.org/):
  - Direct Oral Anticoagulant (DOAC) Initiation and Monitoring Guidance for Non- Valvular Atrial Fibrillation (AF), February 2024
  - Direct Oral Anticoagulant (DOAC) Referral Pathway for Non-Valvular Atrial Fibrillation (NVAf) Patients In South East London (Secondary to Primary Care), January 2024
  - Calculating Renal Function (Creatinine Clearance) When Monitoring Direct Oral Anticoagulants (DOACs) For Safe and Effective Dosing Of Patients in Primary Care In All Indications, January 2024
  - Guidance for the safe switching of patients on anticoagulants for non-valvular atrial fibrillation (NVAf) to the direct oral anticoagulant (DOAC) edoxaban in South East London (SEL), October 2022
- NICE Guideline Atrial fibrillation: diagnosis and management Atrial fibrillation: diagnosis and management 2021 (nice.org.uk)
- EHRA DOAC Practical Guide Novel Oral Anticoagulants for Atrial Fibrillation, 2021 (escardio.org)