Clinical fact sheet: stroke prevention in non-valvular atrial fibrillation using CHA_2DS_2-VA score[1]

Non-valvular atrial fibrillation (AF) is AF in the absence of moderate to severe mitral stenosis or mechanical heart valve

Heart Foundation

Atrial fibrillation (AF) occurs in 2-4% of the population in developed nations like Australia. AF related stroke accounts for at least 25% of ischaemic stroke in Australia and is associated with significant mortality and disability.[2]

The basics of stroke prevention in AF:

- ✓ **Assess stroke risk using CHA_2DS_2-VA score**
- ✓ **Assess and correct reversible bleeding factors**
- ✓ **Shared decision making with patient to determine anticoagulation prescription**
- ✓ **Monitor therapy regularly**

1. Assess stroke risk using CHA_2DS_2-VA score

- Calculate the CHA_2DS_2-VA score
- Low-risk patients who are not anticoagulated should be re-evaluated using the CHA_2DS_2-VA score yearly
- Stroke risk factors may change over time due to aging or development of new co-morbidities

Definitions and points in the CHA_2DS_2-VA score

Score	Points	Definition
C	1	Congestive heart failure – recent signs, symptoms or admission for decompensated heart failure; this includes both HFrEF and HFpEF, or moderately to severely reduced systolic left ventricular function, whether or not there is a history of heart failure
H	1	History of Hypertension, whether or not BP is currently elevated
A_2	2	Age 75 years or more
D	1	Diabetes
S_2	2	History of prior Stroke or TIA or systemic thromboembolism
V	1	Vascular disease, defined as prior myocardial infarction or peripheral arterial disease or complex aortic atheroma or plaque on imaging (if performed)
A	1	Age 65–74 years

AF, atrial fibrillation; BP, blood pressure; HFpEF, heart failure with preserved ejection fraction; HFrEF, heart failure with reduced ejection fraction; TIA, transient ischaemic attack

Female sex is not included in the stroke risk prediction score in Australia because female sex alone or in the presence of one additional risk factor does not confer sufficient or consistent increased risk

2. Assess and correct reversible bleeding factors

- Reversible bleeding factors should be identified and corrected in AF patients for whom anticoagulation is indicated.
- Bleeding risk scores should not be used to avoid anticoagulation in patients with AF – net clinical benefit almost always favours stroke prevention over major bleeding.

Potentially modifiable bleeding risk factors include:

- Hypertension
- Frailty and falls
- Impaired renal or hepatic function
- Labile international normalised ratio (INR)
- Peptic ulceration
- Excess alcohol (>8 drinks/week)
- Anaemia
- Concomitant medications e.g. antiplatelet agents, non-steroidal anti-inflammatory drugs (NSAIDs)

References

1. Brieger D, et al. Heart, Lung and Circulation, 2018; 27(10): 1209-1266
2. Gattellari M, et al. Cerebrovascular Diseases, 2011; 32: 370-382
3. Gibson CM, et al. Am Heart J, 2015, 169 (4) 472-8.

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3. Shared decision making with patient to determine anticoagulation prescription

Oral anticoagulation (OAC) is recommended to prevent stroke and systemic embolism in patients with non-valvular AF based on CHA_2DS_2-VA score

- Non-vitamin K oral anticoagulants (NOACs; apixaban, dabigatran or rivaroxaban) are recommended in preference to warfarin)
  - If a patient is already on warfarin it is reasonable to change to NOAC, taking into consideration patient wishes
- Antiplatelet therapy is not recommended for stroke prevention regardless of stroke risk
- Decisions about OAC should be made with integrated care: multidisciplinary teams; patient-centred care with a focus on shared decision-making; and application of eHealth.

Why NOACs over warfarin?

- ✓ As good as or better than warfarin in reducing stroke and systemic embolism
- ✓ Lower risk of intracranial haemorrhage
- ✓ Easier for patients and physicians to use

CHA_2DS_2-VA score	Recommendation
≥ 2	OAC recommended
= 1	Consider OAC†
= 0	OAC not recommended

† Note PBS criteria for NOACs

Start/continue anticoagulation as above in*:

- Asymptomatic patients with AF detected on opportunistic screening
- Patients who have had catheter ablation or surgical ablation of AF
- Patients who have undergone cardioversion
- Patients who have atrial flutter

*see full guideline[1] for more details

NOAC for prevention of emboli in atrial fibrillation – dose adjustments in Australia

NOAC	Full dose	Dose reduction	Indications for dose reduction
Apixaban	5 mg bd	2.5 mg bd	At least two of the following: • aged 80 years or more • weight 60 kg or less • serum creatinine 133 micromol/L or more
Rivaroxaban	20 mg daily	15 mg daily	CrCl 30-49 mL/min **and/or** combination with DAPT[a,b]
Dabigatran	150 mg bd	110 mg bd	Aged 75 years or more **and/or** CrCl 30-50 mL/min **and/or** increased risk of major bleeding (e.g. combination with DAPT[a])

[a] If DAPT is required with anticoagulation and another indication(s) for dose reduction, consider using single antiplatelet therapy.
[b] In patients receiving rivaroxaban who require antiplatelet therapy following stenting, consider early de-escalation to single antiplatelet therapy plus oral anticoagulant[3]
bd, twice daily; CrCl, creatinine clearance; DAPT, dual antiplatelet therapy; NOAC, non-vitamin K oral anticoagulant

Special situations and the use of oral anticoagulants:

- If **antiplatelet agents are also indicated** (acute coronary syndrome and/or a stent in the last twelve months)
  - carefully assess the bleeding risks
  - minimise the duration of triple therapy
  - only use aspirin and clopidogrel if dual antiplatelet therapy is required
  - discontinue all antiplatelet therapy 12 months after acute coronary syndrome and/or stent implantation
- If **creatinine clearance is <30mL/min**, use warfarin

4. Monitor therapy regularly

- Monitor treatment adherence and persistence regularly using accessible and patient-centred strategies
- Monitor renal function for patients on NOACs

Approximately one-third to half of patients discontinue therapy within 2.5 years of initiation.

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