bpacnz
PRIMARY CARE
UPDATE SERIES

01

RE-THINKING THE MANAGEMENT OF ATRIAL FIBRILLATION

Welcome to the first video podcast in bpac[nz]'s new primary care update series, where we are aiming to outline the most recent perspectives on disease management for common conditions seen in primary care. Today, we will be discussing atrial fibrillation – or AF – and the need for a major shift in the way we approach treatment. For this, we're fortunate enough to be able to draw on the expertise of **Associate Professor Gerry Wilkins**, a specialist in interventional cardiology from the Southern DHB.

JUNE 2019
VER 2.3

Consider assessing people aged 65 years or older for AF

Aged 65–74 years? **1 in 20**

Over 75 years? **2 in 20**

Earlier assessments for AF should be considered in some groups, e.g. in Māori and Pacific peoples, where the average age of AF onset is **nine years younger** than in those of European descent (66 vs. 75 years)

AF, atrial fibrillation.

1 . Tomlin AM, Lloyd HS, Tilyard, MW. Eur J Prev Cardiol. 2017;24:311–9. doi: 10.1177/204748731667483.

2. Kirchhof P, Benussi S, Kotecha D, et al. Eur Heart J. 2016;37:2893–962. doi: 10.1093/eurheartj/ehw210.

Consider assessing people aged 65 years or older for AF

AF pattern	Definition
First diagnosed AF	AF that has not been diagnosed before, regardless of the severity of symptoms
Paroxysmal AF	AF that lasts **less than seven days** (although often less than 48 hours) and resolves spontaneously
Persistent AF	AF that lasts **more than seven days** that does not spontaneously resolve within this time
Permanent AF	AF that has been present for **more than one year** and cardioversion has failed or not been attempted

5x

increase in the risk of stroke with AF versus **without AF**

Regardless of the underlying pattern of AF

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Consider assessing people aged 65 years or older for AF

Older people often exhibit some form of mild arrhythmia

- This can make it difficult to distinguish true AF; you do not want to unnecessarily treat people
- Many people are asymptomatic (“silent” AF) prior to a stroke
- Pulse palpation is often sufficient to detect an arrhythmia; then confirm AF with an ECG

Criteria for diagnosing AF

- Diagnosis requires rhythm documentation with an **ECG**
- The typical pattern of AF **involves irregularly irregular RR intervals** and **no discernible, distinct P waves**
- Episodes must last at **least 30 seconds**

AF, atrial fibrillation; ECG, electrocardiogram.

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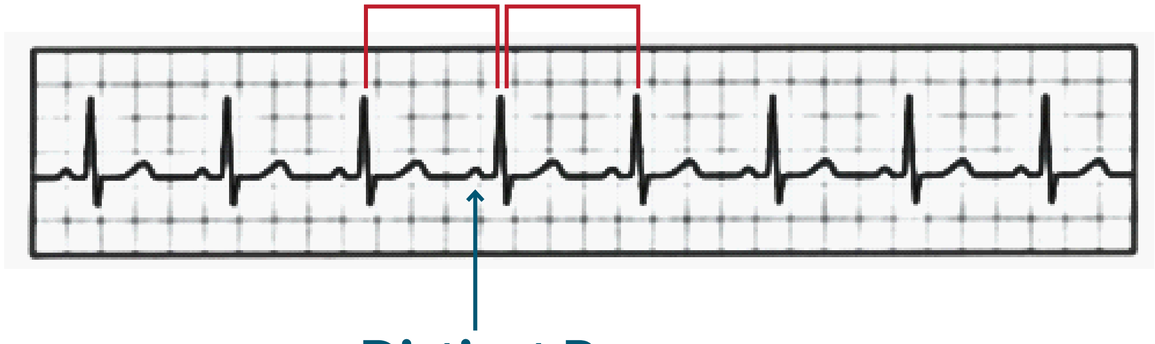
Consider assessing people aged 65 years or older for AF

Normal heart rhythm

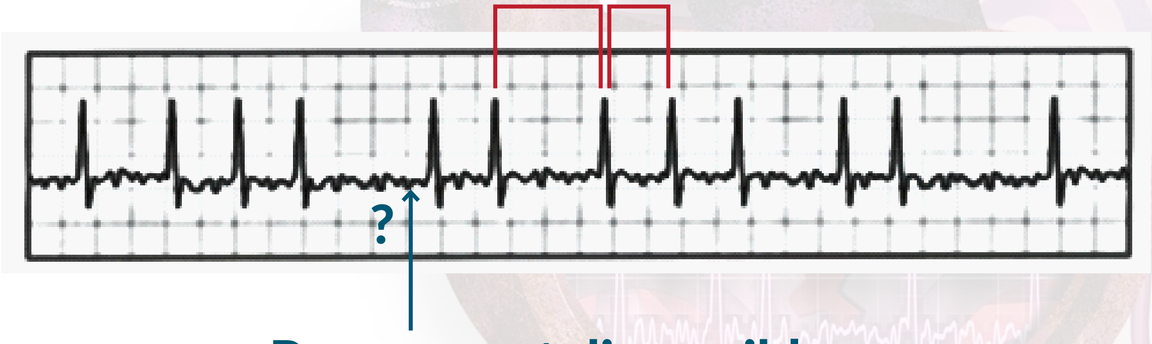
Regular RR intervals



Distinct P waves

Heart rhythm in AF*

Irregular RR intervals



P waves not discernible

* Given that AF is characterised by “irregularity”, this should only be taken as an example of an AF ECG, not a template to compare against.

AF, atrial fibrillation; ECG, electrocardiogram.

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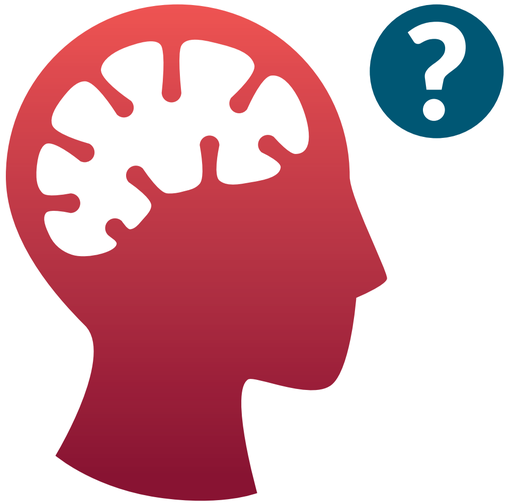
How should AF be treated?



A common misconception is that the initial management of AF is always an emergency situation

- Many clinicians immediately focus on the need for restoring normal sinus rhythm within a 48-hour window using electrical cardioversion and do not initiate anticoagulation first
- Hesitancy regarding anticoagulation may relate to ingrained perceptions associated with warfarin, which requires intensive monitoring and can have unfavourable adverse effects

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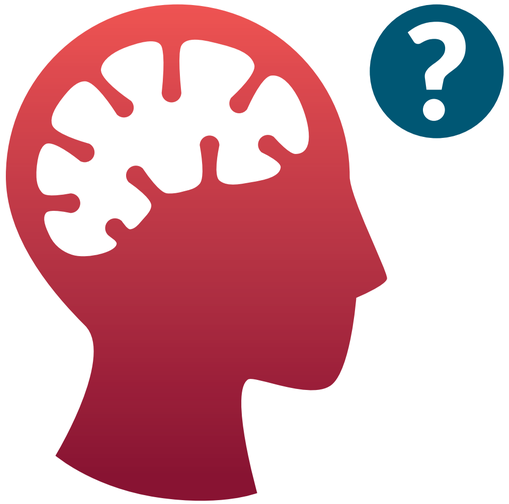
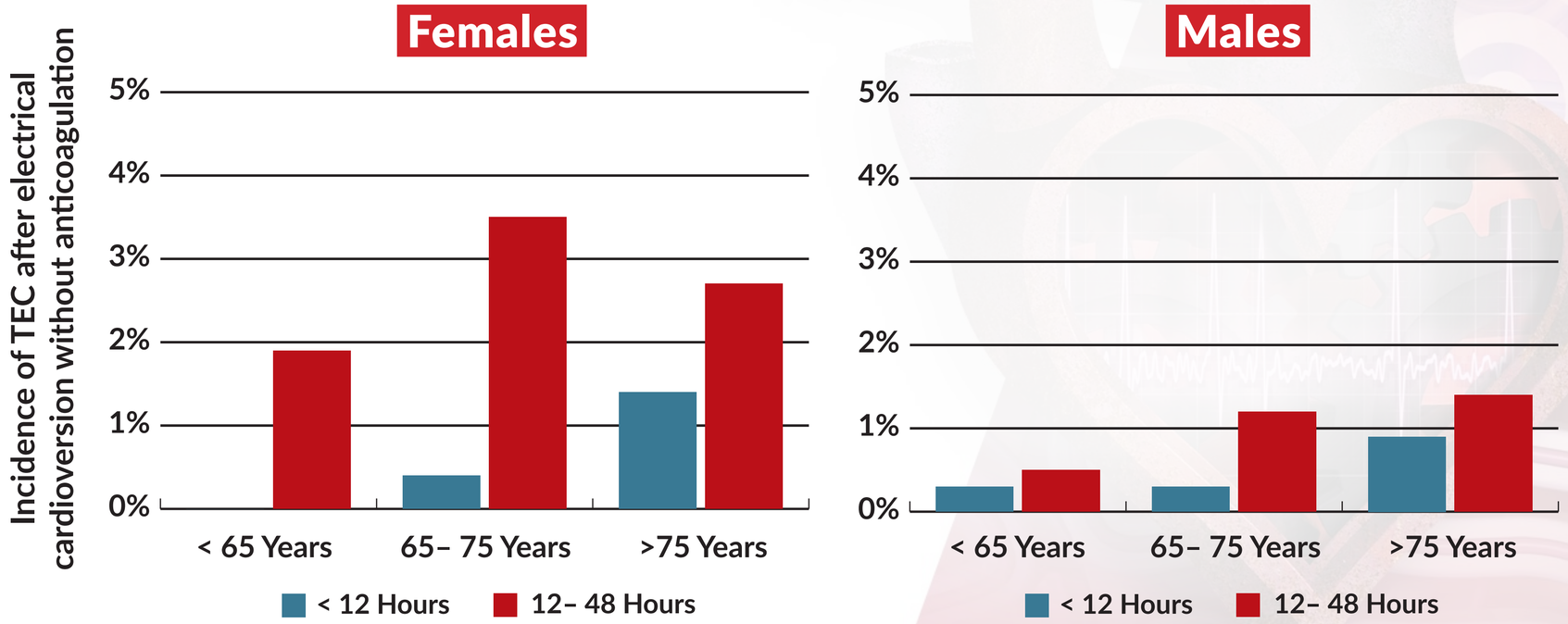
2. Bah A, Nuotio I, Grönberg T, et al. Ann Med. 2017;49:254-59. doi: 10.1080/07853890.2016.1267869.

How should AF be treated?



Recent evidence suggests that electrical cardioversion without anticoagulation after more than 12 hours significantly increases the risk of thromboembolic complications (TEC)*; an **even tighter window than the 48-hours previously thought**



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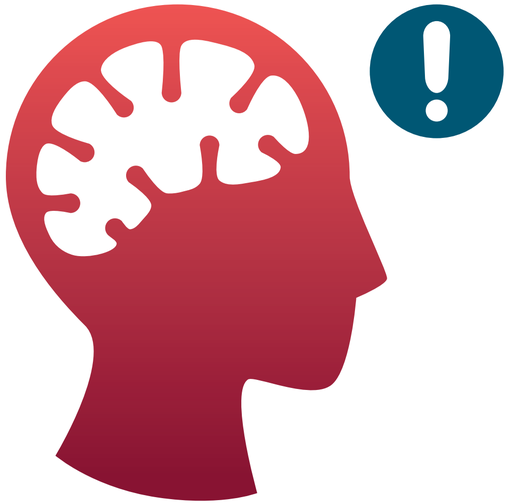
* Particularly in women.

How should AF be treated?



Best practice: treatment for AF should be progressive and tailored to your patient

- ✔ All patients that meet the clinical threshold should receive oral anticoagulation early to reduce stroke risk
- ✔ DOACs, e.g. dabigatran and rivaroxaban, should be favoured over warfarin if there are no contraindications
- ✔ For many patients with AF, rate control and anticoagulation are sufficient to control symptoms and reduce the risk of stroke; there is often no need to use electrical cardioversion unless the patient is haemodynamically unstable

Providing anticoagulation plus rate control medicines over 3–4 weeks prior to considering cardioversion may give patients the opportunity to self-correct, thereby avoiding the potential risks associated with rhythm control strategies.

AF, atrial fibrillation; DOAC, direct oral anticoagulant (also known as novel oral anticoagulants).

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Anticoagulants are underused in New Zealand patients

In New Zealand, **94%** * of all patients with AF in primary care should be considered for anticoagulation, **however**

Only around **60%** of patients with AF at high risk of stroke **receive anticoagulants**

Patients with AF at high risk of stroke

* The remaining 6% of patients with AF in New Zealand primary care do not meet the CHA_2DS_2-VASc scoring threshold for anticoagulation based on stroke risk factors

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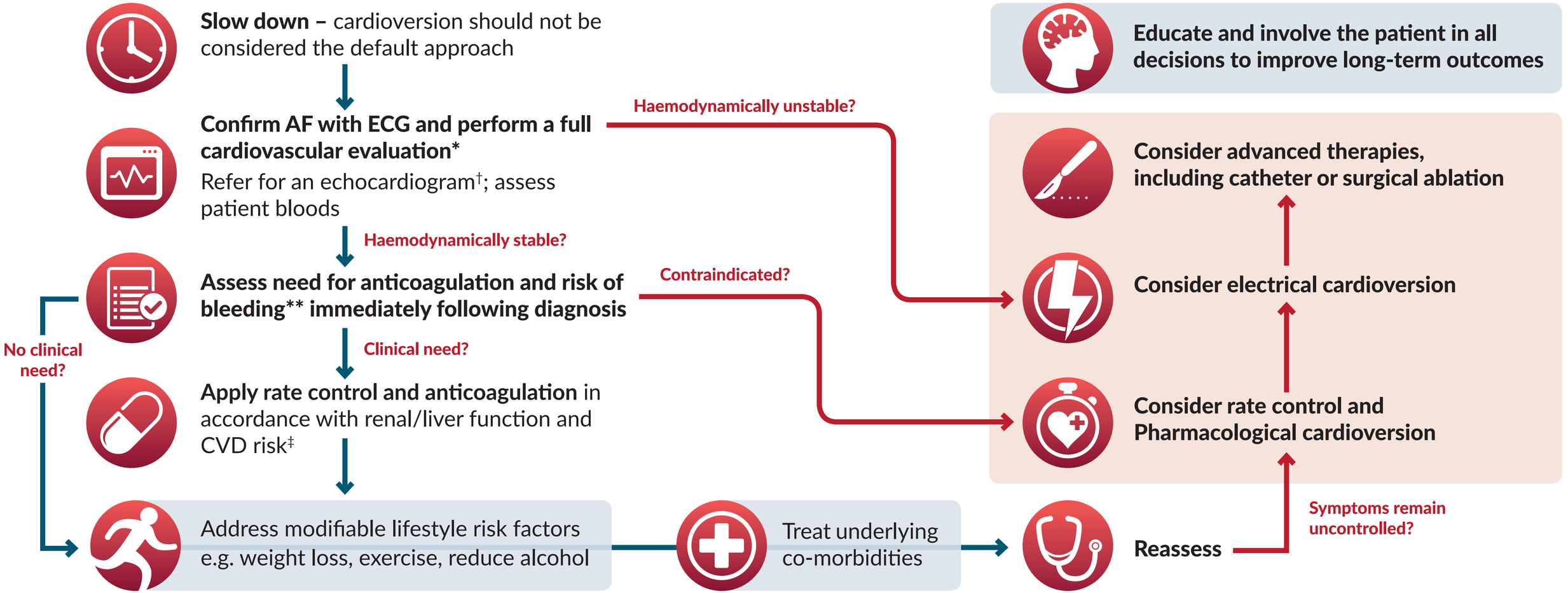
An individualised and progressive approach works best once AF is detected



AF, atrial fibrillation; CVD, cardiovascular disease; DOAC, direct oral anticoagulant; ECG, electrocardiogram

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* Including accurate history, clinical examination and assessment of concomitant conditions.

† Recommended to guide treatment decisions but should not delay intervention where a need is identified,

** Clinical need for anticoagulation should be assessed using the CHA_2DS_2-VASc score. To calculate the risk of bleeding, the HAS-BLED score should be used.

‡ Favour DOACs over warfarin if not contraindicated.

DOACs are the preferred oral anticoagulant option for AF

- Reduce stroke risk
- Superior to warfarin for preventing stroke and major/intracranial bleeding
- Rapid onset of action*
- Do not require routine anticoagulant monitoring, i.e. INR
- Fewer medicine- and food-interactions compared with warfarin

AF, atrial fibrillation; DOAC, direct oral anticoagulant; INR, international normalised ratio.

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2. NZ Formulary. NZF v82. 2019. Available from: www.nzf.org.nz (Accessed Apr, 2019)

* Time to onset of action for DOACs can be within 30 mins versus at least 48–72 h for warfarin

DOACs are the preferred oral anticoagulant option for AF

Compared with warfarin, DOACs† can reduce the risk of:

Stroke and systemic embolism by

35%

Intracranial bleeding by

58%

† Data based on the use of dabigatran 150 mg twice daily in the RE-LY trial (N=18,113). Rivaroxaban had a reduction of around 12.5% for stoke (equivalent to warfarin) and 34% for intracranial bleeding compared to warfarin in the ROCKET-AF trial (N=14,264)

AF, atrial fibrillation; DOAC, direct oral anticoagulant; INR, international normalised ratio.

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Prescribing DOACs in patients with AF

- ✔ AF diagnosis confirmed with ECG
- ✔ CHA_2DS_2-VASc score of ≥ 1 for men and ≥ 2 for women
- ✘ CrCl is < 30 mL/min
- ✘ High HAS-BLED score
- ✘ Planning or currently pregnant
- ✘ Prosthetic heart valve or moderate-to-severe mitral stenosis

For further information on CHA_2DS_2-VASc and HAS-BLED scoring, see the accompanying “GP tool” within this education series update

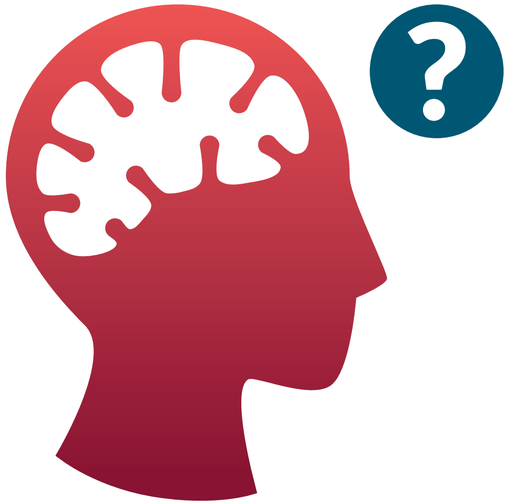
Do not use antiplatelet treatment such as aspirin for long-term stroke prevention in patients with AF

When should warfarin be used in patients with AF?

- If there are any of the above contraindications for DOACs*
- Patient preference, provided that stable INR measurements are able to be achieved

* Avoid any anticoagulation with warfarin during the first trimester (due to teratogenic effects) and in the 2–4 weeks preceding delivery to avoid fetal bleeding.

What about patients already receiving warfarin?



Although there are no recommendations in the guidelines – and while it may not seem ideal in stable patients with AF that have been on warfarin long-term – they should at least consider switching to a DOAC if they do not have contraindications

Switching from warfarin to DOACs

Stop warfarin and initiate the DOAC at the normal recommended dose after waiting for the patient's INR to be ≤ 2.0 for dabigatran or ≤ 3.0 for rivaroxaban

AF, atrial fibrillation; DOAC, direct oral anticoagulant; INR, international normalised ratio.

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What about patients already receiving warfarin?

Why? Compared with warfarin, DOACs* can reduce the risk of:

Stroke and systemic embolism by

35%

This is the primary aim of anticoagulation

Intracranial bleeding by

58%

This is the primary risk associated with anticoagulation

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Selecting the most appropriate DOAC for patients with AF

Dabigatran (subsidised)

- 150 mg twice daily
- Reduce dose to 110mg twice daily if CrCl 10–50 mL/min
- Reduce dose to 110 mg twice daily in patients older than 80 years or in those with multiple bleeding risk factors
- Reversible in secondary care (idarucizumab)

Rivaroxaban (subsidised)

- 20 mg (once daily – may facilitate adherence)
- Reduce dose to 15 mg if CrCl 30–49 mL/min
- May be preferred in patients with moderate renal dysfunction, or those with a history of dyspepsia
- Currently no specific reversal agent available in New Zealand

For further information on dabigatran and rivaroxaban see: "The safe and effective use of dabigatran and warfarin in primary care", **www.bpac.org.nz/2017/anticoagulants.aspx** and "Rivaroxaban: a fully-subsidised oral anticoagulant", **www.bpac.org.nz/2018/rivaroxaban.aspx**

For further information on managing bleeding with Dabigatran and Rivaroxaban see: "Guidelines for management of bleeding with dabigatran or rivaroxaban: for possible use in local management protocols", **www.bpac.org.nz/2018/bleeding-guidelines.aspx**

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Selecting the most appropriate DOAC for patients with AF

Apixaban (unsubsidised)

- 5 mg (twice daily)
- Reduce to 2.5 mg (twice daily) if at least two of:
  - Age ≥ 80 years or weight ≤ 60 kg
  - Serum creatinine ≥ 1.5 mg/dl (133 µmol/L) or CrCl 15–29 mL/min
- Contraindicated if CrCl <15 mL/min
- Currently no specific reversal agent available in New Zealand

For further information on dabigatran and rivaroxaban see: “The safe and effective use of dabigatran and warfarin in primary care”, **www.bpac.org.nz/2017/anticoagulants.aspx** and “Rivaroxaban: a fully-subsidised oral anticoagulant”, **www.bpac.org.nz/2018/rivaroxaban.aspx**

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Rate control for patients with AF

- Get an echocardiogram early to inform treatment
- Target an initial resting heart rate of < 110 bpm*
- Beta-blockers are considered first-line for both acute and long-term rate control
- Combination therapy may be required if heart rate target is not achieved with monotherapy
- Consider the patient's LVEF and symptoms; this will inform drug choice and dosing

Patient condition	Monotherapy	Combination therapy
LVEF ≥ 40%	Beta-blocker (first-line)	Add digoxin
	Diltiazem	
	Verapamil	
	Digoxin**	Add beta-blocker, diltiazem or verapamil
Signs of congestive heart failure and LVEF < 40%	Beta blockers†	Add digoxin
	Digoxin**	Add beta-blocker†
Haemodynamic instability or severely reduced LVEF	Amiodarone	Add digoxin

* Lower targets of <80 or 90 bpm may be suitable for some patients, such as those with known left ventricular dysfunction

† Ensure beta-blocker is at the lowest possible dose for acute heart rate control

** Used infrequently for monotherapy in primary care due to its potential for medicine interactions, lack of effect on heart rate during physical activity and narrow therapeutic index.

AF, atrial fibrillation; bpm, beats per minute; LVEF, left ventricular ejection fraction.

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2. NZ Formulary. NZF v83. 2019. Available from: www.nzf.org.nz (Accessed May, 2019).

Rhythm control for patients with AF

Consider rate control first

Rhythm control is recommended in patients with AF who remain symptomatic despite rate control although it may be considered earlier in some patients*

Options include:

Pharmacological cardioversion (antiarrhythmic medicines, e.g. amiodarone, flecainide and sotalol)

- Medicine choice should take into account co-morbidities, CVD risk and potential for adverse effects

Electrical cardioversion

- Method of choice in severely haemodynamically compromised patients with new onset AF

Do not use rhythm control in patients with asymptomatic AF or permanent AF

In patients with AF at risk of stroke, effective anticoagulation is recommended before and after cardioversion

AF, atrial fibrillation; CVD, cardiovascular disease

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* Such as athletes. However, anticoagulation and rate control should still be applied where possible.

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Options

Pharmaco… …lecainide and sotal…

- Medici… …l potential for adv…

Electrical…

- Metho… …s with new onset A…

Still unstable? Consider referral for advanced procedures

- Catheter or surgical ablation may be considered in patients with symptomatic paroxysmal AF despite use of antiarrhythmic medicines to improve symptoms

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Treating AF in specific situations

Older age:

- Older patients with AF have a higher risk of stroke so may benefit more from oral anticoagulation
- Greater risk of multiple co-morbidities and impaired renal or hepatic function
  - Polypharmacy may be an issue, with an increased likelihood of drug interactions and adverse reactions

Physical activity:

- In general, physical activity improves CV health, reducing the risk of AF
  - However, long-term involvement in intensive exercise may increase the risk of AF in later life
- Avoid sports with frequent direct body contact when using oral anticoagulants
- Athletes often experience paroxysmal AF; catheter ablation may help prevent recurrent AF

AF, atrial fibrillation; CV, cardiovascular; DOAC, direct oral anticoagulant

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Treating AF in specific situations

Pregnancy:

- Treat women that are pregnant with AF as high-risk pregnancies
- Consider warfarin* for anticoagulation in patients who are pregnant at high stroke risk; not DOACs!
- Electrical cardioversion can be performed at all stages of pregnancy

Inherited cardiac conditions:

- Some inherited conditions may be associated with early-onset AF
- Treatment of the underlying condition is important for AF management, particularly in younger patients

* Avoid any anticoagulation with warfarin during the first trimester (due to teratogenic effects) and in the 2–4 weeks preceding delivery to avoid fetal bleeding. Low molecular weight heparin (enoxaparin) can be used.

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What are the treatment options for patients with AF?

Treatment	Medicine/option		Dose range	Notes
Lifestyle modifications	**Weight loss, exercise, alcohol reduction, smoking cessation**			Reduces symptoms and AF burden
Anticoagulation	**DOACs** (preferred)	Dabigatran	110–150 mg BD	DOACs preferred unless contraindicated Reversal now possible for dabigatran
		Rivaroxaban	20 mg OD	
	VKAs	Warfarin	1–10 mg OD (adjust dose based on INR)	
Rate control	**Beta-blockers** (preferred)	Bisoprolol*	1.25–20 mg OD	Rate control is preferred over rhythm control where possible; beta-blockers are the first-line rate control medicines; do not use sotalol for rate control Target HR should be < 110 bpm Only use CCBs in patients with an LVEF ≥ 40% Combination treatment may be needed if target HR is not met
		Metoprolol succinate	23.75–190 mg OD	
		Carvedilol*	3.125–50 mg BD	
	Rate limiting CCB	Diltiazem*†	60 mg TDS up to 360 mg max total daily dose (120–360 mg OD modified release*)	
		Verapamil**	40–120 mg TDS (120–480 mg OD modified release)	
	Cardiac glycosides	Digoxin (infrequently used for monotherapy)	0.75–1.5 mg over 24 h in divided doses (loading dose) 0.0625–0.25 mg OD (maintenance dose	
Rhythm control	**Pharmacological cardioversion** e.g. amiodarone, flecainide, sotalol			Indicated for symptomatic patients with AF • Better for paroxysmal versus persistent AF • Not used for permanent AF Anticoagulation is recommended before and after cardioversion
	Electrical cardioversion			
	Advanced procedures e.g. catheter or surgical ablation			

* Unapproved indication † caution should be taken if considering use alongside beta-blockers.
** Do not use alongside beta-blockers unless under specialist supervision.

AF, atrial fibrillation; BD, twice daily; bpm, beats per minute; CCB, calcium channel blocker; DOAC, direct oral anticoagulant; HR, heart rate; INR, international normalised ratio; LVEF, left ventricular ejection fraction; OD, once daily; TDS, three times daily; VKA, vitamin K antagonist.

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2. NZ Formulary. NZF v83. 2019. Available from: www.nzf.org.nz (Accessed May, 2019).

For further information on managing AF see: "An update on managing patients with atrial fibrillation ", **www.bpac.org.nz/2017/af.aspx**