# Anticoagulation guidelines for atrial fibrillation in adults

Atrial fibrillation is a common condition that increases the risk of stroke and other embolic events. Anticoagulation can reduce the risk of stroke by ⅔, but increases the risk of bleeding and therefore careful weighting of the risks and benefits in individual patients is required. Please note that guidelines are not rigid prescriptions for all patients and are simply there to guide and inform decision-making. By definition, following a guideline is never mandatory (Wikipedia).

This policy will focus on anticoagulation only, rather than the general management of patients with atrial fibrillation. These recommendations are based on the [ESC guidelines](http://www.escardio.org/guidelines-surveys/esc-guidelines/Pages/atrial-fibrillation.aspx) for the management of atrial fibrillation published in 2010 and the 2012 update.

1. In all patients with atrial fibrillation/flutter or paroxysmal atrial fibrillation/flutter (they should be treated the same) consideration should be given to anticoagulation.
2. The CHA2DS2-VASc score should be used to determine risk (table 1). Probably the best estimate of the annual risk over 10 years of an embolic event according to the score can be found in table 2. Note that heart failure refers to moderate to severe left ventricular systolic dysfunction, or recently decompensated heart failure requiring hospital admission, regardless of ejection fraction. Women who have no other risk factors (i.e. women who are < 65 years with lone AF) should also be regarded as truly low risk and treated as though they have a CHA2DS2-VASc score of 0.

**Table 1**

|  |  |  |
| --- | --- | --- |
|  | Risk factor | Score |
| C | Congestive heart failure/LV dysfunction1 | 1 |
| H | Hypertension | 1 |
| A2 | Age ≥ 75 | 2 |
| D | Diabetes mellitus | 1 |
| S2 | Stroke/TIA/Thromboembolism | 2 |
| V | Vascular disease2 | 1 |
| A | Age 65-74 | 1 |
| Sc | Sex category (i.e. Female) | 1 |
| 1 Mod-severe LV impairment or recent admission with decompensated heart failure, irrespective of ejection fraction |
| 2 Prior MI, peripheral arterial disease, aortic plaque |

**Table 2 (Olesen et al. BMJ. 2011; 342: d214)**

|  |  |
| --- | --- |
| CHA2DS2-VASc Score | Annual risk of event  |
| 0 | 0.66% |
| 1 | 1.45% |
| 2 | 2.92% |
| 3 | 4.28% |
| 4 | 6.46% |
| 5 | 9.97% |
| 6 | 12.52% |
| 7 | 13.96% |
| 8 | 14.10% |
| 9 | 15.89% |

1. Patients with a CHA2DS2-VASc score of ≥ 1 should be considered for oral anticoagulation (table 3). Some patients may not need anything. Aspirin is **not** recommended to prevent strokes in atrial fibrillation in the latest ESC guidelines, except where OAC cannot be used.

**Table 3**

|  |  |
| --- | --- |
| CHA2DS2-VASc score | Recommended therapy |
| ≥2 | Oral anticoagulation (OAC) |
| 1 | Either OAC or aspirin 75mg od; strongly preferred OAC |
| 0 | Either no therapy or aspirin 75mg od; preferred no therapy  |

1. If anticoagulation is recommended then there should be consideration as to whether there are relevant cautions or contra-indications. The HAS-BLED score should be calculated (Table 4) and if the score is ≥ 3 caution should be exercised, but a high HAS-BLED score alone is not a reason to deny people anticoagulation. One estimate of the annual risk of bleeding according to the HAS-BLED score can be found in table 5. Please remember that bleeding is not usually fatal and does not usually have long-term consequences, unlike stroke. It should also be noted that bleeding-risk calculators are not well validated and are based on relatively small numbers of events, however the HAS-BLED score appears to be the best there is at present. Age is not a contra-indication and neither are falls (Garwood and Corbett. Ann Pharmacother 2008;42:523-32), although the data from this last study are open to criticism, both for the complex statistical modelling and the fact it only considers subdural haematoma; an individualised decision is necessary. This guideline is not designed to list all cautions and contra-indications to anticoagulation. Correctable risk factors for bleeding should be addressed before commencing anticoagulation.

**Table 4**

|  |  |  |
| --- | --- | --- |
|  | Characteristic | Score |
| H | Hypertension1 | 1 |
| A | Abnormal renal2 / liver function3 (1 point each) | 1 or 2 |
| S | Stroke | 1 |
| B | Bleeding4 | 1 |
| L | Labile INRs5 | 2 |
| E | Elderly6 | 1 |
| D | Drugs7 or alcohol8 (1 point each) | 1 or 2 |
| 1 Systolic BP > 160mmHg |
| 2 Chronic dialysis, transplantation, Cr ≥ 200 μmol/l |
| 3 Bilirubin > 2x ULN + AST/ALT 3xULN |
| 4 Previous bleeding history and/or predisposition to bleeding |
| 5 TTR < 60% |
| 6 Age > 65 years |
| 7 Concomitant use of drugs such as aspirin, NSAIDS |
| 8 Alcohol consumption > 8u / week |

**Table 5**

|  |  |
| --- | --- |
| HAS-BLED Score | Risk of major bleed |
| 0 | 1.13% |
| 1 | 1.02% |
| 2 | 1.88% |
| 3 | 3.72% |
| 4 | 8.70% |
| ≥5 | 12.5% |

1. The new oral anticoagulants (Dabigatran, Rivaroxaban) should **not** be combined with aspirin or other anti-platelet agents. Warfarin **may** be combined with aspirin or other anti-platelets in particular circumstances. In patients taking aspirin for vascular disease, oral anticoagulants are an acceptable substitute. If a new anticoagulant is to be used in this situation then Rivaroxaban is preferred as there are concerns of a marginal increase in the rate of heart attack with Dabigatran.
	1. Discussion should take place with the stroke team for patients taking dual antiplatelet therapy to prevent stroke/TIA.
	2. Discussion should take place with the cardiologists for patients taking dual antiplatelet therapy to treat NSTEMIs and/or stents. **Dual antiplatelet therapy should never be stopped in a patient with a stent without prior discussion with a cardiologist.** In patients on single antiplatelet therapy with a stent in situ the antiplatelet agent should be continued alongside warfarin in all but exceptional cases.
2. Dabigatran and Rivaroxaban are new oral anticoagulants recommended for use in patients with **non-valvular** atrial fibrillation (i.e. patients without mitral stenosis or patients without moderate or greater mitral regurgitation). They are NICE approved (hyperlinks: [Dabigatran](http://publications.nice.org.uk/dabigatran-etexilate-for-the-prevention-of-stroke-and-systemic-embolism-in-atrial-fibrillation-ta249), [Rivaroxaban](http://publications.nice.org.uk/rivaroxaban-for-the-prevention-of-stroke-and-systemic-embolism-in-people-with-atrial-fibrillation-ta256)) and “green drugs” approved for use in Somerset. They do not need monitoring in the same way as warfarin. At baseline U&E and LFTs should be checked. U&Es should be checked every 6 months. Bloods may need to be repeated if the clinical situation changes.
3. They are approved for use if there is one or more of the following risk factors:
	1. Previous stroke, transient ischaemic attack or systemic embolism.
	2. Left ventricular ejection fraction below 40%.
	3. Symptomatic heart failure of New York Heart Association (NYHA) class 2 or above.
	4. Age 75 years or older.
	5. Age 65 years or older with one of the following: diabetes mellitus, coronary artery disease or hypertension.
4. Dabigatran is a twice-daily drug. There are two doses – 150mg bd and 110mg bd. The higher dose is more effective than warfarin at preventing stroke but has a similar risk of serious bleeding; the risk of intracranial bleeding is much lower. The lower dose is as effective as warfarin at preventing stroke but has a lower risk of bleeding. **We will generally cardiovert patients on Dabigatran.** Patients should be aware that there is more clinical experience with warfarin than Dabigatran in this situation. Patients should specifically sign to say that they have taken the drug for 4 consecutive weeks without missing a dose.
5. Complete information on Dabigatran can be found in the [SPC](http://www.medicines.org.uk/emc/medicine/24839/SPC/Pradaxa%2B150%2Bmg%2Bhard%2Bcapsules/). Patients should generally be given the higher dose. The lower dose should be used in those aged > 80, or taking verapamil. In those aged between 75-80, or at a higher risk of bleeding, or who have oesophagitis, gastritis or gastro-oesophageal reflux, or a creatinine clearance of 30-50 ml/min, the lower dose should be considered. Dabigatran should not be used in patients with a creatinine clearance of < 30 ml/min or in those with elevated liver enzymes (> 2x ULN) or in those with pre-existing clotting disorders.
6. Rivaroxaban is a once daily drug. There are two doses – 15mg and 20mg. It is as effective as warfarin at preventing stroke. There is a similar risk of serious bleeding; the risk of intracranial bleeding is much lower. **We will not generally cardiovert patients on Rivaroxaban.** If patients are to be cardioverted on Rivaroxaban, patients should be aware that there are no data to support the use of Rivaroxaban in this situation. Patients should specifically sign to say that they have taken the drug for 4 consecutive weeks without missing a dose.
7. Complete information on Rivaroxaban can be found in the [SPC](http://www.medicines.org.uk/EMC/medicine/25586/SPC/Xarelto%2B20mg%2Bfilm-coated%2Btablets/). Patients should generally be given the higher dose. The lower dose should be used in those with a creatinine clearance of between 30-49 ml/min. It may be used with caution in patients with a creatinine clearance of 15-30ml/min. Rivaroxaban is contra-indicated in patients with a creatinine clearance of < 15ml/min or in those with hepatic disease associated with a coagulopathy.