

**Canadian Cardiovascular Society**

**What's New in Antiarrhythmics  
Canadian Cardiovascular Society  
2010 Atrial Fibrillation Guidelines**

**Heather Kertland  
St Michael's Hospital  
University of Toronto**

# **A New Approach to Guideline Development & Evaluation**

## **GRADE**

**Grading of Recommendations, Assessment,  
Development and Evaluation**

# GRADE Approach

**Clear separation of 2 issues:**

**1. Four Categories of Quality of Evidence:**

∅ High, Moderate, Low or Very Low

**2. Strength of Recommendations: 2 Grades**

∅ Strong or Conditional (weak)

∅ Quality of evidence only one factor

# GRADE: Rating Quality of Evidence

Quality	Comments
<b>High</b>	Future research unlikely to change confidence in estimate of effect; e.g. multiple well designed, well conducted clinical trials.
<b>Moderate</b>	Further research likely to have an important impact on confidence in estimate of effect and may change the estimate e.g. limited clinical trials, inconsistency of results or study limitations.
<b>Low</b>	Further research very likely to have a significant impact in the estimate of effect and is likely to change the estimate e.g. small number of clinical studies or cohort observations.
<b>Very Low</b>	The estimate of effect is very uncertain; e.g. case studies; consensus opinion.

Modified with permission from: Guyatt GH, et al. BMJ 2008;336:926

# Factors Determining the Strength of the Recommendation

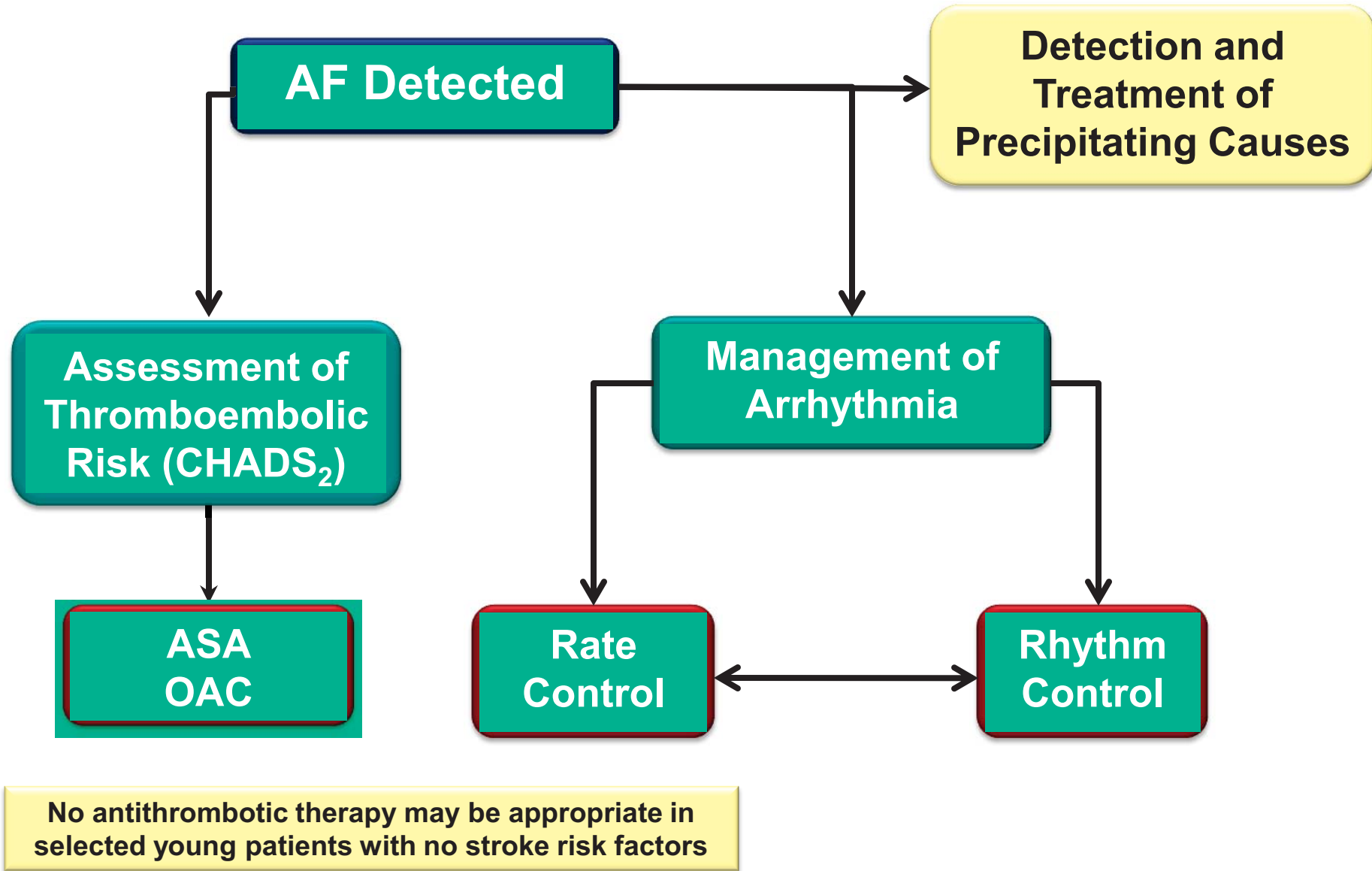
Factor	Comment
Quality of Evidence	The higher the quality of evidence the greater the probability that a strong recommendation is indicated. e.g. strong recommendation that patients with AF at moderate to high risk of stroke be treated with oral anticoagulants.
Difference between desirable and undesirable effects	The greater the difference between desirable and undesirable effects the greater the probability that a strong recommendation is indicated e.g. strong recommendation that patients with AF $\geq$ 48 hr duration receive oral anticoagulation therapy for at least 3 weeks prior to planned cardioversion and 4 weeks following.
Values and Preferences	The greater the variation or uncertainty in values and preferences, the higher the probability that a conditional recommendation is indicated e.g. ASA may be a reasonable alternative to oral anticoagulant therapy in patients at low risk of stroke.
Cost	The higher the cost the lower the likelihood that a strong recommendation is indicated e.g. conditional recommendation for catheter ablation as first line therapy for AF.

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<b>CCS SAF Score</b>	<b>Impact</b>	<b>EHRA Class</b>	<b>Impact</b>
<b>CCS SAF 0</b>	<b>Asymptomatic</b>	<b>EHRA I</b>	<b>No symptoms</b>
<b>CCS SAF 1</b>	<b>Minimal effect on QOL</b>	<b>EHRA II</b>	<b>Mild symptoms</b>
<b>CCS SAF 2</b>	<b>Modest effect on QOL</b>	<b>EHRA III</b>	<b>Severe symptoms; daily activity affected</b>
<b>CCS SAF 3</b>	<b>Moderate effect on QOL</b>	<b>EHRA IV</b>	<b>Disabling symptoms; Normal daily activity discontinued</b>
<b>CCS SAF 4</b>	<b>Severe effect on QOL</b>		

**Dorian et al Can J Cardiol 2006;22:383-386**

# Overview of AF Management



# Goals of AF Arrhythmia Management

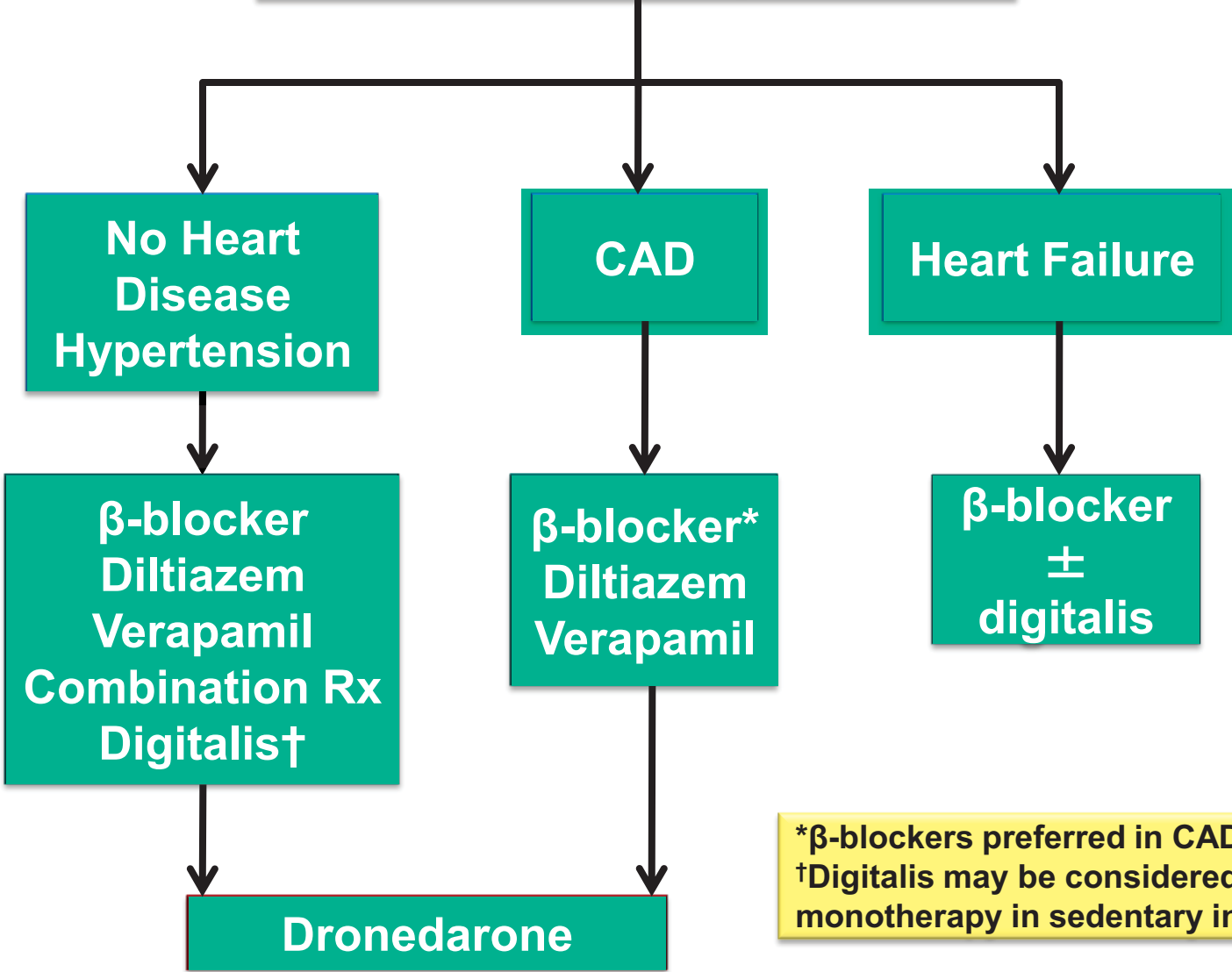
- **Identify and treat underlying structural heart disease and other predisposing conditions**
- **Relieve symptoms**
- **Improve functional capacity/quality of life**
- **Reduce morbidity/mortality associated with AF/AFL**
  - **Prevent tachycardia-induced cardiomyopathy**
  - **Reduce/prevent emergency room visits or hospitalizations secondary to AF/AFL**
  - **Prevent stroke or systemic thromboembolism**

# Factors Influencing Decision of Rate vs Rhythm Control

<b>Favours Rate Control</b>	<b>Favours Rhythm Control</b>
<b>Persistent AF</b>	<b>Paroxysmal AF</b>
	<b>Newly Detected AF</b>
<b>Less Symptomatic</b>	<b>More Symptomatic</b>
<b>&gt; 65 years of age</b>	<b>&lt; 65 years of age</b>
<b>Hypertension</b>	<b>No Hypertension</b>
<b>No History of Congestive Heart Failure</b>	<b>Congestive Heart Failure clearly exacerbated by AF</b>
<b>Previous Antiarrhythmic Drug Failure</b>	<b>No Previous Antiarrhythmic Drug Failure</b>

	<b>Recommendation</b>	<b>Strength /Class of Recommendation</b>	<b>Level or Quality of Evidence</b>
<b>2010 CCS Guidelines</b>	<b>We recommend that treatment for rate control of persistent/permanent AF or AFL should aim for a resting heart rate &lt; 100 bpm</b>	<b>Strong</b>	<b>High</b>
<b>2010 ESC Guidelines</b>	<b>Reasonable to initiate treatment with a lenient rate control protocol aimed at resting HR &lt;110 bpm. Reasonable to adopt a stricter rate control strategy when symptoms persist or tachycardiomyopathy occurs, despite lenient rate control: HR &lt;80</b>	<b>Ila</b>	<b>B</b>
<b>2010 ACCF/AHA/HRS Focused Update</b>	<b>Treatment to achieve strict rate control of heart rate is not beneficial compared to achieving a resting heart rate &lt; 110 bpm in patients with persistent AF who have stable ventricular function (LVEF &gt; 0.40) and no or acceptable symptoms related to AF</b>	<b>III – no benefit</b>	<b>B</b>
<b>2004 CCS Guidelines</b>	<b>HR &lt;80 bpm at rest and &lt;110 bpm during 6 min hallwalk</b>	<b>Ila</b>	<b>C</b>

# Rate Control Drug Choices



\*β-blockers preferred in CAD  
†Digitalis may be considered as monotherapy in sedentary individuals

# Ventricular Rate Control AV Junction Ablation

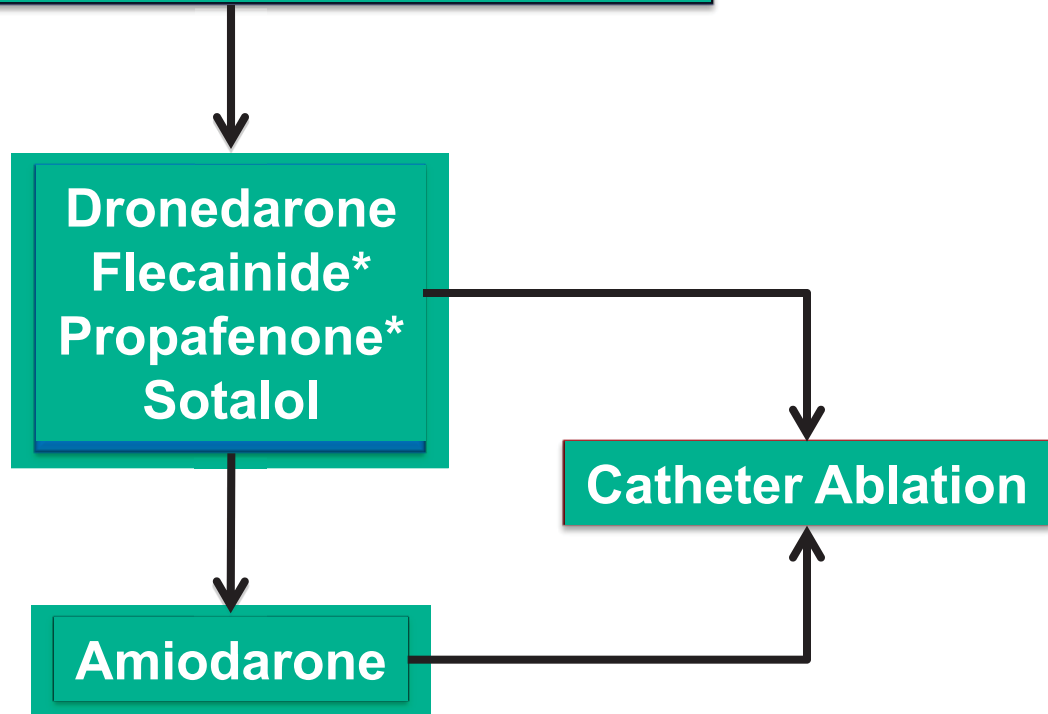
**We recommend AV junction ablation and implantation of a permanent pacemaker in symptomatic patients with uncontrolled ventricular rates during AF despite maximally tolerated combination pharmacologic therapy**

**Strong  
Recommendation  
Moderate Quality  
Evidence**

## ***Values and Preferences***

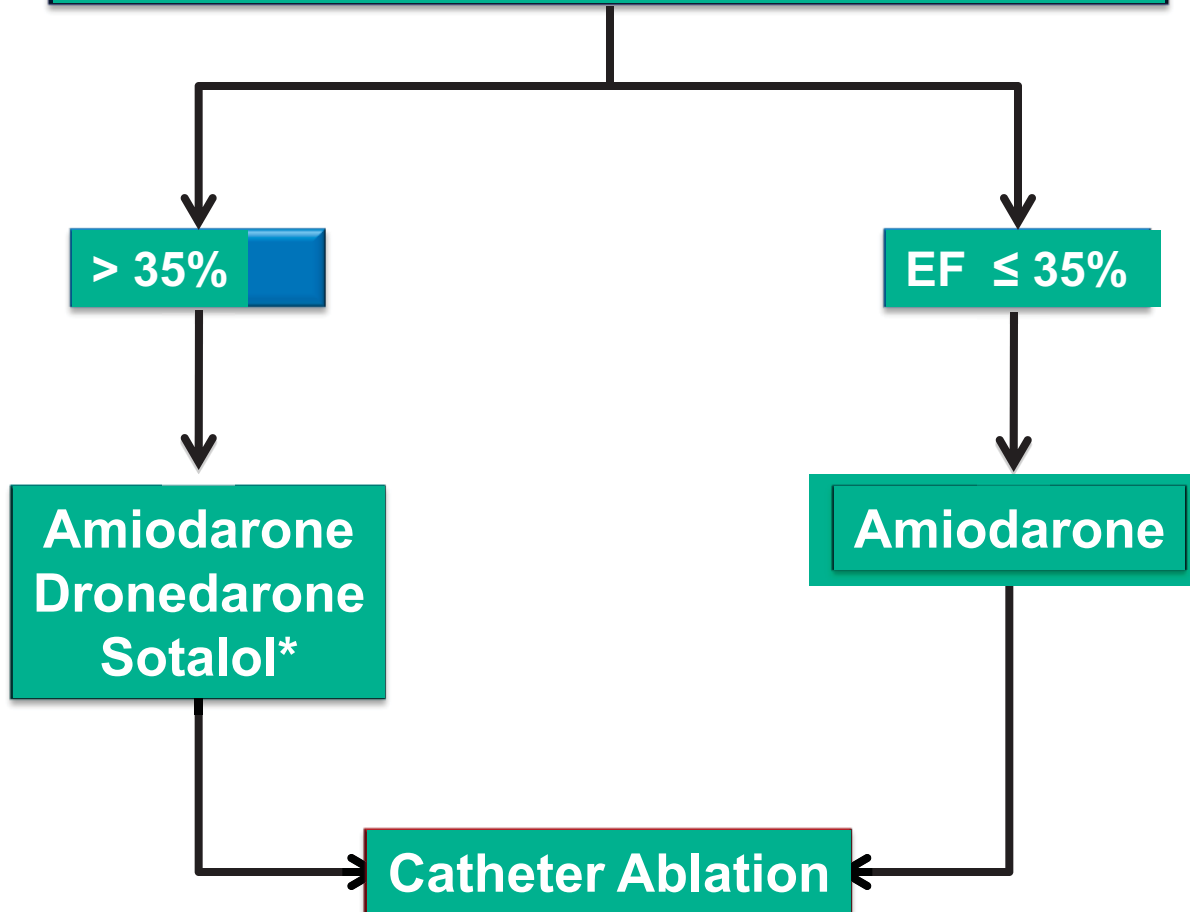
This recommendation places a high value on the results of many small randomized trials and one systematic review reporting significant improvements in quality of life and functional capacity as well as a decrease in hospitalizations for AF following AV junction ablation in highly symptomatic patients.

# Antiarrhythmic Drug Choices Normal Ventricular Function



\* Class I agents should be **AVOIDED** in CAD  
They should be combined with AV-nodal blocking agents  
Sotalol contraindicated in women >65 yrs taking diuretics  
Drugs listed in alphabetical order

# Antiarrhythmic Drug Choices Abnormal Left Ventricular Function



\* Sotalol should be used with caution with EF 35-40%  
Contraindicated in women >65 yrs taking diuretics

# Pill in the Pocket For Rhythm Control

**We recommend intermittent antiarrhythmic drug therapy ("pill in pocket") in symptomatic patients with infrequent, longer-lasting episodes of AF/AFL as an alternative to daily antiarrhythmic therapy.**

**Strong  
Recommendation  
Moderate Quality  
Evidence**

- **Single dose flecainide (200-300 mg) or propafenone (450-600 mg) as an oral dose**
- **Often prescribed with a short-acting beta-blocker at the same time (metoprolol 50-100 mg)**

## ***Values and preferences***

This recommendation places a high value on the results of clinical studies demonstrating the efficacy and safety of intermittent antiarrhythmic drug therapy in selected patients.

# Comparison of Guidelines for ablation

	CCS Guidelines		ESC Guidelines		ACCF/AHA/HRS	
	<u>Strength</u>	<u>Level of Evidence</u>	<u>Class</u>	<u>Level of Evidence</u>	<u>Class</u>	<u>Level of Evidence</u>
Paroxysmal*	Conditional	Moderate	IIa (Conditional)	A (High)	I (Strong)¶¶	A (High)
Persistent*	Conditional	Moderate	IIa (Conditional)	B (Moderate)	IIa (Conditional)	A (High)
Failed 1 drug	Conditional	Moderate	--	--	I (Strong)¶¶	A (High)
Failed ≥ 2 drugs	Strong	Moderate	--	--	--	--
1 <sup>st</sup> Line	Conditional	Low	IIb (Conditional)	B (Moderate)	--	--
PAF / sign. structural heart disease	--	--	--	--	IIb (Conditional)	A (High)

\* Applies to patients with symptomatic AF and failed at least one anti-arrhythmic drug.

¶¶ Dictates ablation performed in experienced centre in patient with minimal heart disease

-- Not directly addressed. Often this group is incorporated into other recommendations

# Pharmacologic Cardioversion

Drug	Dose	Efficacy	Risks
<b>Class 1A</b> Procainamide	15-17 mg/kg IV over 60 min	++	5% hypotension
<b>Class IC*</b> Propafenone Flecainide	450-600 mg PO 300-400 mg PO	+++ +++	Hypotension, 1:1 flutter, bradycardia Hypotension, 1:1 flutter, bradycardia
<b>Class III</b> Ibutilide	1-2 mg IV over 10-20 min Pre-treat with MgSO4 1-2 mg IV	++	2-3% Torsades de pointes

\*Class IC drugs should be used in combination with AV nodal blocking agents (beta-blockers or calcium-channel inhibitors). Class IC agents should also be avoided in patients with structural heart disease.

# Risk Stratification

## Stroke Prevention

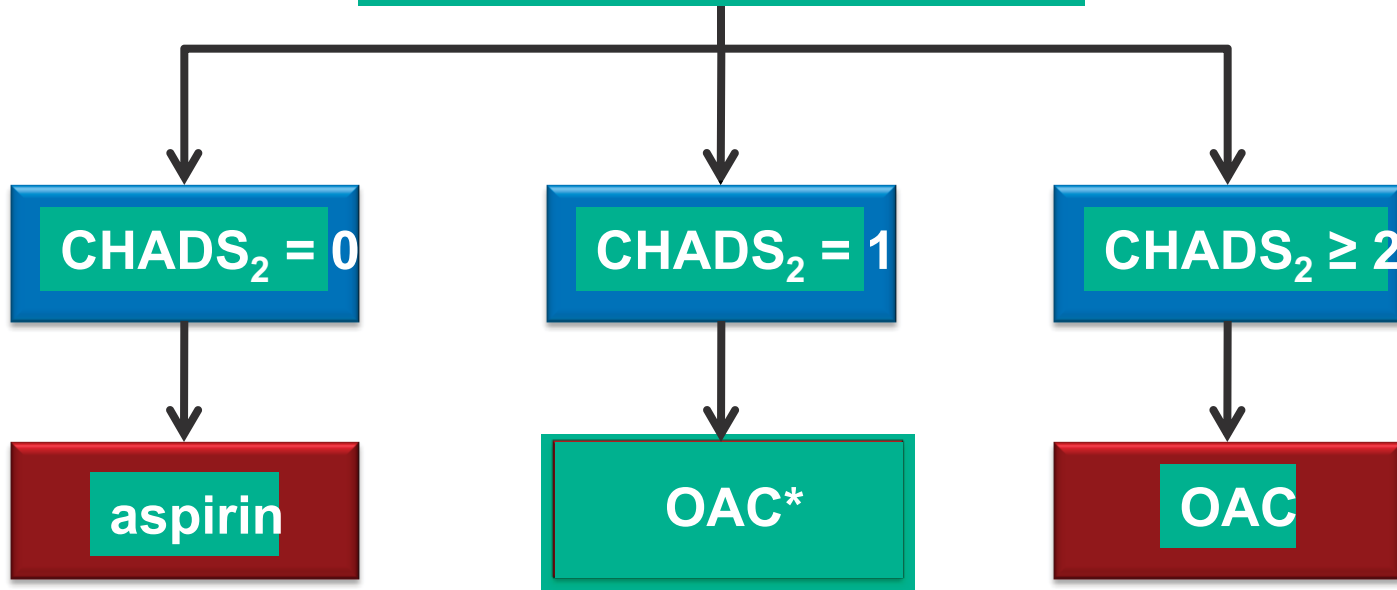
### Bleeding Risk

We recommend that all patients with AF or AFL (paroxysmal, persistent or permanent), should be stratified using a predictive index for stroke (e.g. CHADS<sub>2</sub>) and for the risk of bleeding (e.g. HAS-BLED), and that most patients should receive antithrombotic therapy.

Strong  
Recommendation  
High Quality  
Evidence

# Overview of Thromboembolic Management

Assess Thromboembolic Risk (CHADS<sub>2</sub>) and Bleeding Risk (HAS-BLED)



No antithrombotic may be appropriate in selected young patients with no stroke risk factors

\*Aspirin is a reasonable alternative in some as indicated by risk/benefit

Dabigatran is preferred OAC over warfarin in most patients.

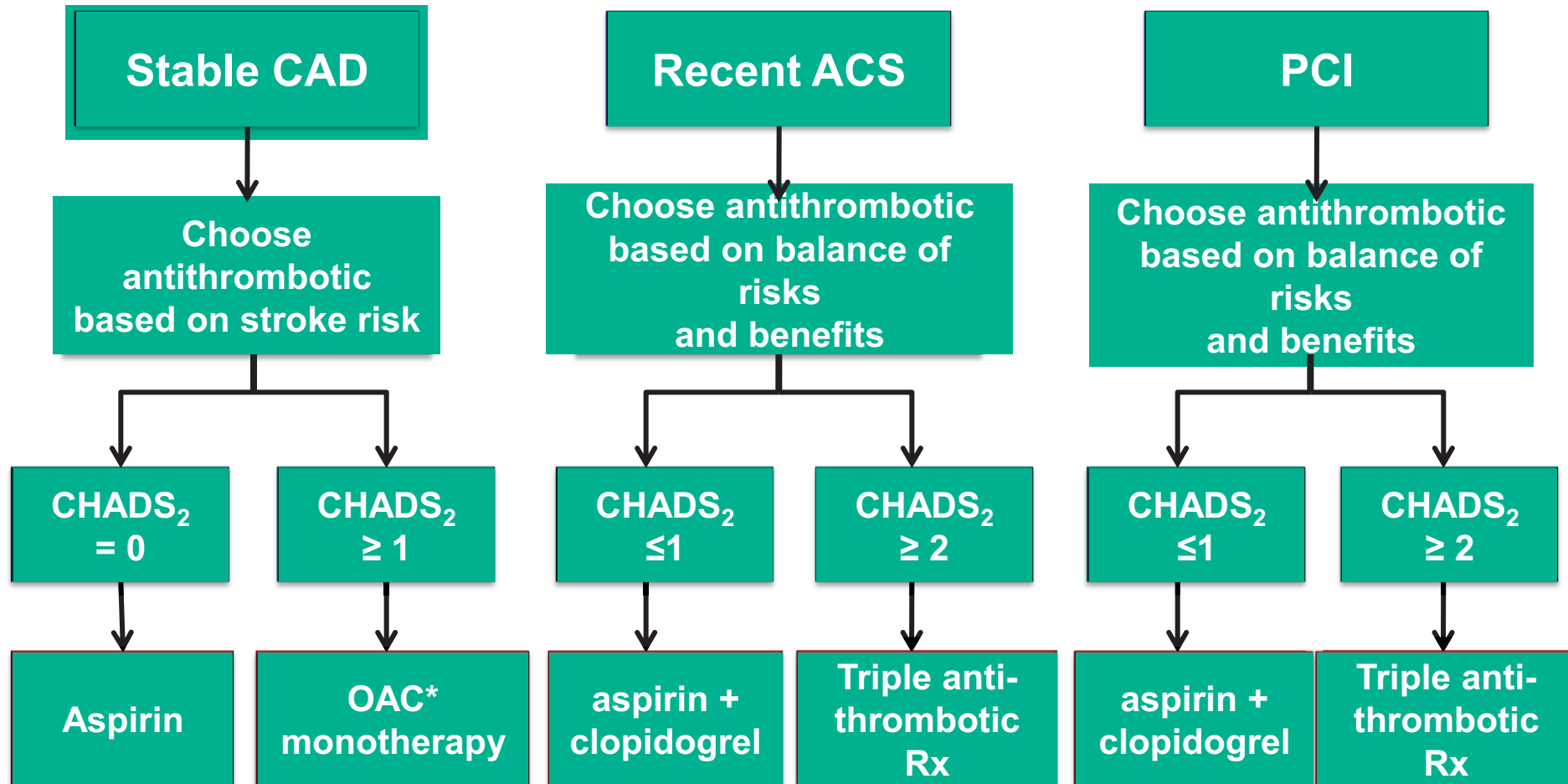
# Dabigatran vs Warfarin

We suggest, that when OAC therapy is indicated, most patients should receive dabigatran in preference to warfarin. In general, the dose of dabigatran 150 mg po bid is preferable to a dose of 110 mg po bid.

Conditional  
Recommendation  
High Quality  
Evidence

**Values and preferences:** This recommendation places a relatively high value on the greater efficacy of dabigatran over a relatively short time of follow-up, particularly among patients who have not previously received an oral anticoagulant, the lower incidence of intracranial hemorrhage and its ease of use, and less value on the long safety experience with warfarin.

# Antithrombotic Management of AF/AFL in CAD



\* Warfarin is preferred over dabigatran for patients at high risk of coronary events