

Canadian Cardiovascular Society

**Atrial Fibrillation Update:
Canadian Cardiovascular Society
2010 Atrial Fibrillation Guidelines**

Jennifer Pickering, BScPhm, ACPR
Pharmacist
Hamilton Health Sciences

A New Approach to Guideline Development & Evaluation

GRADE Approach

(Grading of Recommendations, Assessment, Development and Evaluation)

Clear separation of 2 issues:

1. Quality of Evidence: Four Categories

- High, Moderate, Low or Very Low

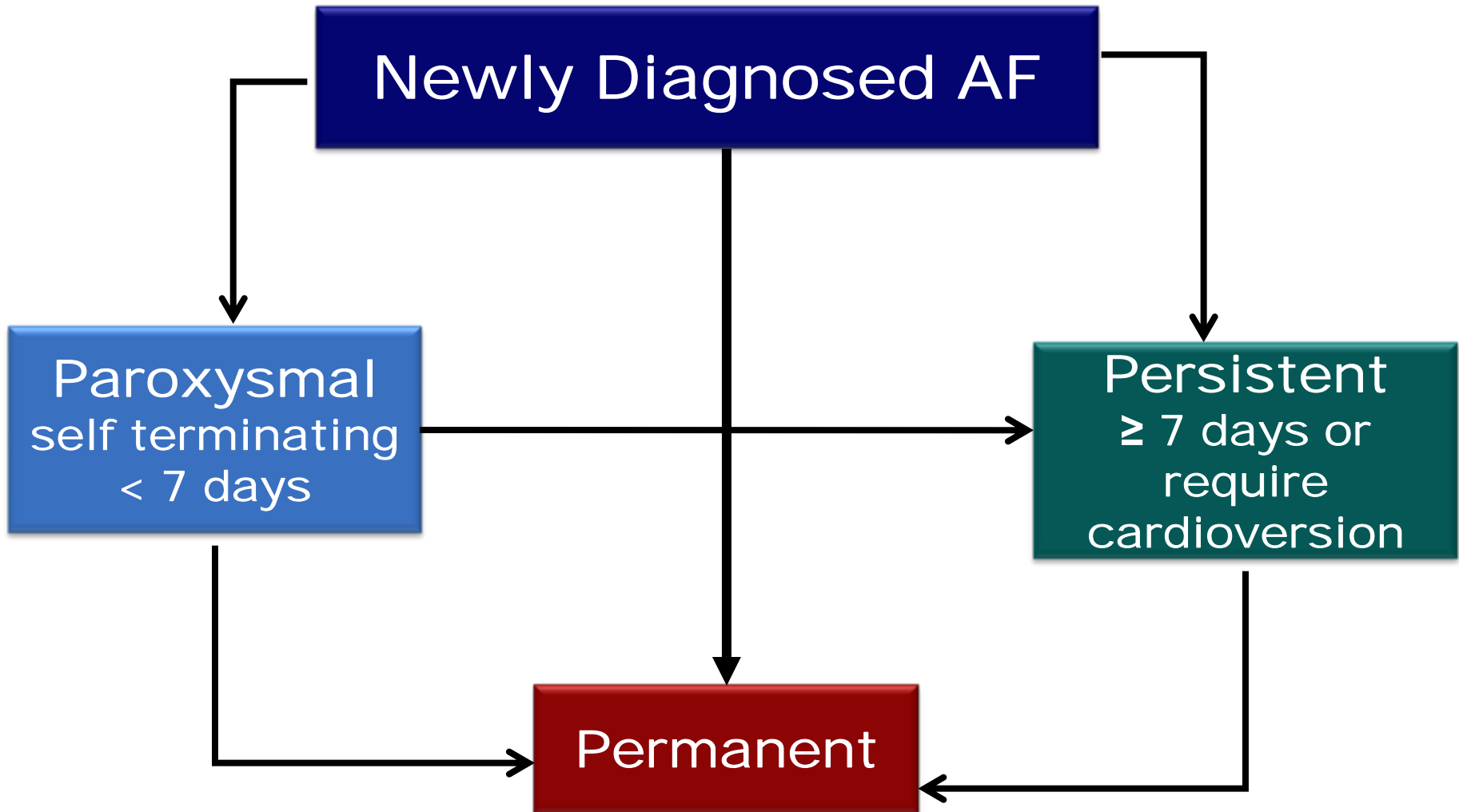
2. Strength of Recommendations: 2 Grades

- Strong or Conditional (weak)
 - Quality of evidence
 - Difference between desirable and undesirable effects
 - Values and preferences
 - Cost

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



Establish Pattern of Atrial Fibrillation



Modified with permission from Fuster et al *Circulation* 2006;114:e257-354.



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**



Establish AF Severity

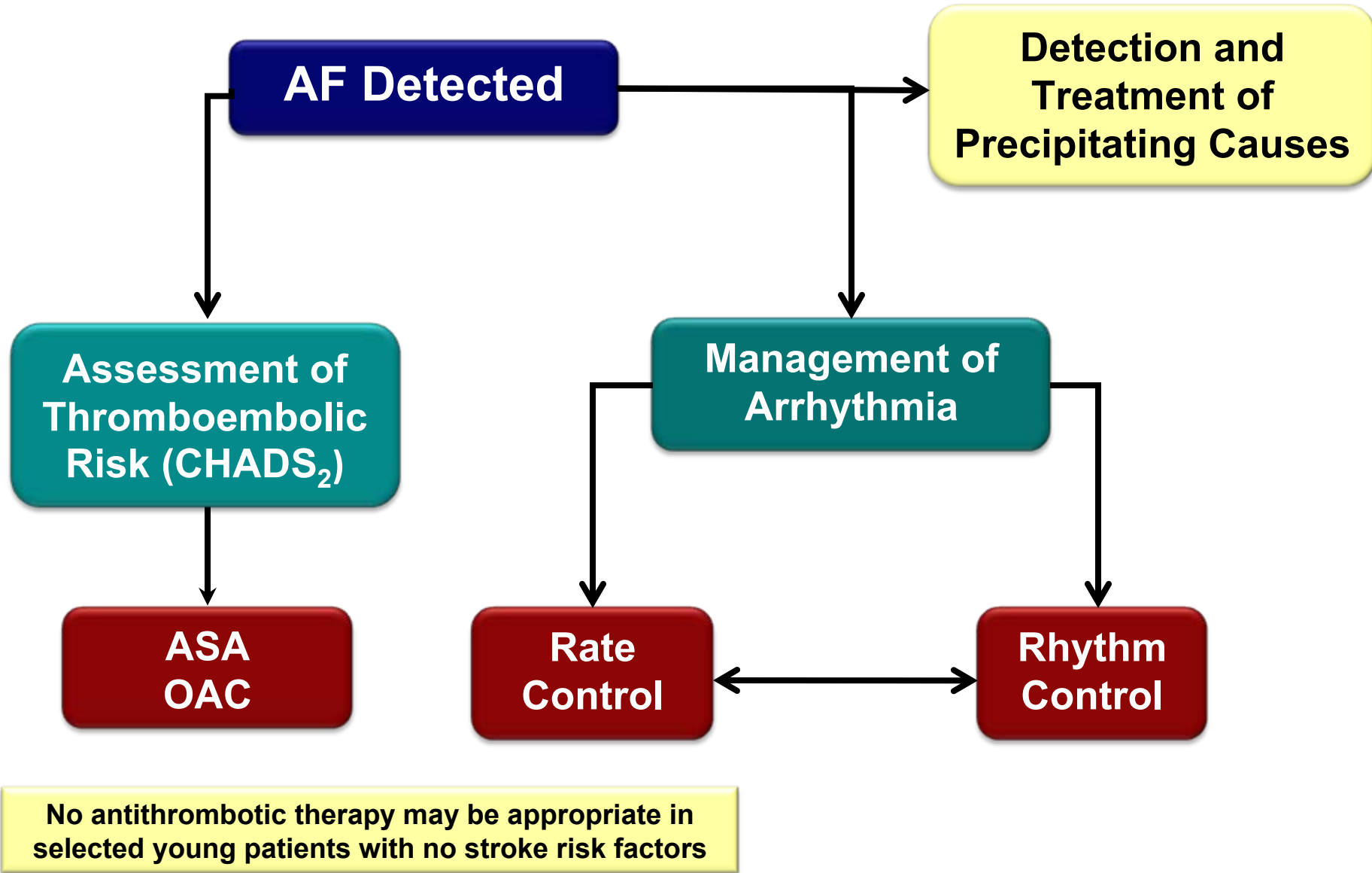
Use to Guide Therapeutic Approach

CCS SAF Score	Impact on QOL
0	Asymptomatic
1	Minimal effect on QOL
2	Minor effect of QOL
3	Moderate effect on QOL
4	Severe effect on QOL

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



Overview of AF Management



Ventricular Rate Control

We recommend that ventricular rate be assessed at rest in all patients with persistent and permanent AF/AFL.

**Strong
Recommendation
Moderate Quality
Evidence**

We recommend that heart rate during exercise be assessed in patients with persistent or permanent AF/AFL and associated exertional symptoms.

**Strong
Recommendation
Moderate Quality
Evidence**

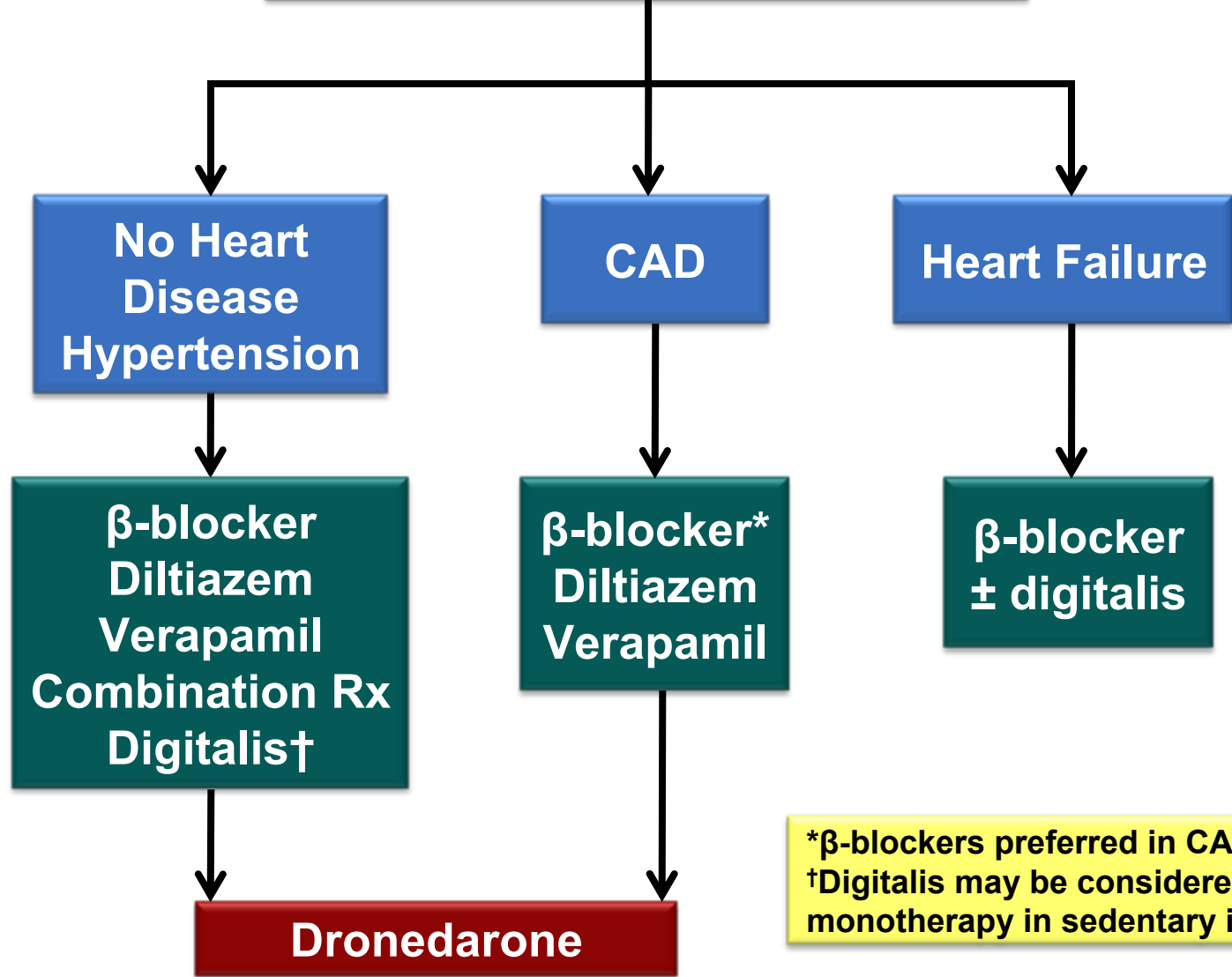
We recommend that treatment for rate control of persistent/permanent AF/AFL should aim for a resting heart rate of less than 100 beats per minute.

**Strong
Recommendation
High Quality
Evidence**

Values and Preferences

These recommendations place a high value on the randomized clinical trials and other clinical studies demonstrating that ventricular rate control of AF is an effective treatment approach for many patients with AF.

Rate Control Drug Choices



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



Ventricular Rate Control

We suggest that dronedarone may be added for additional rate control in patients with uncontrolled ventricular rates despite therapy with β -blockers, calcium channel blockers and/or digoxin.

**Conditional Recommendation
Moderate Quality Evidence**

We suggest that amiodarone for rate control should be reserved for exceptional cases in which other means are not feasible or are insufficient.

**Conditional Recommendation
Low Quality Evidence**

Values and Preferences

These recommendations recognize that selection of rate control therapy needs to be individualized based on the presence or absence of underlying structural heart disease, the activity level of the patient and other individual considerations.

Rhythm Control Recommendations

We recommend use of maintenance oral antiarrhythmic therapy as first-line therapy for patients with recurrent AF in whom long-term rhythm control is desired (see flow charts).

**Strong Recommendation
Moderate Quality Evidence**

We recommend that oral antiarrhythmic drug therapy should be avoided in patients with AF/AFL and advanced sinus or AV nodal disease unless the patient has a pacemaker/implantable defibrillator

**Strong Recommendation
Low Quality Evidence**

We recommend that an AV blocking agent should be used in patients with AF/AFL being treated with a class I antiarrhythmic drug (e.g. propafenone or flecainide) in the absence of advanced AV node disease.

**Strong Recommendation
Low Quality Evidence**

Values and preferences

These recommendations place a high value on the decision of individual patients to balance relief of symptoms and improvement in QOL and other clinical outcomes with the potential greater adverse effects of Class I/III antiarrhythmic drugs compared to rate control therapy.

Rhythm Control Strategy

We recommend the optimal treatment of precipitating or reversible predisposing conditions of AF prior to attempts to restore/maintain sinus rhythm.

**Strong Recommendation
Low Quality Evidence**

We recommend a rhythm control strategy for patients with AF/AFL who remain symptomatic with rate control therapy or in whom rate control therapy is unlikely to control symptoms.

**Strong Recommendation
Moderate Quality Evidence**

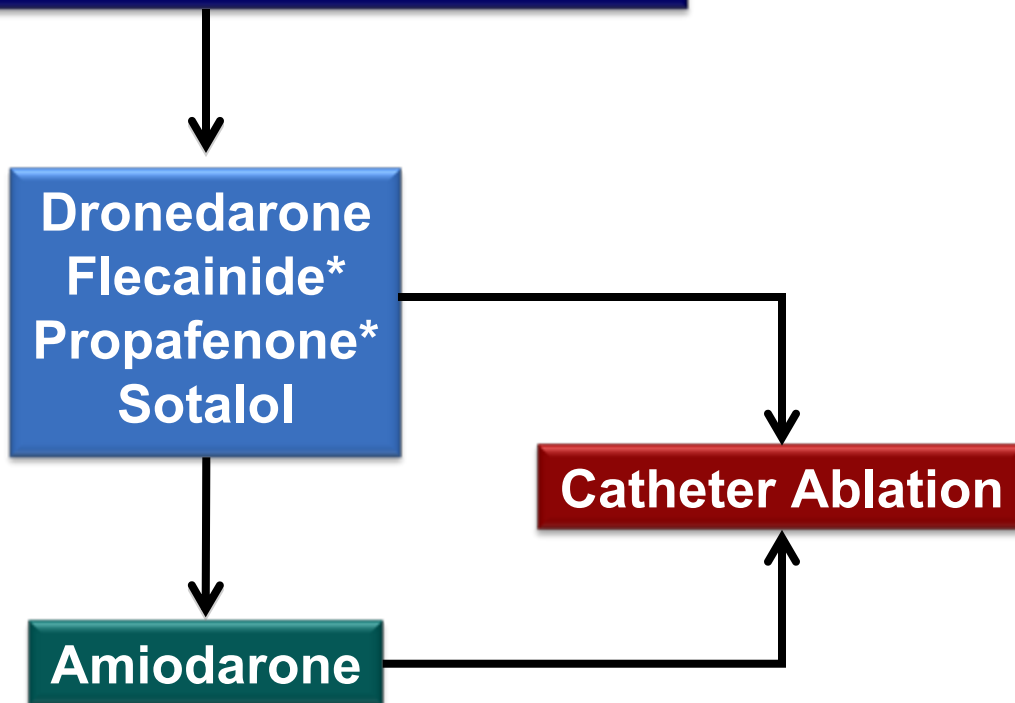
We recommend that the goal of rhythm control therapy should be improvement in patient symptoms and clinical outcomes, and not necessarily the elimination of all AF.

**Strong Recommendation
Moderate Quality Evidence**

Values and Preferences

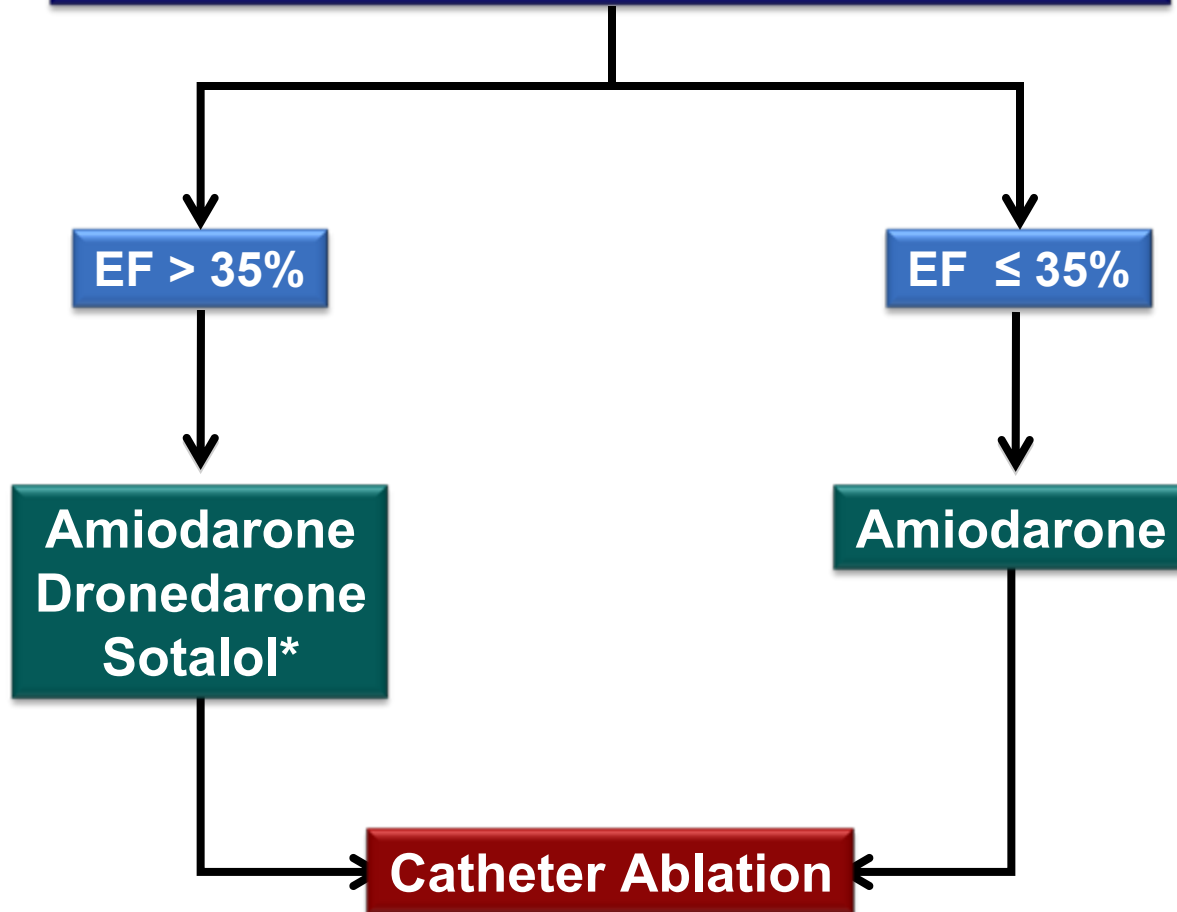
These recommendations place a high value on the decision of individual patients to balance relief of symptoms and improvement in QOL and other clinical outcomes with the potential greater adverse effects of the addition of Class I/III antiarrhythmic drugs to rate control therapy.

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 North American and European Guidelines Catheter 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 st 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



Rhythm Control Does Not Replace Anticoagulation

- **No evidence that AF reduction via antiarrhythmic therapy reduces the risk of stroke/thromboembolism**
- **Patients must continue on appropriate anticoagulation according to their individual embolic risk (CHADS₂ score)**



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. CHADS₂) and for the risk of bleeding (e.g. HAS-BLED), and that most patients should receive antithrombotic therapy.

**Strong
Recommendation
High Quality
Evidence**

Predictive Index for Stroke

CHADS₂

Risk Factor	Score
Congestive Heart Failure	1
Hypertension	1
Age ≥ 75	1
Diabetes Mellitus	1
Stroke/TIA/Thromboembolism	2
Maximum Score	6

Patients (n = 1733)	Adjusted Stroke Rate (%/yr) 95% CI	CHADS ₂ Score
120	1.9 (1.2 to 3.0)	0
463	2.8 (2.0 to 3.8)	1
523	4.0 (3.1 to 5.1)	2
337	5.9 (4.6 to 7.3)	3
220	8.5 (6.3 to 11.1)	4
65	12.5 (8.2 to 17.5)	5
5	18.2 (10.5 to 27.4)	6



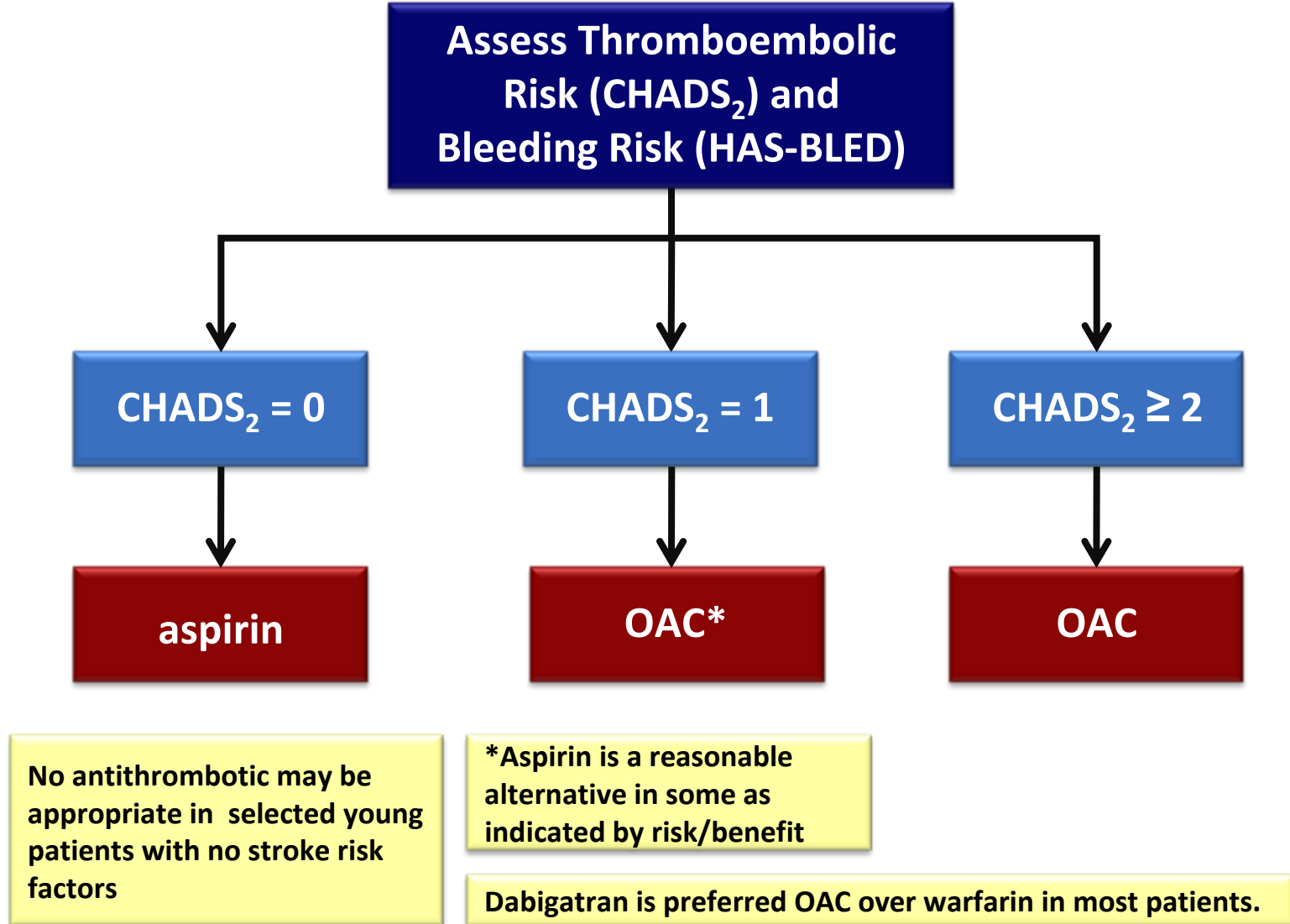
Bleeding Risk – HAS-BLED Score

Letter	Clinical Characteristic	Points
H	Hypertension	1
A	Abnormal Liver or Renal Function 1 point each	1 or 2
S	Stroke	1
B	Bleeding	1
L	Labile INRs	1
E	Elderly (age > 65 yr)	1
D	Drugs or Alcohol 1 point each	1 or 2
		Maximum 9 points

Pisters R et al. Chest. 2010 Nov;138:1093-100



Overview of Thromboembolic Management



Dabigatran vs Warfarin

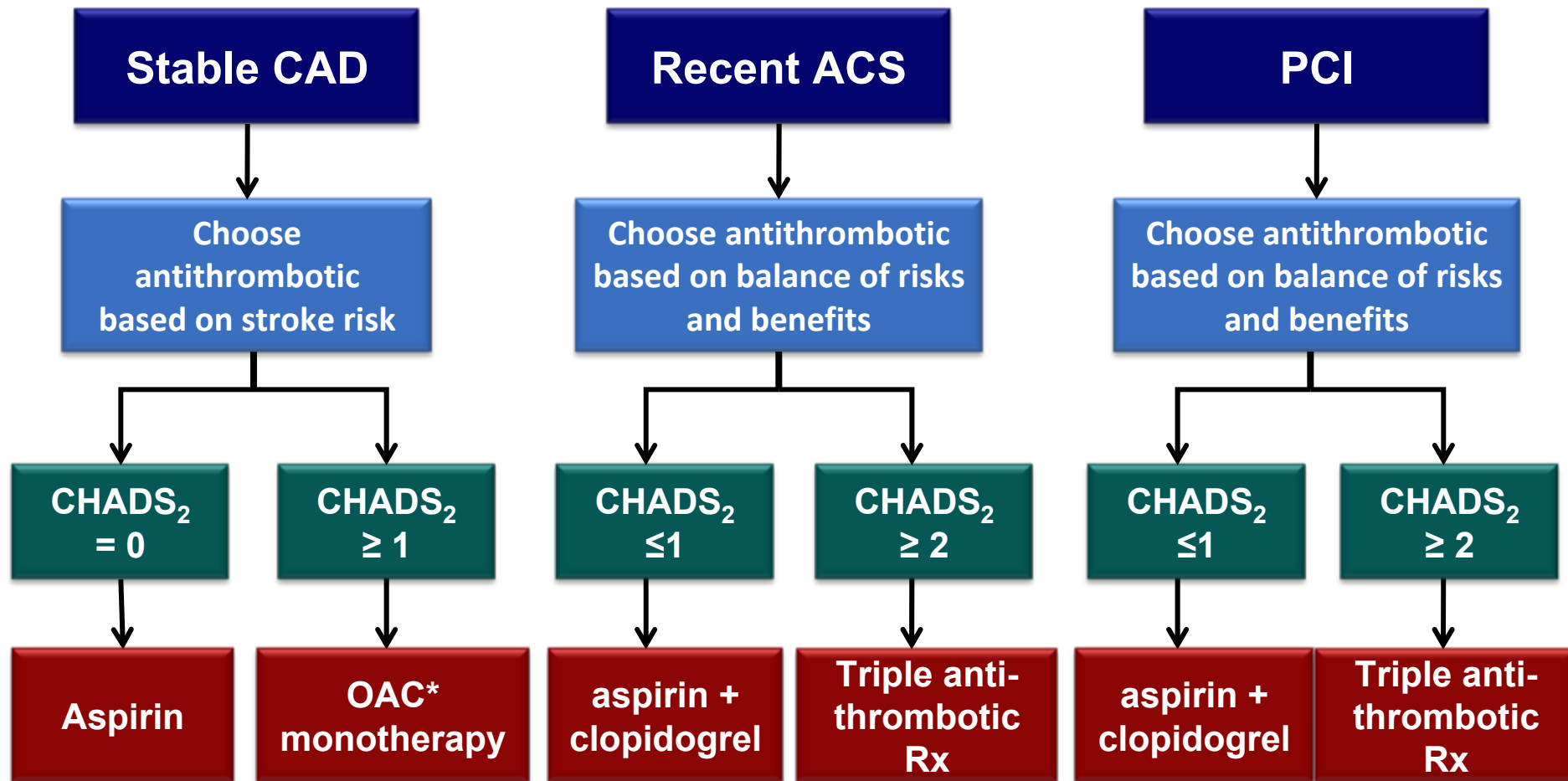
We suggest, that when OAC therapy is indicated, most patients should receive dabigatran in preference to warfarin. In general, the dose of dabigatran 150 mg po bid is preferable to a dose of 110 mg po bid.

**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

Since 2010 Guidelines:

- **Stroke prevention:**
 - **ROCKET** - rivaroxaban vs. warfarin
 - **AVERROES** – apixaban vs. ASA
 - **ARISTOTLE** – apixaban vs. warfarin
- **Rate and Rhythm Management:**
 - **PALLAS** – dronedarone trial stopped early secondary to increased CV events in permanent AF patients

Knowledge Translation Stroke Prevention in Atrial Fibrillation



CCPN RCPC

CANADIAN CARDIOVASCULAR
PHARMACISTS NETWORK
RÉSEAU CANADIEN DES PHARMACIENS
IMPLIQUÉS EN SOINS CARDIOVASCULAIRES

CCPN SPAF Tool

STROKE PREVENTION IN ATRIAL FIBRILLATION (SPAF): POCKET REFERENCE

Approximately 20% of all strokes are attributable to Atrial Fibrillation (AF).¹ Of these, 20% will result in death and 60% will result in disability. Given this, it is important to ensure appropriate antithrombotic therapy for those at risk for cardioembolic stroke.

This pocket reference summarizes the therapeutic options for the prevention of stroke in patients with non-valvular AF. It does not address patients with rheumatic heart disease or patients with transient, self-limited AF associated with an acute illness or secondary cause. It is intended only as a general reference to supplement the existing knowledge of healthcare professionals and is NOT a substitute for the sound clinical judgement of the knowledgeable healthcare professional. The authors, editors, or CCPN cannot be held responsible for any harm, direct or indirect, caused as a result of the application of the information contained in this resource.