ANTIARRHYTHMIC DRUG THERAPY IN ATRIAL FIBRILLATION

PRASAD PALAKURTHY M.D, FACC,FHRS
DISCLOSURE

Dr. Palakurthy indicated he has no financial relationships to disclose relevant to the content of this CME activity.
ATRIAL FIBRILLATION

• PRESENTATION
• NEW ONSET OF ATRIAL FIBRILLATION
• PAROXYSMAL OR PERSISTENT ATRIAL FIBRILLATION
• CHRONIC OR PERMANENT
NEW ONSET OF ATRIAL FIBRILLATION

- EVALUATION OF UNDERLYING CAUSE
- HEART FAILURE
- PULMONARY CAUSES
- HYPERTHYROIDISM
- POORLY CONTROLLED HIGH BLOOD PRESSURE
- OTHER CARDIAC CAUSES
INDICATIONS FOR EMERGENCY CARDIOVERSION

• ACTIVE ISCHEMIA
• EVIDENCE OF ORGAN HYPOPERFUSION
• SEVERE MANIFESTATIONS OF HEART FAILURE
• PREEXCITATION SYNDROMES
ATRIAL FIB DURATION LESS THAN 48 HOURS

- EARLY CARDIOVERSION
- PERI PROCEDURAL HEPARIN
- LONG TERM ORAL ANTICOAGULANTS IN HIGH RISK PATIENTS
DELAYED CARDIOVERSION

- ATRIAL FIBRILLATION DURATION > 48 HOURS
- MITRAL VALVE DISEASE
- SIGNIFICANT CARDIOMYOPATHY OR HEART FAILURE
- PRIOR THROMBOEMBOLIC EVENT
RATE CONTROL WITH MILD TO MODERATE SYMPTOMS

• BETA BLOCKERS OR VERAPAMIL OR DILTIAZEM- IN ABSENCE HEART FAILURE
• DIGOXIN- PREFERRED IN PATIENTS WITH ATRIAL FIB DUE TO HEART FAILURE.
• IV AMIODARONE
• IV PROCAINMIDE
Recent-onset AF

Yes

Haemodynamic instability

No

Electrical

Patient/physician choice

Pharmacological

Emergency

Elective

Structural heart disease

Severe

Intravenous ibutilide

Intravenous amiodarone

Intravenous ibutilide

Vernakalant

Intravenous flecainide

Intravenous ibutilide

Propafenone

Vernakalant

Intravenous amiodarone

Intravenous amiodarone

Intravenous amiodarone

Pill-in-the-pocket (high dose oral)

Flecainide

Propafenone

* Ibutilide should not be given when significant left ventricular hypertrophy (≥1.4 cm) is present.

* Vernakalant should not be given in moderate or severe heart failure, aortic stenosis, acute coronary syndrome or hypotension. Caution in mild heart failure.

* "Pill-in-the-pocket" technique – preliminary assessment in a medically safe environment and then used by the patient in the ambulatory setting.
Therapy for the maintenance of sinus rhythm in patients with recurrent paroxysmal or persistent atrial fibrillation. Drugs are listed alphabetically and not in order of suggested use. The seriousness of heart disease progresses from left to right, and selection of therapy in patients with multiple conditions depends on the most serious condition present. LVH indicates left ventricular hypertrophy. Adapted from Wann 2011.
DRONEDARONE

- BENZOFURAN DERIVATIVE - STRUCTURALLY RELATED TO AMIODARONE
- BLOCKS SODIUM AND POTASSIUM CHANNELS
- NON COMPETITIVE ANTIADRENERGIC ACTIVITY
- CALCIUM ANTAGONIST PROPERTIES
DRONEDARONE

• SIGNIFICANT REDUCTION IN ARRHYTHMIC MORTALITY, CV MORTALITY AND STROKE. (ATHENA TRIAL)
• INCREASED SUDDEN MORTALITY IN PATIENTS ON CONCOMITANT DIGOXIN THERAPY
• INCREASE IN CV EVENTS IN PATIENTS WITH PERMANENT ATRIAL FIBRILLATION. (PALLAS TRIAL)
DRONEDARONE

• DRONEDARONE IS NOT RECOMMENDED FOR PATIENTS WITH RECENTLY UNSTABLE HEART FAILURE (WITH IN 4 WEEKS) OR NYHA CLASS 1V.
• SIDE EFFECTS- GI INTOLERANCE
FLECAINIDE

• PRODUCES SUBSTANTIAL SLOWING IN CONDUCTION VELOCITY.
• SIDE EFFECTS: METALLIC TASTE, DIZZINESS AND VISUAL DISTURBANCES.
• CONCOMITTANT BETA BLOCKADE IS RECOMMENDED IN PATIENTS WITH ATRIAL FIB AND FLUTTER.
• REGULAR ECG MONITORING IS RECOMMENDED AND AN INCREASE IN QRS DURATION OF 25% ON THERAPY COMPARED TO BASE LINE- THE DRUG SHOULD BE STOPPED.
PROPafenone

• POTENT SODIUM CHANNEL BLOCKER
• CAUSES INCREASE IN REFRACTORY PERIOD OF ALL CARDIAC TISSUES.
• SHOULD NOT BE USED IN PATIENTS WITH ISCHEMIA OR HEART FAILURE
• SIDE EFFECTS- METALLIC TASTE, DIZZINESS AND VISUAL DISTURBANCES
DISOPYRAMIDE

• SODIUM CHANNEL BLOCKER WITH POTENT ANTICHOLINERGIC AND NEGATIVE INOTROPIC EFFECTS.

• SIDE EFFECTS: DRY MOUTH, EYES, NOSE AND THROAT. URINARY RETENTION

• INDICATION: PATIENTS WITH NO STRUCTURAL HEART DISEASE AND VAGALLY MEDIATED ATRIAL FIBRILLATION
AMIODARONE

- MAJOR EFFECT: PROLONGATION OF ACTION POTENTIAL DURATION SECONDARY TO POTASSIUM BLOCKADE
- MILD TO MODERATE SODIUM BLOCKADE
- A NONCOMPETITIVE BETA BLOCKADE
- CALCICUM CHANNEL BLOCKADE
- SIDE EFFECTS: SINUS BRADYCARDIA, QT PROLONGATION
AMIODARONE

- HEPATIC TOXICITY
- PULMONARY TOXICITY
- THYROID DYSFUNCTION
- SKIN PIGMENTATION
- CORNEAL DEPOSITS
SOTALOL

• NON CARDIOSELECTIVE BETA BLOCKER WITH CLASS 111 ANTIARRHYTHMIC EFFECT
• SIDE EFFECTS: BETA BLOCKING EFFECTS, TORSADE DE POINTES, EXACERBATION OF CONGESTIVE HEART FAILURE
• CAREFUL MONITORING OF QT INTERVAL – QTc SHOULD BE KEPT BELOW 500 MS.
DOFETILIDE

• POTASSIUM CHANNEL BLOCKER
• PROLONGATION OF ACTION POTENTIAL DURATION AND REFRACTORY PERIODS
• ELIMINATED BY KIDNEYS AND LIVER, BUT RENAL ROUTE IS IMPORTANT
• SIDE EFFECTS: TORSADE- 0.3% TO 4.7%.
• HEAD ACHE, GI DISTURBANCES, SLEEP DISORDERS.
• IN PATIENT ADMINISTRATION