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Department of Health Research
Ministry of Health and Family Welfare, Government of India

INDIAN COUNCIL OF MEDICAL RESEARCH
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Standard Treatment Workflow (STW) for the Management of

ATRIAL FIBRILLATION

ICD-10-I48.91

WHEN TO SUSPECT ?

SYMPTOMS
- Rapid irregular heart beat with or without
  - General fatigue or weakness or exhaustion
  - Dizziness, near syncope or syncope
  - Shortness of breath
  - Chest pain
- More marked on exertion

SIGNS
- Irregularly irregular pulse
- Variable heart sound

LOOK FOR RISK FACTORS
- Prior valvular heart disease or CHF or MI
- Prior TIA or stroke or embolic episode
- Hypertension, DM, COPD,CKD, Obesity

LOOK FOR PRECIPITATING FACTORS:
- Post (cardiac) surgery
- Alcoholism or binge drinking
- Myo-pericarditis or ACS
- Pneumonitis or pulmonary embolism
- Sepsis, hyperthyroidism

MANAGEMENT PRINCIPLES:
- Categorize AF
- Look for immediate intervention indicators
- Assess stroke risk & need for anti-coagulation
- Assess bleeding risk
- Need for rate control
- Consideration for rhythm control

CATEGORIZE AF
- Paroxysmal AF: Episodes of AF for less than 7 days
- Persistent AF: AF lasing from 7 days to 1 year
- Long standing perssistent AF: AF lasting for > 1 year
- Permanent AF: AF with heart rate control as only option

LOOK FOR IMMEDIATE INTERVENTION INDICATORS:
- Systolic BP 90 mmHg, HR > 150 or <50/min
- Ongoing Angina
- CHF or TIA or stroke
- Major bleed on OAC (define)

STROKE RISK SCORE

CHA_2DS_2-VAS$_c$	SCORE
- Congestive heart failure/LV dysfunction	1
- Hypertension	1
- Aged ≥ 75 years	2
- Diabetes mellitus	1
- Stroke/ TIA/ TE	2
- Vascular disease [prior MI, PAD or aortic plaque]	1
- Aged 65-74 years	1
- Sex category [i.e. female gender]	1
Maximum Score	9

OAC if score >1 in men and >2 in women

BLEEDING RISK SCORE

HAS-BLED	SCORE
- Hypertension i.e. uncontrolled BP	1
- Abnormal renal/ liver function	1 or 2
- Stroke	1
- Bleeding tendency or predisposition	1
- Labile INR	1
- Age (e.g. >65)	1
- Drugs (e.g. concomitant aspirin or NSAIDSs or alcohol	
	9

Bleeding Risk High in score >3

CHOICE OF ANTI-COAGULATION:
- Vitamin K antagonist
  - Aim for INR 2-3
  - Assess risk of bleeding
  - Take measures to reduce/ modify risk of bleeding
  - Dietary modification & regular monitoring

MEASURES TO REDUCE HIGH BLEEDING RISK:
- Control SBP to less than 140 mmHg
- Avoid dietary indiscretions
- Avoid concomitant aspirin, anti platelets, NSAIDs
- Avoid alcohol
- Correct anemia

HEART RATE CONTROL

In all patients except hemodynamic instability	Beta blocker or calcium blocker or combination	BB ± digoxin in HF	Rate aim to be less than 110/ min

CONVERSION TO NSR

Hemodynamic instability	Uncontrolled symptoms despite HR control	Unacceptable rate control drug side effects	Patients' preference

MANAGEMENT

AT PHC/ CHC:
- Detailed clinical evaluation
- Basic investigations
- Careful ECG evaluation
- Start OAC if indicated (based on Stroke risk)
- Start Metoprolol if HR >110/ min & no evidence of CHF
- Refer if indicators for early intervention

AT DISTRICT HOSPITAL:
- Admit if indicators of early interventions
- Immediate cardioversion after heparinization,if hemodynamic instability
- Manage precipitating factors if any
- Assess stroke, bleeding risk & coagulation parameters
- Detailed echocardiogram
- Start OAC, maintain INR around 2-3
- Control HR by single drug or combination of BB & Ca Blocker

Refer HR uncontrolled or CHF or angina

AT TERTIARY CENTRE:
- Re-assess clinical status, adequacy of AC
- Consider need of NOAC
- Optimise management of underlying cardiac disease
- Stress life style and AF risk factor modification
- Assess need for rhythm control and discuss pros & cons
- Consider RFA in select patient

INVESTIGATIONS

BASIC INVESTIGATIONS:
- Hemograms
- Blood sugar, Creatinine
- Electrolytes
- 12 lead ECG

DESIRABLE INVESTIGATIONS:
- Plain X-ray chest
- Thyroid evaluation
- Liver function test
- Troponins
- Prothrombin time, INR (Coagulation profile)
- Echocardiography

OPTIONAL INVESTIGATIONS:
- Prolonged ECG monitoring
- Trans-esophagial echocardiography
- Exercise Stress Test
- CT scan
- MRI
- EP study
- Coronary angiography

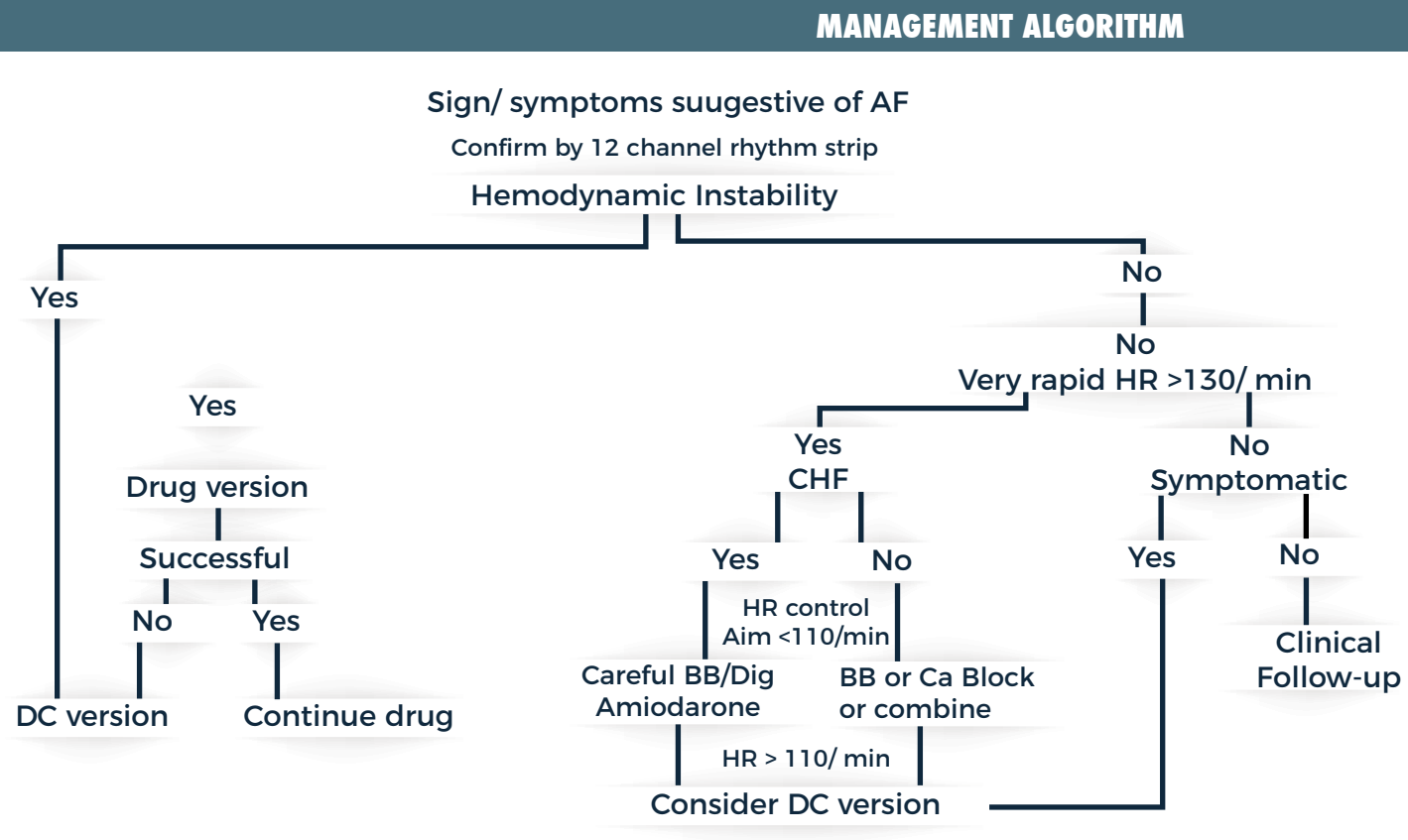
WHAT TO LOOK FOR IN ECG ?
- Ventricular rate
- Chamber enlargement
- Pre-excitation
- Prior MI
- Bundle branch block
- QT interval

RHYTHM CONTROL

Pharmacological Cardioversion
- CHF, CAD, Abnormal LVH → Amiodarone
- Normal Heart → Flecainide, Ibutilide, Propafenone; Pill in pocket: Flecainide, Propafenone

Long Term Rhythm Control
- CHF → Amiodarone
- Normal Heart → Flecainide, Propafenone, Sotalol
- CAD, LVH → Amiodarone, Sotalol

MANAGEMENT ALGORITHM



Anti-coagulants in all Except
- Reversible
- Score <1 (men) ; <2 (women)

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES