

PROTOCOL FOR MANAGEMENT OF ATRIAL FIBRILLATION

I. Definition

Atrial fibrillation is a cardiac rhythm with no discernable P waves, an irregularly irregular QRS complex, an atrial rate of 350-600 bpm, and a ventricular rate of 100-160 bpm.

II. Scope of the problem

Atrial fibrillation is the most commonly sustained cardiac arrhythmia and a common reason for mortality and morbidity. Atrial fibrillation causes disease for three reasons: i) the ventricular rate is often high, which leads to symptoms ranging from discomfort to life threatening heart failure; ii) the rhythm causes loss of atrioventricular synchrony, which reduces diastolic filling and may lead to heart failure; and iii) atrial contraction is lost leading to stagnant blood that again may lead to atrial thrombi and peripheral embolism.

III. Subjective Data

Mechanism of injury, PMH of atrial fibrillation, change in mental status, palpitations, chest pain, fatigue, light-headedness.

IV. Objective Findings

Evaluate vital signs (esp. HR, BP, SaO₂), pre-hospital & current medications, recent lab values (esp. all electrolytes, Hb, glucose, pH-PaO₂)

V. Assessment

Blunt cardiac injury, hypoxemia, hypokalemia, hypomagnesemia, CHF

VI. Plan

There is no evidence that pharmacological cardioversion of atrial fibrillation to sinus rhythm is superior to rate control. Rhythm control is associated with more adverse effects and increased hospitalization. It does not reduce the risk of stroke. Rate control and correction of possible inciting factors is indicated.

A. Provide supplemental O₂.

B. Replace Mg ++ empirically and replace/correct other electrolyte disturbances as lab values indicate.

- C. Assess volume status and the potential need for diuresis.
- D. Beta blockers or calcium channel blockers should be initiated I.V. during the acute onset of atrial fibrillation for the goal of rate control (<120 bpm, although <100 bpm is preferred if hemodynamics allow).
- E. Following the initial onset, PO/PT medications should be initiated. The following drugs are recommended for their demonstrated efficacy in rate control during exercise and while at rest: atenolol, metoprolol, propranolol, diltiazem, and verapamil (drugs listed alphabetically by class). Digoxin is only effective for rate control at rest and therefore should only be used as a second-line agent for rate control in atrial fibrillation.
- F. Patients with atrial fibrillation should receive chronic anticoagulation with adjusted-dose warfarin, unless they are at low risk of stroke (<75 years of age, no HTN, no DM) or have a specific contraindication to the use of warfarin (thrombocytopenia, **recent trauma or surgery**, alcoholism).
- G. Most patients within this population (s/p trauma) will convert spontaneously if adequate rate control is achieved. The majority of those converted to sinus rhythm from atrial fibrillation **should not** be placed on rhythm maintenance therapy since the risks outweigh the benefits. In a selected group of patients whose quality of life is compromised by atrial fibrillation, the recommended pharmacologic agents for rhythm maintenance are amiodarone, disopyramide, propafenone, and sotalol (drugs listed in alphabetical order). The choice of agent predominantly depends on specific risk of side effects based on patient characteristics.