Heart Rhythms

Signs and Symptoms
Risks and Possible Treatments
Nursing Interventions

1. Sinus Bradycardia

a. Causes
   i. Hypoglycemia ▪ Hypothermia ▪ Hypothyroidism ▪ Previous cardiac history ▪ Medications ▪ Toxic exposure ▪ MI – Inferior wall involving right coronary artery

b. Signs and Symptoms
   i. Syncope ▪ Dizziness ▪ Chest Pain ▪ Shortness of Breath ▪ Exercise Intolerance ▪ Cool, clammy skin

c. Risks
   i. Reduced Cardiac Output

d. Treatments
   i. Atropine ▪ Pacing if the patient is hemodynamically compromised ▪ Treatment will be based on whether patient is symptomatic

e. Nursing Interventions
   i. Assess patient – Are they symptomatic? -Give oxygen and monitor oxygen saturation -Monitor blood pressure and heart rate - Start IV if not already established - Notify MD

2. Sinus Tachycardia

a. Causes
   i. Damage to heart tissues from heart disease ▪ Hypertension ▪ Fever ▪ Stress ▪ Excess alcohol, caffeine, nicotine, or recreational drugs such as cocaine ▪ A side effect of medications ▪ Response to pain ▪ Imbalance of electrolytes ▪ Hyperthyroidism

b. Signs and Symptoms
   i. Dizziness ▪ Shortness of breath ▪ Lightheadedness ▪ Rapid pulse rate ▪ Heart palpitations ▪ Chest pain ▪ Syncope

c. Risks
   i. Cardiac output may fall due to inadequate ventricular filling time • Myocardial oxygen demand increases • Can precipitate myocardial ischemia or infarct

d. Medical Treatments
   i. Find and treat cause

e. Nursing Interventions

i. Assess patient – Are they symptomatic? Are they stable? - Give oxygen and monitor oxygen saturation - Monitor blood pressure and heart rate - Start IV if not already established - Notify MD

3. Atrial Flutter

a. Causes

i. Valve disorder (mitral) ▪ Thickening of the heart muscle ▪ Ischemia ▪ Cardiomyopathy ▪ COPD ▪ Emphysema

b. Signs and Symptoms

i. • Palpitations • SOB • Anxiety • Weakness • Angina • Syncope

c. Risks

i. Clot formation in atria ▪ Dramatic drop in cardiac output

d. Medical Treatments

i. Cardioversion – treatment of choice ▪ Antiarrhymics such as procainamide to convert the flutter ▪ Slow the ventricular rate by using diltiazem, verapamil, digitalis, or beta blocker ▪ Heparin to reduce incidence of thrombus formation

e. Nursing Interventions

i. Assess Patient ▪ O2 if not already given ▪ Start IV if not already established and hang NS ▪ Notify MD ▪ Prepare for cardioversion

4. Atrial Fibrillation

a. Causes

i. Hypoxia ▪ Hypertension ▪ Congestive heart failure ▪ Coronary artery disease ▪ Dysfunction of the sinus node ▪ Mitral valve disorders ▪ Rheumatic heart disease ▪ Pericarditis ▪ Hyperthyroidism

b. Signs and Symptoms

i. Heart palpitations ▪ Irregular pulse which feels too rapid or too slow, racing, pounding or fluttering ▪ Dizziness or light-headedness ▪ Fainting ▪ Confusion ▪ Fatigue ▪ Trouble breathing ▪ Difficulty breathing when lying down ▪ Sensation of tightness in the chest

c. Risks

i. Clot formation in atria (atria not completely emptying) ▪ Stroke ▪ Pulmonary Embolism ▪ Dramatic drop in cardiac output

d. Medical Treatment

i. Rate control (slow ventricular rate to 80-100 beats/minute) ▪ Antithrombotic therapy ▪ Correction of rhythm ▪ Chemical or electrical cardioversion

5. Ventricular Tachycardia

a. Causes

i. Usually occurs with underlying heart disease ▪ Commonly occurs with myocardial ischemia or infarction ▪ Certain medications may prolong the QT interval predisposing the patient to ventricular

tachycardia ▪ Electrolyte imbalance ▪ Digitalis toxicity ▪ Congestive heart failure

b. Signs and Symptoms
  i. Chest discomfort (angina) ▪ Syncope ▪ Light-headedness or dizziness ▪ Palpitations ▪ Shortness of breath ▪ Absent or rapid pulse ▪ Loss of consciousness ▪ Hypotension

c. Risk
  i. Major cause of sudden cardiac death

d. Medical Treatment
  i. If there is no pulse, begin CPR and follow ACLS protocol ▪ If there is a pulse and the patient is unstable - cardiovert and begin drug therapy

e. Nursing Interventions
  i. Assess your patient - If symptomatic, treatment must be aggressive and immediate - Pulse present - Oxygen - Patent IV (preferably x2) - Monitor patient very closely - Pulseless • ACLS protocol

6. Ventricular Fibrillation

a. Causes
  i. AMI ▪ Untreated VT ▪ Electrolyte imbalance ▪ Hypothermia ▪ Myocardial ischemia ▪ Drug toxicity or overdose ▪ Trauma

b. Signs and Symptoms
  i. Loss of consciousness ▪ Absent pulse

c. Risk
  i. Death

d. Medical Treatment
  i. CPR with immediate defibrillation ▪ Initiate ACLS algorithm

e. Nursing Interventions
  i. ACLS

References:

ACLS Algorithms. (2012). Learn and master. Retrieved from http://acls-algorithms.com/

E-Medicine Health. (2012). Retrieved from http://www.emedicinehealth.com/script/main/hp.asp