

ACUTE CONGESTIVE HEART FAILURE

JOHN BATEMAN

- I. Epidemiology
 - a. 4.7 million cases in U.S., 550,000 new cases annually
 - b. Leading cause of hospitalization among patients older than 65yrs
 - c. Poor prognosis, high mortality, mortality coincides with severity of presentation

- II. Pathophysiology
 - d. Causes;
 - i. MI, valvular disease, cardiomyopathy, myocarditis, pericarditis, tamponade, HTN, anemia, dysrhythmias
 - e. \downarrow CO, \uparrow SVR; exacerbate each other, leads to third spacing in lungs and dependent periphery
 - f. Systolic heart failure
 - i. EF under 40%, most commonly from ischemic disease, ventricle has difficulty squeezing
 - ii. Afterload sensitivity
 - g. Diastolic heart failure
 - i. Contractile function and EF preserved
 - ii. Inability of ventricular relaxation
 - iii. Preload sensitivity

- III. Diagnosis
 - a. **Gold standard is echocardiogram**
 - i. Bedside echo for estimation of EF and cardiac function
 - ii. Formal echo
 - b. PE findings
 - i. Respiratory distress, HTN, diaphoresis, rales, JVD, edema, S3
 - c. CXR findings
 - i. **Acute abnormalities lag clinical appearance by up to 6 hours**
 - ii. Dilated upper lobe vessels, cardiomegaly, interstitial edema, enlarged pulmonary artery, pleural effusion, alveolar edema, prominent SVC, Kerley lines
 - d. BNP
 - i. Levels correlate with severity, and mortality

- IV. Treatment
- a. Airway
 - i. Intubation, BiPAP
 - b. Cardiac workup
 - c. Avoid/reverse pulmonary edema
 - i. Afterload reduction
 - 1. Vasodilatation
 - 2. Diuresis
 - ii. f
 - d. Medications
 - i. ACE's, ARB's, Hydralazine, β -blockers, Digoxin, Spironolactone, Morphine
 - ii. AVOID!!
 - 1. CCB's, NSAIDS, Antiarrhythmics
 - a. **Prophylactic antiarrhythmics ineffective, may increase mortality**

- V. Disposition
- a. ICU
 - i. Pulmonary edema
 - ii. Nitro drip
 - iii. Unstable vitals after treatment
 - iv. Cardiogenic shock
 - v. Positive troponins
 - b. Telemetry
 - i. Good response to treatment
 - ii. Adequate urine output
 - iii. Negative enzymes
 - iv. Blood pressure somewhat controlled
 - c. Discharge
 - i. Continued improvement
 - ii. Good follow up
 - iii. Adequate social support