ACUTE PERICARDITIS AND TAMPONADE

(*Last updated 07/23/2019; Reviewed by: Amit Vasireddy, MBBS)*

PRESENTING COMPLAINT: Chest pain, low grade fever

FINDINGS

- **A** Check Airway
- **B** ↑ RR, dyspnea (tamponade)
- **C** ↑ HR, ↓ BP, pulsus paradoxus, muffled heart sounds (tamponade), pericardial rub
- **D** Alert, variable altered (VPUD)*
- **E** Peripheral edema, cyanosis, JVP distension
- **L_{PC}** ↑ CRP , ↑ Lactate, ↑ troponins (associated myocarditis or infarction)
- **U_{PC}** Circumferential pericardial effusion, chamber collapse (tamponade)

***V** (verbal), **P (**pain), **U** (unconsciousness), **D** (delirious)

U_{PC} (point of care ultrasound) **L_{PC}** (point of care labs)

OTHER HISTORY

- Acute/subacute chest pain (improvement with sitting up and leaning forward), low-grade fever, dyspnea, cough
- If complicated by tamponade: tachycardia, peripheral edema, pulsus paradoxus, decreased urine output
- Causes: Pericarditis and pericardial effusion (idiopathic, infectious, post-radiation, neoplastic, inflammatory, autoimmune, cardiac, metabolic), hemopericardium (trauma, dissecting aortic aneurysm, ventricular wall rupture, invasive cardiac procedures), consider constrictive pericarditis

DIFFERENTIAL DIAGNOSIS

- Myocardial infarction, aortic dissection, pneumothorax, pleural effusion

OTHER INVESTIGATIONS

- **Labs** Blood count, cardiac biomarkers, as-needed microbiology, CRP, blood type and crossmatch, ABG, liver and renal function, blood cultures if fever higher than 38°C
- **ECG** Tachycardia, low voltage QRS complex, electrical alternans, diffuse ST ↑ with reciprocal ST ↓ in VR and V1 leads, PR depression
- **ECHO** Pericardial effusion, low cardiac output, RV diastolic collapse
- **CXR:** Enlarged globular cardiac shadow

THERAPEUTIC INTERVENTIONS

- **If Stable**

- Close monitoring and serial ECHO
    - Consider diagnostic pericardiocentesis to r/o malignancy and TB
- Idiopathic or viral pericarditis
    - ASA or nonsteroidal anti-inflammatory drugs colchicine if recurrent or prolonged symptoms
    - May use steroids

- **Acute Tamponade with Hemodynamic Compromise**
    - Shock resuscitation
        - Cautious fluid challenge, vasopressors/inotropes, compensatory tachycardia may be life-saving, do not try to rate control
    - Intubation/induction agents/positive pressure ventilation carry a high risk of hemodynamic collapse and PEA cardiac arrest
        - Extreme caution needed
        - If possible, defer after pericardiocentesis
    - Urgent percutaneous pericardiocentesis (US-guided) with drain placement
        - Send sample for cultures, Gram stain, cytology, PCR
    - Consider immediate surgery if hemorrhagic tamponade due to cardiac rupture
    - As-needed antimicrobial/anti-inflammatory treatment

REFERENCES & ACKNOWLEDGMENTS

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