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
- LPC ↑ CRP, ↑ Lactate, ↑ troponins (associated myocarditis or infarction)
- UPC 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
  o Shock resuscitation
    ▪ Cautious fluid challenge, vasopressors/inotropes, compensatory tachycardia may be life-saving, do not try to rate control
  o 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
  o Urgent percutaneous pericardiocentesis (US-guided) with drain placement
    ▪ Send sample for cultures, Gram stain, cytology, PCR
  o Consider immediate surgery if hemorrhagic tamponade due to cardiac rupture
  o As-needed antimicrobial/anti-inflammatory treatment

REFERENCES & ACKNOWLEDGMENTS
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