



The Montgomery County Hospital District Paramedic Podcast

Episode #80: Serial Killer Series – Shortness of Breath

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Take Home Points

- Always start with the Killer Five
- Use your ETCO₂ (Shark fin for COPD/low in non-pulmonary acidosis)
- Quiet Asthma = Major Concern
- Clear Lungs in a SOB patient should trigger PE consideration
- CHF/SCAPE treatment is BIPAP and Nitrates

When you have a Shortness of Breath patient, what will kill them emergently?

1. COPD/Asthma
2. CHF/ Sympathetic Crashing Acute Pulmonary Edema (SCAPE)
3. Pneumonia
4. Infarction (Pulmonary = PE or Cardiac = MI)
5. Non-Pulmonary Acidoses

What do you consider when treating these patients?

- **You should start planning treatment en route to the patient.** Always approach a dyspnea case by covering the Killer 5 diagnoses first.
- **Remember that your vitals are vital.** They are called vitals for a reason – FULL SET WITH TEMP/ETCO₂
- **Use the End-Tidal CO₂ Waveform early**
- **Remember to complete a thorough exam.** Think about everything you are observing - wheezes vs. rales vs. rhonchi, Edema/JVD, and Unilateral leg swelling are exam findings that may help you choose a final diagnosis.
- **Check the Blood Glucose**
- **Understand the patient's pain presentation (PQRST: Provoke/Palliate, Quality, Radiation, Severity, Timing).**
- **Review the patient's past medical history** (Tobacco use, DM, medication list, known PE risk factors).

COPD/Asthma

- **The past medical history is often key with these patients.** Do they have a history of smoking or inhaler or nebulizer use?
- **Always fear the quiet asthmatic.** If obstruction is complete, then final lung sound = silence
- **Watch for shark fin both to diagnose and evaluate treatment response.**
- **IM Epinephrine is to be used for asthma and not for COPD.**
- **Beware of bleb rupture/Pneumothorax in COPD patients.** They will often present with SOB and pleuritic pain

CHF/ SCAPE

- **Timing defines this condition = ACUTE**
- **Look for symptoms of Sympathetic Surge.** Tachycardia, Hypertension, and Diaphoresis are all common.
- **Treat with BIPAP and Nitrates.** Remember that both afterload and preload reduction are key.

Pneumonia

- Symptoms often include productive sputum, fever, cough, and hypoxia.
- The classic exam finding is rhonchi. However, it can also present with rales and/or wheezes.
- Watch for increased shock index. Shock Index = HR/SBP. SI>1 should raise red flags
- Treatment includes IV fluids and pressors as needed.

Infarction (Pulmonary or Cardiac)

- Acute MI can cause dyspnea as well (see chest pain SKS episode).
- A patient with Chest Pain, SOB, and clear lungs should raise PE concerns. Hypoxia and tachycardia are not always present.
- High PE Risk History includes sedentary lifestyle, recent surgery/hospitalization, recent travel, oral contraceptive pill use, cancer, past DVT/PE, tobacco use, and pregnant/post-partum.
- PERC Rule: Clinical decision tool for PE evaluation in the ED
 - Age greater than 50
 - Heart rate greater than 100
 - O2 saturation less than 95% on room air
 - Unilateral leg swelling
 - Hemoptysis
 - Recent surgery or trauma (less than 4 weeks ago)
 - Prior PE or DVT
 - Hormone use

Non-Pulmonary Acidoses

- Not all tachypneic patients will have a pulmonary pathology.
- An increased respiratory rate may be a compensatory function. Metabolic acidosis leads to respiratory alkalosis and breathing off CO₂.
- Examples of Acidoses: DKA, Sepsis, and ingestions like aspirin overdose
- Use the ETCO₂. It will be low with these patients.
- Intubate DKA patient as an absolute LAST RESORT. BiPAP/CPAP is your friend in DKA