**EM Basic Chronic Obstructive Pulmonary Disease (COPD)**

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**Triage Note: 2 days of increasing SOB BIBEMS; given duonebs in truck; no chest pain.**

**Vitals: HR 70 afib, BP 140/80, RR 281, O2 98% NRB, T 98.2°F**

SOB Differential Diagnosis:

Cardiac – MI, angina, CHF, arrhythmia, pericarditis/effusion, myocarditis

Vascuar – AS, P-HTN, PE, Aortic Dissection

Pulm – COPD, asthma, PNA, cancer, abscess, contusion, ARDS

Extrapulm – PTX, pleural effusion

Airway – obstruction, epiglottitis, croup

Diaphragm/Muscular – trauma, GBS, MG

Central – stroke, opioids, tox

Systemic – anemia, sepsis, DKA, AKA, acidosis, tox

Assessment Triangle:

**A**ppearance- overall appearance

Work of **B**reathing

**C**olor- skin color- hypoxia? Pallor?

**Vitals-** pay attention to tachypnea, hypoxia, tachycardia, and hypotension

**History­-** efficient history taking is key in the short of breath patient

**Try to differentiate from cardiac-** do you have chest pain?

**Onset of symptoms**- when exactly did this start? Sudden or gradual?

**Duration/progression of symptoms-** has it gotten worse since it started?

**Past episodes-** have you ever had this before? When?

**Rule out other causes-** does it vary with position (CHF, pericarditis), did you fall (chest wall or CNS trauma), fam/personal hx of PE, unilateral leg swelling (PE), cough/fever/mucus (bronchitis, PNA), blood thinners (anemia), rashes (allergic, meningococcus)

**Trouble breathing?**- most will say “tickle” or tightness in throat- not as worrisome if breathing easily and no stridor

**Skin symptoms**- any itching, rash, skin erythema, swelling

**PEARL:** In patients with shortness of breath who are having trouble speaking to you, EMS can be a wealth of information

Rosen PEARL: “You have to have patience. Its not the patient who is the bad historian, it’s the doctor.”

**Past medical history-** have they ever been intubated, admitted to the hospital/ICU? Medication (are they currently on prednisone). Home o2? allergies, surgeries, etc.

**Exam**- quickly access airway, breathing, circulation, and mental status

**HEENT-** airway (Mallampati, edema, denture, LEMON), JVD

**Lungs-** respiratory effort, accessory muscles, belly breathing, lung sounds (wheezing vs. quiet)

**CV-** heart murmurs, LE swelling, distal pulses, rate/rhythm

**Extremities-** bilateral pitting edema, cool v warm, unilateral swelling

**Skin exam-** petechiae, hives, pallor

**Rectal-** if anemic and don’t have a source

**Rest of Head to Toe Exam-** be complete (especially if stable)

**Diagnostics**

**Rosen PEARL: If you wouldn’t want to pay for it, don’t order it**

**Labs-** BNP, VBG, CBC (anemia), Chem 7 (tox/met/acid/base), troponin

**EKG-** arrhythmia, tachycardia, (N)STEMI, right heart strain, tox

**CXR-** eval for PNA, PTX, CHF, bullae, air trapping

**Bedside US**: PTX, pericardial effusion, pleural effusion, CHF, right heart strain/septal bowing

**Treatment**

**Albuterol-** only a temporary fix; beta 2 agonist, bronchodilator; q20 min or continuous via nebulizer

**Ipratropium-**short acting inhaled anticholinergic, bronchodilator; q20 min with albuterol nebs; controversy on how often to give, institution specific

**Oxygen-**titrate to 90-95% or to patient’s personal goal o2 saturation (if known), i.e. titrate to ‘where they normally live.’

**Steroids-** take 4-6 hours to work, Predisone 40mg PO, Solumedrol 125mg IV (1 mg/kg IV)

**PEARL:** IV and PO steroids have equal bioavailability, only use IV steroids if patient can’t swallow medications

**Antibiotics-**

**Indications-**current recommendations are to give if pt has sputum purulence + dyspnea and/or increased sputum

Abx Choice: macrolide (azithromycin), tetracyclines (doxycycline), respiratory fluoroquinolones (levofloxacin or moxifloxicin), amoxicillin +/- clavulanic acid

Treat for 5-10 days (Institution specific)

**Noninvasive Positive Pressure (BiPAP/CPAP)**

Avoid intubation at all costs!

Noninvasive positive pressure can prevent many intubations. Use it liberally and early before the patient becomes hypercarbic and loses their mental status.

**Disposition**

**ICU:** all patients requiring noninvasive positive pressure or intubation. Consider ICU for patients with multiple co-morbidities which may worsen their COPD exacerbation in of themselves (eg CHF, PNA).

**Ward:** any patient with active comorbidity not easily corrected in ED (anemia, PNA, CHF). Patients not back to their baseline o2 saturation or baseline exercise function.

**Home:** Make sure patient has good follow up and good social situation (can get medications from pharmacy, has help at home, etc.).

If patient requires home o2 at baseline, ensure they have it available upon going home.

**Discharge medications**

**All COPD exacerbation patients get steroids:**

**Prednisone** 40mg PO daily for 5 days

**Continue home inhalers:**

**Albuterol IH prn**

**Tiotropium**

**Salmeterol**

REFERENCES

1. New, A. Oxygen: kill or cure? Prehospital hyperoxia in the COPD patient.  Emerg Med J. 2006 February; 23(2): 144–146.

2. Austin MA et al. Effect of high flow oxygen on mortality in chronic obstructive pulmonary disease patients in prehospital setting: Randomised controlled trial. *BMJ* 2010 Oct 18; 341:c5462.

3. Comet, AD et al. The potential harm of oxygen therapy in medical emergencies. Crit Care. 2013 April 18; 17(2):313.

4. *Global Strategy for the Diagnosis, Management and Prevention of COPD*, Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2013. Available from: http://www.goldcopd.org/.

5. Leuppi, JD et al. Short-term vs conventional glucocorticoid therapy in acute exacerbations of chronic obstructive pulmonary disease: the REDUCE randomized clinical trial. JAMA 2013 Jun 5;309(21):2223-31.

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