

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

Vascular – 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:

Appearance- overall appearance

Work of Breathing

Color- 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 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 c allergies, surgeries, etc.

Exam- quickly assess 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), tropon

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 moxifloxacin), 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

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