7/6/23 Morning Report with @CPSolvers

"One life, so many dreams" ***Case Presenter****: Francisco* ***Case Discussants****: Rabih (@rabihmgeha) and Bettina (@salfopsi)*

CC: 28 year old male with fever, shortness of breath and productive cough for the past 3 days.

HPI: Presenting with fever, chills, fatigue, shortness of breath and productive cough with thick yellow-green sputum for 3 days. Noticed some blood streaks in his sputum over the past few days. Patient has not urinated for the past six hours.
Denied similar symptoms in the past.

ROS: negative for headaches, syncope, chest pain, hematuria and night sweats.

PMH: Chronic rhinosinusitis

Meds: intranasal corticosteroids

Fam Hx:

Soc Hx: Married was born in rural area and move to a suburban city are 10 years.

Health-Related Behaviors: Smoker 5 pack

Allergies:

Vitals: T: 38.5 **HR:** 122 **BP:** 95/65 **RR:** 36 **SpO2**: 88% 3L CN
Exam:
Gen: unwell, severe respiratory distress
HEENT:
CV: Tachycardic and hyperdynamic pulses, no murmurs, normal S1 and S2
Pulm: bilateral crackles and rhonchi.
Abd: clear
Extremities/skin: no rashes, no clubbing, pitting edema 1+ on extremities.

Notable Labs & Imaging:
Hematology:
WBC: 22,000 (85% neutrophils, 10% bands) Hgb: 11.5
Chemistry:
Na: 130 K: 3 Cl: 90 BUN: 40 Cr: 1.5 glucose: 200, Albumin: 2.5
Imaging:
CXR: bilateral dilated airways, mucus plugging and hyperinflation.
Empiric treatment with vancomycin, cefepime and levofloxacin.
High flow nasal cannula and fluids was started.
ABG: PH: 7.2 pO2: 88 pCO2:70 HCO3: 34
UA: muddy brown casts
Pt was Intubated and tracheal aspirates sent to labs
Influenza, covid, parainfluenza, RSV
Chest CT: airway dilation and lack of tapering towards and periphery compatible w/ bronchiectasis.
Tracheal aspirates: pseudomonas aeruginosa.
Previous sperm analysis had revealed azoospermia.
Genetic test: pathogenic CFTR mutation.

Final Dx: **Cystic Fibrosis**

Problem Representation: 28 year old male with history of chronic rhinosinusitis comes to clinic with fever, SOB and productive cough for three days.

Teaching Points (Marino):
-Fever + SOB + productive cough suggests respiratory pathology. The shortness of breath localizes it to the lower respiratory tract.
-**Fever is considered to be an infection until proven otherwise.**
-Age is concerning -> Look for possible causes of infection (immunosuppression, CF, bronchiectasis, COPD)
-Always look for associated signs and symptoms: Chronic rhinosinusitis in a young patient inclines us to think about possible immunodeficiency state.
-Physical exam can guide us to know the severity of the disease.
-Urinalysis is a good test to determine and narrow down on possible etiologies for systemic disease.
-Empiric treatment for CAP: ceftriaxone + vancomycin. You can always deescalate or change therapy after cultures.
- **Dilated airways + mucus plugging + hyperinflation is highly suggestive of bronchiectasis.** 40% is idiopathic but possible etiologies are: CVID, CGD and IgA deficiency —> recurrent infections causing focal bronchiectasis. Diffuse bronchiectasis makes us to think about other etiologies such as cystic fibrosis and ciliary dysfunction.
-**What is the best next step in this patient?** Immunoglobulins and sweat chloride test (>60 is very likely to be CF). Follow up with genetic testing if previous sweat chloride test is inconclusive.
-PCO2 of 88 in hyperventilating patient: Impending respiratory failure.