

## CASE #1

## COVID-19 and Pulmonary Aspergillus

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### HISTORY

**Chief Complaint:** 63-year-old male, presents with shortness of breath and positive SARS-CoV 2 (Covid)

#### Medical Hx

Coronary artery disease  
Hypertension  
Hyperlipidemia  
Asthma  
Chronic back pain  
Overweight (BMI 27 kg/m<sup>2</sup>)

#### Surgical Hx

Percutaneous coronary intervention  
Knee Surgery

#### Family Hx

Father- Renal Cancer

#### Social Hx:

Denies substance abuse, smoking  
Rare alcohol, no history of binge drinking

### REVIEW OF SYMPTOMS:

#### Present

Diaphoresis  
Body Aches  
Insomnia

#### Not Present

|             |          |
|-------------|----------|
| Sore Throat | Syncope  |
| Rhinorrhea  | Dysuria  |
| Diarrhea    | Headache |
| Chills      |          |

#### **MEDICATIONS – at admission**

Aspirin 81mg PO daily  
Clopidogrel 75mg PO daily  
Dexlansoprazole 30 mg PO daily  
Lisinopril/Hydrochlorothiazide 10mg/12.5 mg PO daily  
Meloxicam 7.5mg PO daily  
Clonazepam 1mg PO BID, as needed

### **PHYSICAL EXAMINATION:**

#### **Vital signs:**

Temp: 99.8 F/37.7 C, HR: 81 bpm, RR: 20 breaths/min, BP: 146/81 mmHg, Weight: 250lb

**General :** Alert and oriented in no distress

**HEENT:** Normocephalic, supple neck, trachea midline, extraocular movements intact, moist oral mucosa

**Respiratory:** Clear bilaterally, tachypneic

**CVS:** S1, S2, RRR, no murmurs

**GI:** Soft, non-distended, BS +

**Neurology:** Oriented, no focal deficits

## ADMISSION LABS

### CHEMISTRY/METABOLIC PANEL

Na – 127 mmol/L

K – 3.9 mmol/L

Cl – 92 mmol/L

HCO<sub>3</sub> – 26 mmol/L

BUN – 17 mg/dl

Creatinine – 0.9 mg/dl

Glucose – 110 mg/dl

Ca – 9.0 mg/dl

Total Protein – 7.1 gm/dl

Albumin –

Total Bilirubin – 0.9 mg/dl

AST – 144 units/L

ALT – 220 units/L

ALP – 125 units/L

### CBC

WBC –  $8.38 \times 10^3$  /cmm

Hb – 15.1 gm/dl

HCT – 45%

Platelets –  $210 \times 10^3$  /cmm

%PMNLs – 79

%Lymphocytes – 13

%Eosinophils – 0

### Other labs

LDH – 586 units/L (120 – 240 units/L)

Troponin – 6 ng/L (3 – 20 ng/L)

Ferritin – 2029 ng/ml (23.9 – 226.2 ng/ml)

ESR – 60 mm/hr (0 – 10 mm/hr)

D dimer – 372 ng/ml (0 – 240 ng/ml)

ESR – 752 mg/dl (220 – 498 mg/dl)

Urinalysis – unremarkable

SARS CoV 2 RT-PCR – DETECTED

## TIMELINE OF HOSPITAL COURSE/IMAGES

### COVID 19 Diagnosis/Timeline:

Day -9: Shortness of breath, fever, loss of taste

Day -6: COVID Test positive at outside facility

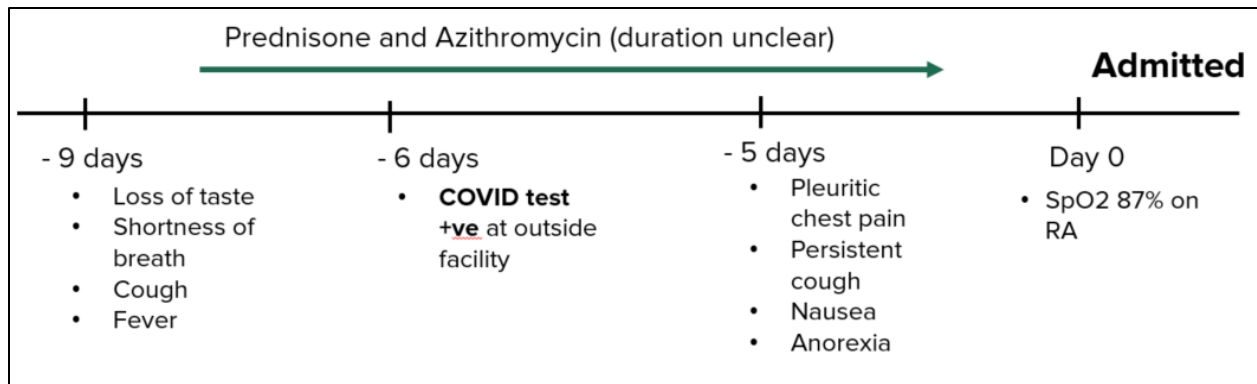
Day -5: pleuritic chest pain, persistent cough, nausea, anorexia

Day 0: SpO<sub>2</sub> 87% on room air, put on nasal cannula 2L O<sub>2</sub> advanced to 6L O<sub>2</sub>

Medications Added: Dexamethasone, Remdesivir, Anakinra

Cultures: Blood cultures – negative

Antigens: Legionella Urine Ag negative



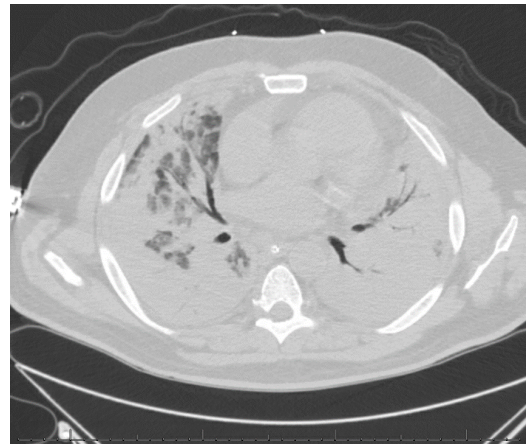
**Day 0** - Admission Chest Xray



**Day 2:** HFNC 50L/100%, BIPAP QHS; Transferred to ICU; iEPO

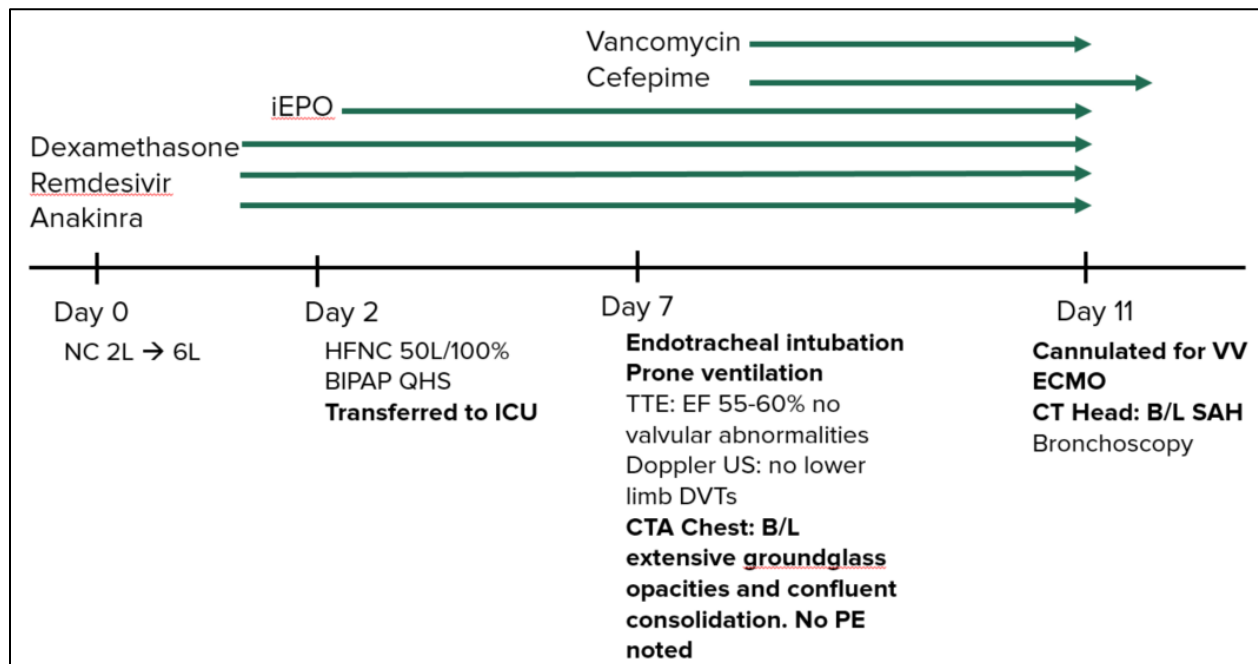
**Day 7:** Endotracheal intubation; Prone ventilation  
 Trans Thoracic Echo (TTE): EF 55% - 60%; Doppler US: no lower limb DVTs  
 CTA Chest: B/L extensive ground glass opacities and confluent consolidation, No PE.  
 Medication Added: Vancomycin, Cefepime  
 Cultures: Blood cultures – 2/4 bottles *S. epidermidis*  
 T2 Candida – negative  
 Tracheal Aspirate- Negative

**Day 7: CTA Chest w/ and w/o contrast**



**Day 10:** Blood Cultures – negative; T2 Candida- Negative

**Day 11:** Cannulated for VV ECMO; CT Head: B/L SAH; Bronchoscopy  
Cultures: BAL- CMV, HSV, Legionella, Fungal and Bacterial cultures all negative  
BAL HSV PCR negative; Viral respiratory panel Negative; AsperGal- negative; Beta D glucan- negative



**Day 19:** Tracheostomy/PEG; Dual oxygenators; Melena  
EGD: oozing hyperplastic polyp, resected and clipped  
Bronchoscopy: RLL bleed; CRRT (Continuous renal replacement therapy)  
Cefepime, Vancomycin continued

**Day 20:** COVID-19 IgG - positive

**Day 24:** P/F ratio: 99 (normal is  $\geq 400$ ); iNO started

CT Chest: Diffuse bilateral consolidation with moderate bilateral pleural effusions

CT Abdomen/pelvis: no abnormalities

Added Pip/tazo

Day 22, 26, 29- BAL Legionella, Fungal and bacterial culture negative

**Day 28:**

Cardioversion for atrial fibrillation; TTE: Dilated RV, EF 55-60%

Medications added: Norepinephrine, Vasopressin, Epinephrine, Amiodarone,

Meropenem and Vancomycin continues

**Day 31:**

Lactic acidosis, increased vasopressor requirements; Leukocytosis.

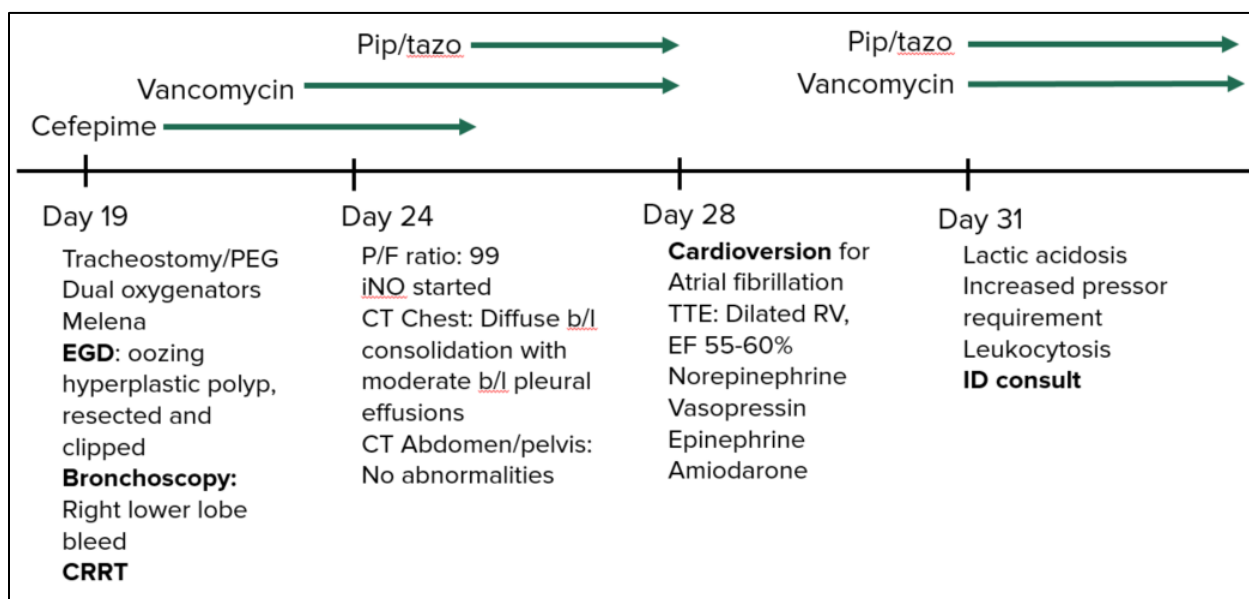
ID CONSULT

Blood culture and T2 *Candida* negative

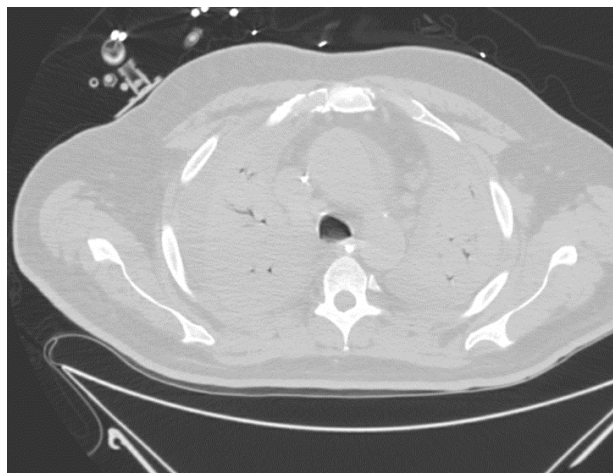
Dual Oxygenators

Melena; EGD: oozing hyperplastic polyp, resected and clipped

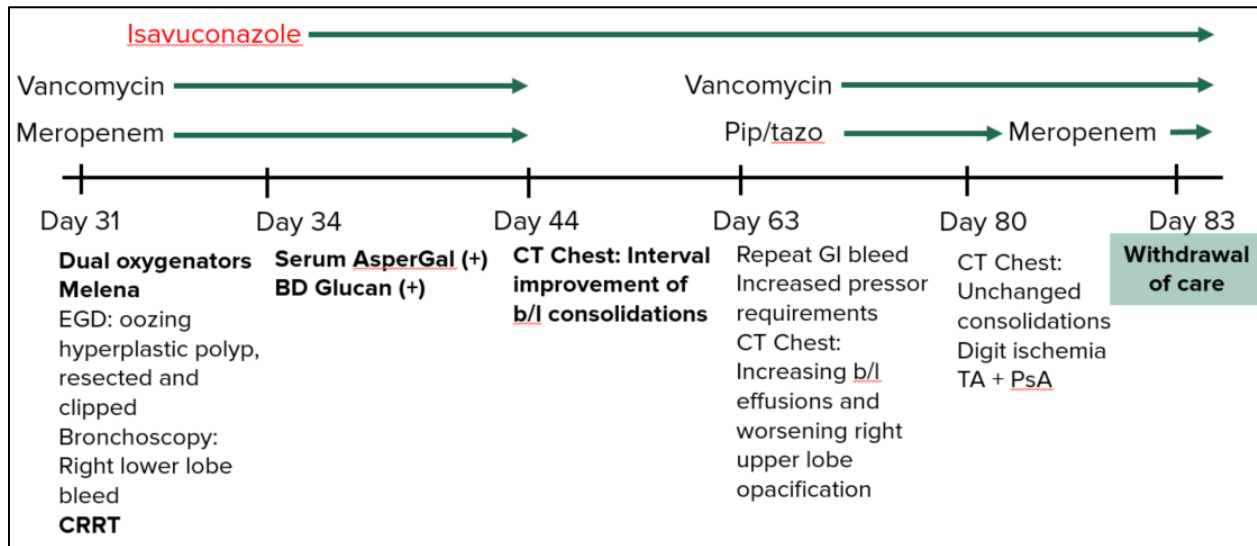
Bronchoscopy: RLL Bleed; CRRT



**Day 24- Chest CT w/o contrast**



**Day 32:** Isavuconazole started  
**Day 34:** Serum AsperGal – positive; BD Glucan – positive  
 Isavuconazole continued  
**Day 44:** CT Chest- interval improvement of bilateral consolidations  
**Day 63:** Repeat GI Bleed, increased vasopressor requirements  
 CT Chest- Increasing bilateral effusions and worsening right upper lobe opacification  
**Day 80:** CT Chest: unchanged consolidations, Digital ischemia; TA + PsA  
**Day 83:** Withdrawal of care, deceased.



#### Cultures

**Days 33, 35, 38, 43, 56, 62:** BAL

Legionella, Fungal, Bacterial cultures (-)

**Day 48:** BCx (-)

**Days 67, 73, 78:** BAL Cx – Pseudomonas aeruginosa (sensitive to Cefepime, pip/tazo)

**Day 75:** BCx 2/4 bottles S. epidermidis

**Day 80:** BCx (-)

#### Other labs

**Day 34:**

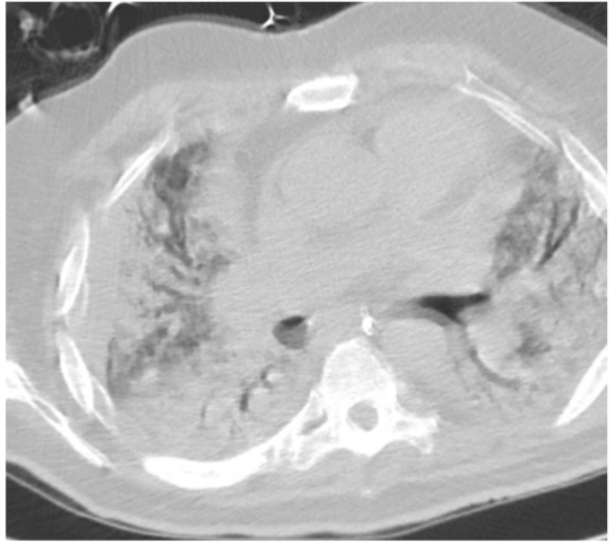
Serum AsperGM 0.747

(<0.499)

Serum  $\beta$ -D-Glucan 91 pg/ml

(<60 pg/ml)

**Day 44-** CT Chest w/o contrast – patchy consolidation in both lungs with areas of dense infiltrates



**Day 80-** CT Chest w/o contrast – Progressive dense, bilateral consolidation throughout both lungs

