**PRESENTATION**

**Notable SX**
- "65-80% Cough
- "15% URI Sx
- "45% Fever initially
- "10% GI Sx
- Acute worsening after early mild sx

**High Risk For Severe DZ**
- Age > 55 YO
- Comorbid diseases:
  - Pulm, cardiac, renal
  - DM, HTN
  - Immunocompromise

**Diagnostics Typically Seen in COVID19**
- Labs: leukopenia/lymphopenia, elevated BUN/SCR, elevated AST/ALT/Tbili
- CXR: hazy bilateral peripheral opacities
- CT: ground glass opacities, consolidation
- Lung POCUS*: numerous B lines, pleural line thickening, consolidation

**DIAGNOSTICS**

**Daily Labs**
- CBC WITH DIFF (TREND LYMPH)
- CMP
- CPK

**Risk Stratification**
- Q2-3 DAY PRN
  - D-Dimer
  - CPK >2X ULN
  - CRP>100, LDH > 245
  - Troponin elevated/up trending

**One Time Test for All Patients**
- HBV, HCV, HIV TESTING
- Influenza A/B, RSV
- Additional respiratory virus panel per ID
- Tracheal aspirate if indicated
- SARS-CoV2 (if not already sent)

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**RESPIRATORY FAILURE**

**Consider early intubation in ICU in Negative Pressure Room**

**Warning signs:** increasing FIO2, decreasing SpO2, increased respiratory rate, worsening CXR

**LUNG PROTECTIVE VENTILATION**
- Vt 6 mL/kg predicted body weight
- Plateau pressure < 30
- Driving pressure (Pplat-PEEP) < 15
- Target SpO2 92-96%, PaO2 > 60
- Starting PEEP 10

**CONSERVATIVE FLUID STRATEGY**
- Diuresis as tolerated by hemodynamics/creat
- No maintenance fluids

**PEEP TITRATION**
- Best PEEP by tidal compliance or ARDSnet low PEEP table

**PRONE**
- Early consideration if continuing hypoxemia or elevated airway pressures

**ADDITIONAL THERAPIES**
- Paralytics for vent dysynchrony
- Consider inhaled NO if available

**ECMO CONSULT**
- CALL ICU ATTG
- Pao2 < 80 on FIO2 100% despite proging, hemodynamic instability X 12 hours
- Age < 65
- BMI < 45
- Smoking hx < 30 ppy

**VENTILATOR METRICS**

- Tidal Volume (VT): The amount of gas the ventilator delivers
- FIO2: Fraction of inspired oxygen.
  - The percentage of oxygen you set.
- PEEP: Positive end expiratory pressure.
  - The ventilator will hold this set pressure once expiratory flow stops.
- Plateau pressure (Pplat): The pressure measured during an inspiratory pause. This is most reflective of the distending force in the lung by the delivered VT. Above 30 cm H2O increases risk of barotrauma.
- Compliance (alveolar compliance): Describes the degree of flexibility of the lungs and thoracic cavity. A more compliant lung can tolerate higher volumes without dangerous increases in pressure. COVID-19 lungs generally have normal compliance.
- Peak pressure: The pressure measured in the airways. This is not delivered to the lung.

**HEMODYNAMICS**
- Norepinephrine first choice vasopressor
- If worsening: Consider myocarditis/cardiogenic shock
- Obtain POCUS* echo, EKG, troponin, and CVO2 (formal TTE if high concern) and DIC labs

**CHANGES FROM USUAL CARE**
- NO ROUTINE DAILY CXR
- MINIMIZE staff contact in room
- HIGH THRESHOLD for bronchoscopy
- HIGH THRESHOLD for travel (to CT, etc)
- BUNDLE bedside procedures
- Appropriate guideline-based isolation for aerosol generating procedures:
  - Bronchoscopy
  - Intubation/extubation (see guidelines)
  - AVOID nebs, prefer MDIs

**USUAL ICU CARE**
- Sedation vacation daily / assess RASS goals
- Nutrition — start/continue TEN if tolerated
- GI ppx — ranitidine or lansoprazole
- DVT ppx — enoxaparin unless contraindicated
- Bowel regimen — daily
- Glycemic control — q6 hours
- POCUS* when needed
- Bundle care procedures and med administration
- ABCDE bundle

**THERAPEUTICS**

**All ICU Admissions**
- Low threshold for empiric abx
- WITH ID GUIDANCE
  - Consider hydroxychloroquine
  - Remdesivir through clinical trials

**Immune Modulation**
- Immune-modulatory therapies only in consultation with ID and critical care attending
- NO STEROIDS for resp failure, consider only in s/o additional indications (COPD, asthma) including possibly septic shock

*POCUS = Point of Care Ultrasound