CONTRIBUTORS

PRESENTATION

Dina Khateeb, DO

Sarah Medrek, MD

DISEASE PROGRESSION

Roozehra Khan, DO, FCCP

Viren Kaul, MD

TREATMENT

Yonatan Greenstein, MD, FCCP

Hassan Bencheqroun, MD, FCCP

Robert Parker, MD

RISK FACTORS

Anne Sutherland, MD

Deborah Jo Levine, MD, FCCP

Ellen Marciniak, MD

PROGNOSIS

Chidinma Chima-Melton, MD, FCCP

Kanta Velamuri, MD, MBBS, FCCP

EDITORS

Angel O. Coz Yataco, MD, FCCP

Christopher Carroll, MD, MS, FCCP

PRESENTATION

INCUBATION PERIOD

- Most cases occur about 4-5 days after exposure[19]
- 97.5% of patients will develop symptoms by day 12

SYMPTOMS, IN ORDER OF DECREASING FREQUENCY

SYMPTOM	FREQUENCY
Fever	83-99% during disease course [1-7]
	44-52% at presentation[5,8]
Cough	59-83%[1-9]
	Productive in 23-41% [1,3,5-7]
Fatigue	23-70%[1,4-7]
Myalgia	10-35%[1-6]
Dyspnea	May be as low as 19% in a mix of inpatients/outpatients[5]
	On presentation to the hospital ranges 31-76%[1,3,4,7,8]
Sore throat	5-17%,[1,2,5] although one case series reported rates up to 61%[9]
Headache	6-14%[1-5]
Diarrhea	2-15%[1-3,5,9]
Nausea	1-10%[1,2,5,6]
Rhinorrhea	4-6%[2,4,5,9]
Chest pain	2%[2,4]

SEVERITY

REQUIRING ICU	PERCENTAGE
Inpatients/outpatients	5%[5,10]
Hospitalized patients	23-32%[1-3,6]

TIME TO PRESENTATION

	NUMBER OF DAYS
Days to hospital admission	7-11[1,3,6]
Days from illness onset to ICU admission	9-12[4,6]

PRESENTATION (CONTINUED)

LABORATORY DATA

LABS	ABNORMAL LABORATORY FINDINGS	
Complete Blood Cell Count	Lymphocytopenia (~70%)[1-5,11]	
	Normal WBC count or leukopenia[1-5]	Elevated WBC can be seen in severe disease and is associated with nonsurvivors [11]
	Elevated neutrophils[1-5]	
	Mild Thrombocytopenia[11]	
Biochemistry[1-5, 11]	⬆ BUN and creatinine	
	⬆ AST, ALT, total bilirubin	
	⬇ albumin	
	⬆ LDH (~40%), D-dimer, CRP, ESR, troponin	
Coagulation Function	Prolonged prothrombin time[3,11,12]	
Biomarkers	Procalcitonin not elevated in the majority of cases and if elevated may be associated with secondary infection[1-5,12]	
	⬆ IL-6 and IL-10[6,12]	
	⬆ ferritin[6,12]	

Laboratory abnormalities associated with increased severity[3,6,11,12]

- Higher white blood cell and neutrophil counts
- Higher ESR, D-dimer, lactate dehydrogenase, creatinine kinase, troponin, and creatinine levels

IMAGING

Chest CT

- Up to 50% of COVID-19 positive patients may have a normal CT scan 0-2 days after onset of symptoms[13]
- Early Lung Abnormalities[1-5,12-15]
  - Multifocal or peripheral focal ground-opacities bilaterally in ~ 50-75% of patients
- Progressive/Severe Disease Abnormalities[6,7]
  - Consolidation with air bronchograms, crazy paving, bronchial wall thickening
- Atypical Findings[14,15]
  - Reverse Halo sign
  - Discreet pulmonary nodules with halo sign
  - Pleural Effusion
  - Mediastinal Lymphadenopathy

PRESENTATION (CONTINUED)

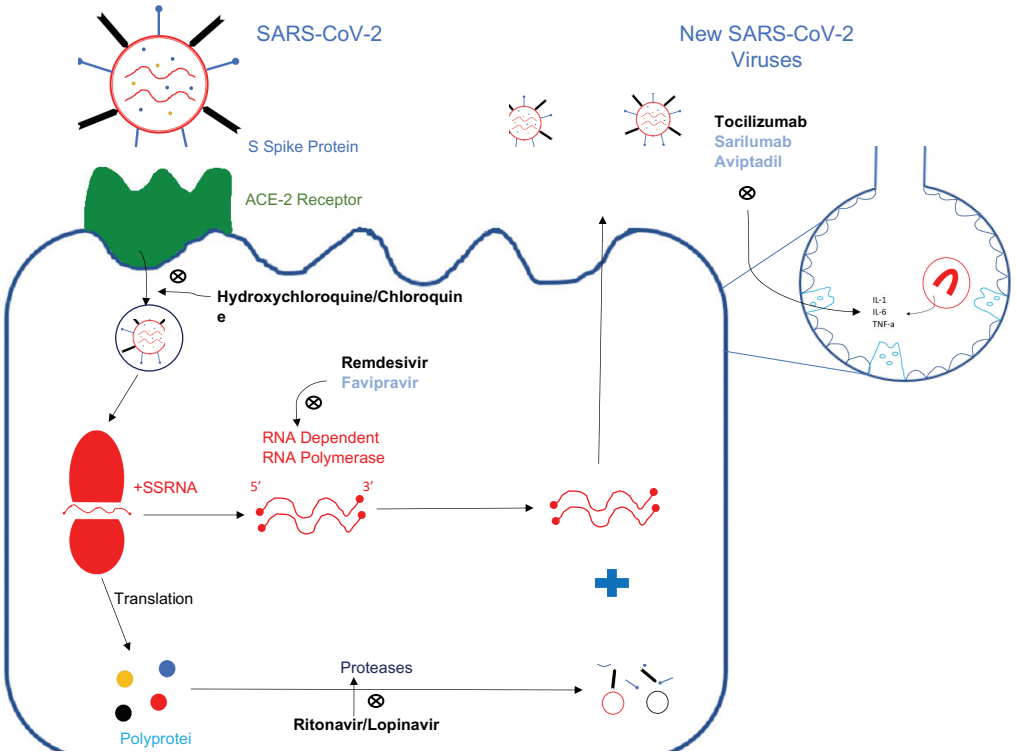
Point of Care Lung Ultrasound[16,17,18]

- Presence of B-lines
- Irregular, thickened pleural line with scattered discontinuities
- Subpleural consolidations
- Alveolar consolidation with air bronchograms associated with severe disease

CRITERIA FOR TESTING

- COVID should be considered in patients with new onset fever and/or respiratory symptoms (shortness of breath, cough).
- Given the large degree of community transmission, patients with an acute lower respiratory process that is severe with no apparent cause should also be considered for testing.

TREATMENT



RISK FACTORS

Risk Factors for ARDS[21]	Risk Factors for Death
Older age (>65y)	Older age (>60 [6,21-24]-65y[2])
Diabetes Mellitus	Male Sex [6,21,24]
D-dimer elevation (>1.0ug/mL)	Hypertension [6]
Ferritin (>300ng/mL)	Diabetes mellitus [6]
Lymphopenia (0.37 x 10^9/L)	D-dimer elevation (>1.0ug/mL) [6,20]
	Ferritin (>300ng/mL) [6,20]
	Lymphopenia (<0.02x10^9/L)[1] (0.37X10^9/L)[20]
	High sensitivity troponin I (>28pg/mL)[6]

DISEASE PROGRESSION

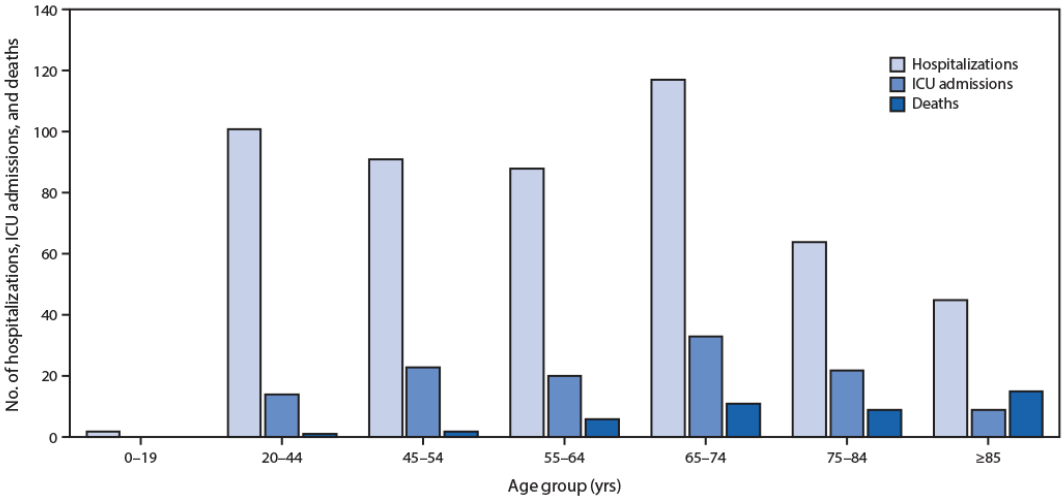
- 76% patients placed on NIV progressed to invasive ventilation.[4]
- Worse outcomes with septic shock, ARDS & AKI[5]
- Watch for sudden cardiac deterioration after lung recovery
- Median hospital LOS in severe patients 13 days (11.5 - 17.0) vs 11 days (10.0 - 13.0) in nonsevere patients[5]
- Respiratory failure, circulatory failure, and combined failure are the commonest causes of death[25]

PROGNOSIS

- The disease presentation and prognosis may vary significantly with 81% of people having mild pneumonias or no respiratory issues, 14% of cases having severe disease requiring supplemental oxygen and 5% being critical cases characterized by respiratory failure, shock or multiorgan disfunction.[3]
- Older age, high Sequential Organ Failure Assessment (SOFA) score, and blood d-dimer levels >1 μg/mL are risk factors for poor prognosis and in-hospital mortality in patients with COVID-19.[6]
- The MuLBSTA score may be useful in predicting poor prognosis in patients with COVID-19. The factors included in this score are multilobular infiltration, lymphopenia, bacterial co-infection, smoking history, hypertension, and age.[2, 26]
- Of the patients who recover, a significant number of patients will still have radiological abnormalities (ground-glass opacities on CT) at time of discharge.[27]
- Other serious complications other than acute respiratory distress syndrome ARDS (29%) included anemia (15%), acute cardiac injury (12%) and secondary infection (10%).[3]
- The current overall all-cause mortality rate in patients with COVID is 4.2%[28] – ranging from 0.5% to 5.9% depending on the country and the percentage of the population being tested in that country.
- Mortality also varies significantly depending on the age of the patient. Among people under 49, 0.2% of those who contracted the disease died, compared to 14.8% of those who were 80 and older.[29] Young children appear to be mildly affected but may serve as a vector for transmission.
- In the US, out of a total of 4,226 COVID-19 cases, there are 44 known deaths. Among these, 15 (34%) deaths were reported among adults aged ≥85 years, 20 (46%) among adults aged 65–84 years, and nine (20%) among adults aged 20–64 years.[30]

Coronavirus disease 2019 (COVID-19) hospitalizations, intensive care unit (ICU) admissions, and deaths, by age group — United States, February 12– March 16, 2020

Source: CDC Morbidity and Mortality Weekly Report (MMWR) March 18th 2020



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