A Review of COVID-19 Clinical Presentation

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ABSTRACT
COVID-19 is a present pandemic infecting at exponential rates. Clinical presentations include fever, fatigue, myalgia, and dry cough; however, many atypical presentations have also been reported. COVID-19 is found to have cause pregnancy complications and is said to produce a multisystem inflammatory syndrome in children. This article is a review on clinical presentation of COVID-19 including its atypical presentation and presentation in pregnancy, children, and old age.

Keywords: COVID-19, Fever, Multisystem inflammatory syndrome in children.

INTRODUCTION
Coronaviruses were important human pathogens;¹ however, by December 2019, a novel coronavirus which is designated as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was identified as the cause of a cluster of atypical pneumonia cases in Wuhan, China.² It soon became a pandemic, infecting lakhs of people across the world and causing over 100,000 deaths worldwide. WHO declared COVID-19 a pandemic on March 11, 2020.³

INCUBATION PERIOD
The incubation period of COVID-19 is thought to be 14 days.⁴–⁶ A study from China reported that symptoms would develop in 2.5% of infected individuals within 2 days and in 97.5% of infected individuals within 11 days and the median incubation period in this study was 5 days.⁷

RISK FACTORS
Comorbidities and other conditions that have been associated with severe illness and mortality include:⁸–¹¹
- Age >65 years
- Preexisting pulmonary disease
- Chronic kidney disease
- Diabetes mellitus
- Hypertension
- Cardiovascular disease
- Obesity
- Immunosuppressant therapy
- Transplant history
- HIV, CD4 count <299 cells.

Among patients with advanced age and medical comorbidities, presentation was severe¹² and according to the reports from China, Italy, and United States males had a higher number of deaths.¹³–¹⁵

PARTicular laboratory features have also been found to be associated with worse outcomes.¹⁶–¹⁸ These include:
- Elevated troponin
- Elevated creative phosphokinase
- Acute kidney injury.

CLINICAL PRESENTATION
The presentation varies from mild to critical disease with majority being not severe. A report from Chinese Center for Disease Control and Prevention states that out of the 44,500 confirmed cases 81% were having no or mild symptoms of pneumonia and 14% had dyspnea and hypoxia and 5% developed respiratory failure and multiorgan dysfunction and overall fatality rate was found to be 2.3%.¹⁰

A study from New York showed out of the 2,634 patients hospitalized for COVID-19, 14% were treated in intensive care unit and 12% received invasive mechanical ventilation and mortality rates among patients wanting ventilator support was 88%.¹³

According to Indian demographic report, 15.3% of patients required intensive care and 6.6% required mechanical ventilation.¹⁹

Pneumonia is the most frequent serious presentation of infection characterized by fever, cough, dyspnea, and bilateral infiltrates on X-ray.⁵,²⁰,²¹ Other presenting features include upper respiratory tract symptoms, myalgia, and diarrhea. Development of dyspnea several days after the onset of clinical symptoms is suggestive of COVID-19 (Tables 1 and 2). Conjunctivitis has also been described as presenting feature of COVID-19.²²

Dermatological findings, such as maculopapular rash, urticarial and vesicular eruptions, and transient livedo reticularis, have been reported.²³,²⁴

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First symptoms of GBS were lower limb weakness and paresthesia in Guillain–Barré Syndrome in COVID-19.9 Surgical treatment is the usual treatment protocol.9 Patients with Torsades de pointes may be hemodynamically stable on presentation, may remain stable, or may become unstable rapidly and without warning. Arrhythmias may be seen in those four patients.26

Acute Myopericarditis in COVID-19
Acute myopericarditis in COVID-19 was reported where the patient had only fever, fatigue, and dry cough with ECG showing diffuse ST elevation and elevated cardiac enzymes with normal coronary angiogram; however, cardiac MRI showed increased wall thickness with diffuse biventricular hypokinesis in apical segments with severe left ventricle (LV) systolic dysfunction, biventricular myocardial interstitial edema with circumferential pericardial effusion, these findings were consistent with acute myopericarditis.27

Large Vessel Stroke in COVID-19
Five cases of large vessel stroke were reported in patients younger than 50 years of age in United States. Patient initially had presented with cough, headache, and chills for 1 week and were tested positive for COVID-19. On admission, these five patients had mean National Institute of Health Stroke Scale (NIHSS) score was 17, consistent with severe large vessel stroke with one patient having previous history of stroke. Apart from stroke, coagulopathy and vascular endothelial dysfunction have been proposed as complications of COVID-19.28

COVID-19 in Pregnancy
Pregnancy and childbirth do not necessarily increase the risk of COVID or worsen the clinical course in comparison with non-pregnant females. There are added issues in pregnancy, fever, and hypoxemia from severe pneumonia may increase the risks for preterm labor, premature rupture of membranes, and abnormal fetal heart rate patterns. Fever during the first trimester may be associated with an increased incidence of congenital anomalies like neural tube defects.29

COVID-19 in Children
COVID-19 does not have an age predilection, it can involve all age groups, and many studies have shown presentation in children. The symptoms of COVID-19 in children are very much similar to adults and appears to be milder in children than in adults, although severe cases have been reported. Fever and cough are the most common reported symptoms in children. In young infants, fever without an obvious source and minimal respiratory symptoms have also been seen. Less common symptoms included fatigue, rhinorrhea/nasal congestion, diarrhea, and vomiting.

Table 1: Differences between influenza and COVID-19

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Influenza</th>
<th>COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incubation period</td>
<td>1–4 days</td>
<td>1–14 days</td>
</tr>
<tr>
<td>Children Risk factors</td>
<td>&lt;10%</td>
<td>30–35%</td>
</tr>
<tr>
<td>Cardiovascular disease and ARDS</td>
<td>&lt;1%</td>
<td>3–4%</td>
</tr>
</tbody>
</table>

Several complications have been described:
- Acute respiratory distress syndrome17
- Arrhythmias14
- Cardiogenic shock
- Pulmonary embolism.25

COVID-19 and Influenza: Similarities and Differences

Similarities
- Disease presentation is similar.
- Produce respiratory illness with a wide range of severity.
- Transmitted by contact, droplets, and fomites.
- To prevent: hand hygiene and good respiratory etiquette (coughing into your elbow or into a tissue and immediately disposing of the tissue).

Atypical Presentations

Arrhythmias in COVID-19
Majority of patients with COVID-19 will not have any symptoms or signs of arrhythmias; however, arrhythmias may be seen in patients having other cardiovascular complications, such as myocardial infarction, electrolyte disturbances, and drugs, causing QT prolongation including hydroxychloroquine used in COVID-19 prophylaxis. Arrhythmias vary from atrial arrhythmias to life-threatening Torsades de pointes. Patients with Torsades de pointes may be hemodynamically stable on presentation, may remain stable, or may become unstable rapidly and without warning should be treated according to the usual treatment protocol.9

Guillain–Barré Syndrome in COVID-19
Guillain–Barré syndrome (GBS) was found in five patients from Italy. First symptoms of GBS were lower limb weakness and paresthesia in four patients and facial diplegia followed by ataxia and paresthesia in one patient. The interval between the onset of symptoms of COVID-19 and first symptom of GBS ranged from 5 to 10 days in those four patients.26

Table 2: Differences in symptom presentation between influenza and COVID-19

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Influenza</th>
<th>COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>85–90%</td>
<td>82–87%</td>
</tr>
<tr>
<td>Cough</td>
<td>90–95%</td>
<td>36–44%</td>
</tr>
<tr>
<td>Breathlessness</td>
<td>60–70%</td>
<td>40–50%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>15–18%</td>
<td>60–63%</td>
</tr>
<tr>
<td>Myalgia</td>
<td>5–6%</td>
<td>30–38%</td>
</tr>
<tr>
<td>Gastrointestinal symptoms</td>
<td>12–15%</td>
<td>30–35%</td>
</tr>
<tr>
<td>Rhinorrhea</td>
<td>80%</td>
<td>10%</td>
</tr>
<tr>
<td>Sore throat</td>
<td>35%</td>
<td>&lt;5%</td>
</tr>
</tbody>
</table>
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CONCLUSION
Pandemic COVID-19 in young individuals may be asymptomatic or mild and may remain undiagnosed, whereas in old age it presents as a severe illness with atypical presentations also. In pregnant females, there is no vertical transmission proven so far; however, droplet transmission during feeding is possible and fever during the first trimester can produce neural tube defects; hence, a high index of suspicion and laboratory confirmation of COVID has to be initiated.

REFERENCES