



Review Article

Documented clinical manifestations of COVID-19 Pandemic: A minuscule summary

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ABSTRACT

COVID-19 is very novel infectious disease which caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a strain of coronavirus. WHO officially named it, "COVID-19 dated on 11th February 2020. It was first observed in Wuhan, China, in late December 2019 and hence, its current outbreak was officially declared pandemic on 11 March 2020 by WHO (World Health Organization). There is no effective and specific treatment or vaccination existed for this pandemic till now. COVID-19 usually observed with systemic and various respiratory manifestations like high grade fever, sweating, cold, sneezing, dry cough, pneumonia, muscle pain, vomiting, headache, dizziness, loose motion and diarrhea. The declared official virus name is similar to SARS-CoV, a strain of coronavirus that caused the previous epidemic called severe acute respiratory syndrome (SARS) in 2002-2004, hence WHO named it "COVID-19 virus" to avoid any confusion when sharing or exchanging the clinical or medical information/data with the public.

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1. Introduction

COVID-19 is pandemic which majorly affects the lung. Its 6.5 million cases are recorded and more than 3 lakhs death reported globally dated on 1st June 2020 by WHO (World Health Organization). Presence of Presymptomatic carriers in many communities and presymptomatic transmission has been documented as well as asymptomatic carriers have been reported and no asymptomatic transmission has been documented.^{1,2} The incubation period for COVID-19 in infected patients was observed by physicians to be about of five days and 97.5% of COVID-19 patients became symptomatic within 11-12 with documented fatality rate of 2-3%. Fatality due to infection of COVID-19 was majorly observed in old aged patients above 55 years as well as in patients which have any clinical history of diseases like from severe heart disease, high blood pressure, diabetes and lung infections.² Children are relatively found unaffected by this virus. However, some of critically-ill children and infants under 12 months likely to be seriously affected due to

COVID-19 infection with observed low number of pediatric deaths.³

1.1. Symptoms

Common observed symptoms of COVID-19 in affected patients are very non specific like majorly recognized having fever (85-90%), cough (65-70%), fatigue (35-40%), sputum production (30-35%), shortness of breath (15-20%), myalgia/arthritis (10-15%), headaches (10-36%), sore throat (10-15%), chills (10-12%), pleuritic pain, nausea, vomiting, nasal congestion (<10%), diarrhea (<5%), palpitations, chest tightness, seizures, paraesthesia, altered consciousness, hepatic disorders and erythematous rash. COVID-19 patients also have clinically documented for experiencing olfactory dysfunction like conjunctivitis, loss of smell and taste including neurological disorders like anosmia, hyposmia, ageusia, dysgeusia.^{4,5}

1.2. Diagnosis

The conclusive and specific clinical test for COVID-19 is the real-time reverse transcriptase-polymerase chain

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reaction (RT-PCR) test with observed sensitivity in-between 80-97%. It is also pooled with Meta-analysis with reported sensitivity of 89%. However, CT scan findings have been used as a surrogate diagnostic test to diagnose COVID-10 by many experienced radiologists.⁶

1.3. Markers

Some of common ancillary laboratory findings have been documented by physicians based on cohort study of 138 hospitalized COVID-19 patients which were found to be more specific markers like lymphopenia, increased prothrombin time, increased lactate dehydrogenase, mild elevations of inflammatory markers such as CRP, ESR, D-dimer, OT/PT level.⁷

1.4. Prognosis & Complications

Common observed complications are documented in various clinically studies of hospitalized COVID-19 patients which were acute respiratory distress syndrome (ARDS), acute cardiac injury, elevated troponin levels, myocardial ischemia, cardiac arrest, myocarditis, viral encephalitis, bacterial pneumonia, sepsis, acute kidney injury, multiorgan failure, secondary hemophagocytic lymphohistiocytosis (a cytokine storm syndrome), acute pulmonary embolism, deep vein thrombosis. In the some of COVID-19 patients studies, 5-7% of patients required ventilation, whether invasive or non-invasive. COVID-19 patients who were referred for intensive care unit (ICU) were older patients and 6% of them required ventilations whether invasive or non-invasive those have other clinical comorbidities like hypertension, diabetes, cancer, heart strokes, brain strokes, cancer and immunosuppression. Observed clinical complications in pediatric patients were their multisystem inflammatory state which resembles to Kawasaki disease and toxic shock syndrome while experiencing abdominal pain, myocarditis and other gastrointestinal symptoms.⁸

1.5. Etiology

COVID-19 virus is reported as a member of the Betacoronavirus genus, one of the genera of the Coronaviridae family of viruses. It is single-stranded RNA viruses and zoonotic. It can invade in host body via cellular entry through its virion spike protein attachment to the angiotensin-converting enzyme 2 (ACE 2) receptor. This receptor is found in alveolar cells of the lung epithelium due to which underlying various respiratory symptoms are developed in COVID-19 patients and can also affect cardiovascular system via the same ACE-2 receptor.⁹

1.6. Transmission

Although COVID-19 is declared zoonosis and highly contagious. Its transmission is predominantly happened from human to human like in very similar way to the common cold, via come in contact with droplets of infected patients like upper respiratory tract secretions e.g. from sneezing or coughing with no observed vertical transmission.¹⁰

1.7. Clinical Imaging

The threshold of CT (Computed Tomography) scan was adopted primarily as fast and most available radiological resources to observe changed patterns like Ground Glass Opacity (GGO) in Computed Tomography Pulmonary Angiogram (CTPA) in COVID-19 severe patients with worsen cardio-respiratory status when compared to control. But, CT scan cannot possible routinely for large cohorts clinical studies of patients due to its associated additional higher risks like increased risk of viral transmission in staff, patients and carers-takers as COVID-19 positive and negative patients when come into close proximity in the radiology department as well as when exposed with additional ionizing carcinogenic radiation exposures. Various CT observation have been reported in COVID-19 patients were ground-glass opacities (GGO): bilateral, subpleural, peripheral; crazy paving appearance (GGOs and inter-/intra-lobular septal thickening); air space consolidation; bronchovascular thickening in the lesion and traction bronchiectasis. Other reported atypical CT findings were documented in some of severely ill COVID-19 patients to raise concern for superadded bacterial pneumonia by observing mediastinal lymphadenopathy, pleural effusions, multiple tiny pulmonary nodules, pneumothorax and cavitation. A very holistic approach of nuclear medicine have been reported successful to treat lung lesions in very severely ill COVID-19 patients is the invasion of FDG (Fluorodeoxyglucose) followed with PET-CT scan. CT scoring system for COVID-19 was also chosen for collecting the observations worldwide based on various performed cohort studies called COVID-RADS (COVID-19 Reporting and Data System) for aesthetic clinical/ medical documentation.¹¹ The following patterns of ultrasound of lungs of COVID-19 patients have been observed to have bilateral and posterobasal predominance, multiple B-lines, representing thickened subpleural interlobular septa, irregular, thickened pleural line with scattered discontinuities, subpleural consolidations associated with discrete, localized pleural effusion and alveolar consolidation.¹²

1.8. Treatment

There is no such specific treatment or vaccine exists for COVID-19 till yet because it requires more reliable and sensitive clinical and pharmaceutical, statistical

observations and analysis approaches. So, it is better to acquire multipronged approach with patience and being a responsible human beings as more civic individuals to inculcates meticulous personal hygiene, honest social distancing having distance of at least 2 to 3 meters, use of mask, proper washing of hands, to avoid large crowds or crowded environments and where necessary, move for self-isolation and self-quarantine. Country clinical/medical govern bodies and respective organizations must have to focused to improve healthcare facilities for performing more effective and rapid diagnosis, quarantine/suspected cases and provide more potent supportive therapies like physician/clinical health experts prescribed empirical treatments with antibiotics, antivirals and NSAIDs including more improved mechanical ventilation and extracorporeal membrane oxygenation (ECMO) to improve “proning” clinical practices to treat severely ill COVID-19 patients.¹³

2. Conclusions

This brief summary of COVID-19 is based on various reported and documented database of its related clinical implications and observations till now (June 2020) from the time of its originating in Wuhan, Hubei province, China (Late December 2019). Hence, this precise generalized medical information might be helpful for better understanding of common people to recollect the COVID-19 associated clinical highlights to make them more aware and its associated risk factors.

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