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6. Clinical Synopsis of Covid 19- An Overview

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6.1 Introduction:

As the SARS-CoV-2 pandemic spread internationally in early 2020 with substantial health and economic effects, so did the disease itself. The coronavirus illness 2019 (COVID-19) has an exponential surge in scientific publications linked to the disease's natural history and the development of diagnostic and treatment techniques. Concerns have been expressed about the scientific quality of the literature despite the need to quickly transmit information to the medical community, government organisations, and the general public. Any of the following four stages of research might lead to a study that is poorly conducted: (1) the selection of a research question relevant to patient care, (2) the quality of the research design, (3) the suitability of publication, and (4) the quality of the research reports. As a result, evidence-based medicine relies on a hierarchy of evidence, which ranges from the highest level of randomised controlled trials (RCTs) to the lowest level of clinical case studies and case reports. This evaluation was conducted because of the consequences for clinical care and policy decision making, as well as concerns about methodological and peer-review standards for COVID-19 research (5). Specifically, we conducted a systematic review to identify COVID-19 clinical literature and matched it to historical controls to evaluate the following: (1) the methodological quality of COVID-19 studies using established quality tools and checklists, (2) the methodological quality of COVID-19 studies stratified by median time to acceptance, geographical regions, and journal impact factor, and (3) a comparison of COVID-19 methodological quality to matched controls.

6.2 Background:

a. CoV-2, a new coronavirus that shares many characteristics with SARS-CoV, is responsible with COVID-19, an acute respiratory illness.
b. Both symptomatic and asymptomatic people can transmit the virus through close contact (less than 6 feet) with respiratory droplets from the infected person. Aerosols and contact with fomites may potentially be a means of transmission, but these are not considered to be the most common.
c. SARS-CoV-2 aetiology includes clinically relevant aspects.:

- Viral spike protein binds to ACE2 receptors on cells, allowing infection. Type 2 transmembrane serine protease is required for cell entry in order to cleave the ACE2 receptor and activate the viral spike protein.
- infected epithelial cells of the nose and lungs, together with pneumocytes.
- A hypercoagulable state and a dysregulated inflammatory response are the outcome of viral replication speeding up and the breakdown of the epithelial-endothelial barrier in later stages.

- An imbalance in the renin-angiotensin-aldosterone pathway may potentially contribute to tissue damage caused by an infection. –

d. On March 11, 2020, the World Health Organization proclaimed COVID-19 a global epidemic. As of June 14, 2021, there have been over 252 million cases worldwide, including over 5 million deaths.
e. COVID-19-related mortality is highly variable and influenced by the patient's age, severity of illness, and other medical conditions. The death toll is estimated at

- Overall, 0.3% to 2.3%, are affected.
- 10% - 23% for patients in the hospital.
- 26% to 50% of patients admitted to the ICU.
- 38% to 88% of patients requiring mechanical breathing or extracorporeal membrane oxygenation will require invasive ventilation (ECMO).

6.3 Evaluation:

a. There is a 2-14 day incubation period, with a mean of 5 days, before mild to severe symptoms appear.
b. Symptoms may include:

- Fever; In few Neither a fever nor chills are present.
- shortness of breath, coughing or difficulty breathing
- a headache, muscle or body aches, dizziness, or fatigue are all possibilities.
- Congestion, a runny nose, or a sore throat are all possibilities.
- a new olfactory or olfactory loss.
- nauseousness, vomiting, diarrhoea, stomach discomfort, or anorexia.
- A loss of consciousness.
- rash.

c. In up to 30% of individuals, an asymptomatic infection may arise.
d. Nucleic acid amplification test (NAAT) for SARS-CoV-2

- NAAT is now the most reliable method for confirming a diagnosis (Strong recommendation).
- Even if clinical suspicion of COVID-19 infection is low, NAAT is indicated for those with symptoms who live in the community (Strong recommendation).
- Patients who are asymptomatic but require hospitalisation due to immune-compromise in locations with a high frequency of COVID-19 may be advised to use NAAT.

e. Nucleic acid testing for the SARS-CoV-2 virus can be done on a variety of specimens. Nasopharyngeal swabs, mid-turbinate swabs, and nasal swabs are the most routinely utilised upper respiratory specimens.
f. First 2 weeks after symptoms begin, serologic testing is not indicated for the diagnosis of SARS-CoV-2 infection (Weak recommendation).

6.4 Management:

a. This decision should be taken on an individual basis, taking into account the patient's condition and the resources available.

- There is no need to hospitalise patients with a minor disease (i.e., no viral pneumonia or hypoxia).
- There are some patients who require hospitalisation because of their comorbidities and the potential for clinical advancement.
- Pneumonia, hypoxemia, acute respiratory distress syndrome (ARDS), sepsis and septic shock, cardiomyopathy, arrhythmia, and acute renal injury are all examples of severe symptoms that necessitate hospitalisation and support.

b. For patients who are not in the hospital.

- Instruct patients to look out for signs and symptoms that indicate an urgent need for medical attention (Strong recommendation).
- Antiviral or immunomodulatory medication such as corticosteroids are not suggested.
- The use of monoclonal antibody spike protein inhibitors may be investigated in patients with mild to moderate COVID-19 who have a high risk of clinical progression (Weak recommendation).

c. Treatment guidelines from the National Institutes of Health (NIH).

- For patients in the hospital:
    - Outside of a clinical trial, monoclonal antibody spike protein inhibitors are not indicated.
    - thromboprophylaxis with low-molecular weight heparin (LMWH), unfractionated heparin (UFH), or fondaparinux at prophylactic doses is indicated (Strong recommendation).

- If no requirement for supplement oxygen:
    - Antiviral or immunomodulatory therapy is not necessary in this case.
    - Patients with moderate disease may be eligible for remdesivir if they are at high risk of clinical deterioration.
    - dexamethasone and other corticosteroids are not recommended unless there is a clinical need for them (Strong recommendation).

- When supplemental oxygen is needed but not high flow device, noninvasive ventilation, invasive mechanical ventilation or ECMO, consider the following options in order of preference:

- Remdesivir 200 mg IV for one day, followed by remdesivir 100 mg IV for four days or until discharge, whichever occurs first (Weak recommendation).
- An IV or oral dose of dexamethasone 6 mg per day for up to 10 days or until discharge is recommended (Weak recommendation).
- if remdesivir is unavailable, dexamethasone (Weak recommendation).
- If significant clinical improvement has not occurred by day 5, remdesivir may be extended to a maximum of 10 days.

- Noninvasive ventilation and high-flow devices should be considered in order of preference if oxygen supply is required, but not invasive mechanical ventilation or ECMO.

  - For up to 10 days or until discharge, dexamethasone 6 mg IV or orally may be administered (Strong recommendation).
  - dexamethasone (at the stated dose and duration) plus remdesivir 200 mg IV for 1 day followed by remdesivir 100 mg IV for 4 days or till discharge, whichever occurs first (Weak recommendation).
  - individuals recently discharged from a hospital with increased oxygen demands and systemic inflammation:

    - In some cases, an additional tocilizumab 8 mg/kg real body weight IV or baricitinib 4 mg daily for 14 days or until discharge to dexamethasone (with or without remdesivir) may be explored (Weak recommendation).
    - if tocilizumab and baricitinib are unavailable, sarilumab and tofacitinib may be considered instead (Weak recommendation).

  - Using remdesivir alone is not suggested.

- ECMO or invasive mechanical ventilation:

  - dexamethasone 6 mg IV or orally for up to ten days or till discharge is suggested" (Strong recommendation).
  - dexamethasone and tocilizumab 8 mg/kg actual body weight IV (maximum 800 mg) may be considered for patients within 24 hours of admission to the intensive care unit (Weak recommendation If tocilizumab is neither available or practical to use, sarilumab 400 mg IV infusion over an hour using a preparation for subcutaneous injection may be investigated (Weak recommendation).
  - It is not advised to take remdesivir by itself.

- For all hospitalized patients satisfying requirements for dexamethasone, other corticosteroids such prednisone, methylprednisolone, or hydrocortisone may be given if dexamethasone is unavailable.

- Remdesivir is the only medicine for COVID-19 licenced by the FDA, but professional organisations' advice on its use vary.

- There are a few other treatments approved by the FDA for emergency use, but their efficacy in COVID-19 is unknown.

- Plasma from patients who have recently recovered from an illness.
- Adults with verified or imminent respiratory failure who are admitted to the ICU for treatment with a blood purification system

d. Hypoxemia and acute respiratory distress syndrome (ARDS), septic shock, and coagulopathy may necessitate further treatment.
e. Supportive care and therapeutic management of COVID-19 are discussed in length in the section under "Management of COVID-19".

Common Clinical Signs and Symptoms:

When SARS-CoV-2 causes COVID-19, the lower respiratory tract is affected (see Table 1). 5,12-14 Fever and a cough are the most common symptoms in most cases. Patients with a "dry" or "nonproductive" cough are more likely to have sputum production than those with a more productive cough.

Dyspnea can be reported or observed, and severity of the disease is associated with the presence of this symptom. 15 Some of the other symptoms include exhaustion and myalgias, as well as pharyngitis and congestion. Diarrhea is a possible gastrointestinal symptom in a few persons.

Table 1: Frequency of Reported Symptoms With COVID-19

Symptom	Observed in Patients With COVID-19(%)
Fever	89-99
Cough	60-79
Fatigue	23-70
Sputum Production	23-24
Dyspnea	19-31
Myalgia	15-35
Headache	8-14
Sore throat	14
Chills	12
Congestion	5
Diarrhea	3-10

As a result, the symptoms of COVID-19 may not be easily distinguishable from those of other viruses. Providers must have a high level of clinical suspicion and rely on the most frequent signs of the disease to make a diagnosis given the breadth of community transmission of SARS-CoV-2. Depending on geographical differences in testing ability, clinical diagnosis may become the norm.

Instructions for home quarantined person:

- The quarantine period at home is 14 days after contact with a confirmed case or earlier if a suspect case is negative on laboratory tests..
- As frequently as possible, use soap and water or an alcohol-based hand sanitizer to thoroughly clean your hands. Do not share household things, such as plates and bowls and utensils such as cutlery, towels, and bedding, with other members of your family or household.
- All the time, wear a surgical mask. Every six to eight hours, the mask should be replaced and thrown away. It is not permitted to reuse disposable masks.
- Close contact masks used in home care should be sterilised with sodium hypochlorite and then disposed of either by burning or deep burial.
- It is important to treat the previously used masks as 'possibly infectious'. He/she should go to the nearest medical facility as soon as possible if any symptoms emerge.

6.5 Conclusion:

Coronavirus disease (COVID-19) is a virus-induced sickness. There is a new coronavirus out there, and it's been spreading like wildfire. Close contact between people is regarded to be the primary mode of transmission. Resources on crucial topics including symptoms, hazards, and how to protect yourself and your family can be found on this page.

On our website, we also offer pages on COVID-19 testing and vaccines, including the ones that have been approved in the United States and others that are still in development.

6.7 References:

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