S-05:Unmasking Long-COVID: Insights into Causes, Consequences, Pathogenesis, and Diagnosis

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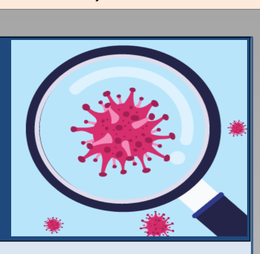
1. Long-COVID: Definition and Prevalence



- Long-COVID, also known as post-acute COVID-19 syndrome or long-haul COVID, refers to the persistence of symptoms and functional disabilities beyond the acute phase of COVID-19 infection.
- The definition of long-COVID varies, but it is generally characterized by persistent symptoms and/or functional disability and/or pathological changes that last for at least 12 weeks after the initial infection.
- The prevalence of long-COVID varies widely, with studies reporting rates ranging from 4.5% to 87.9% in adults.

2. Clinical Spectrum of Long-COVID: Symptoms and complications

- Individuals who experience more than five symptoms during the first week of illness are more likely to develop long-COVID.

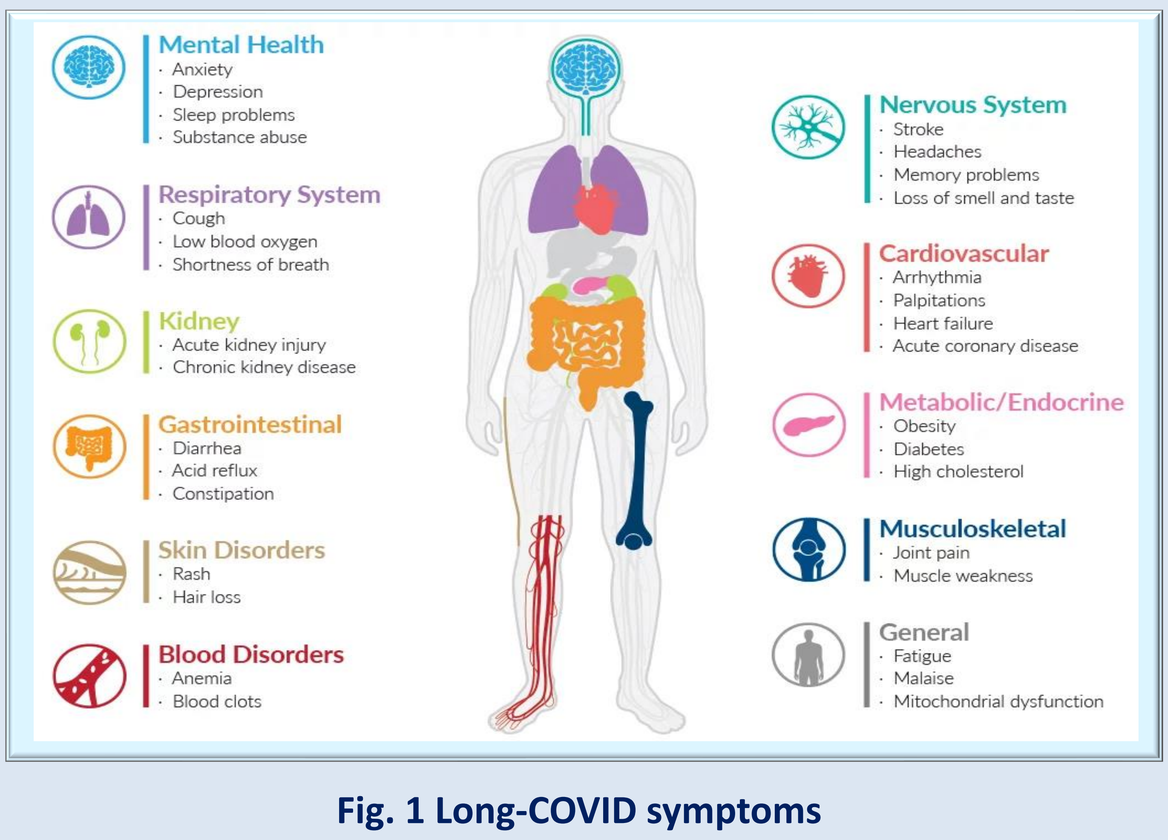


Fig. 1 Long-COVID symptoms

Some long-COVID Complications:

1. Cardiopulmonary sequelae
2. Endocrine complications
3. Neurological complications
4. Post-COVID-19 immune-mediated manifestations

3. Risk factors of Long-COVID

Demographic Characteristics:

Fig. 2 Long-COVID demographic risk factors

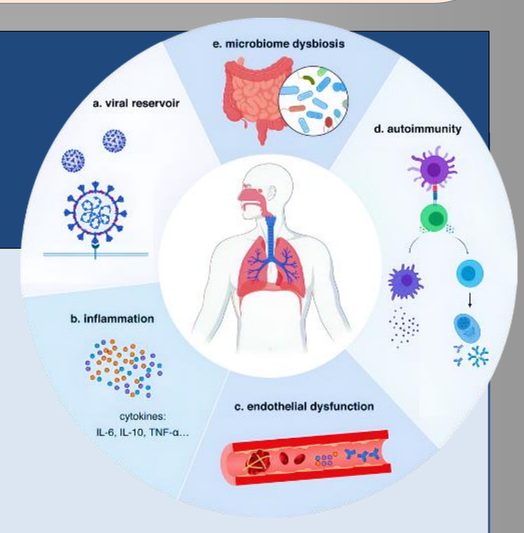
Clinical Characteristics:

- Co-existing illnesses (such as asthma).
- Respiratory at the onset.
- Neurological problems at the onset.
- Gastrointestinal problems at the onset.
- Prior hospitalization during acute COVID-19.

Conclusion

Long-COVID is a genuine illness that can lead to chronic conditions necessitating comprehensive care.

4. Pathogenesis of Long-COVID



The pathogenesis of long-COVID may involve:

- Persistent virus presence.
- Immune dysregulation can occur with or without reactivation of infections, such as Epstein-Barr virus (EBV) and human herpesvirus 6 (HHV-6).
- Microbiome dysbiosis.
- Molecular mimicry can lead to autoimmune reactions and immune system priming.
- Microvascular blood coagulation due to endothelial dysfunction.

5. Challenges in Diagnosing Long-COVID

- Till now there is no specific diagnosis for long-COVID patient so we need to asses the symptom and exclude other diseases.

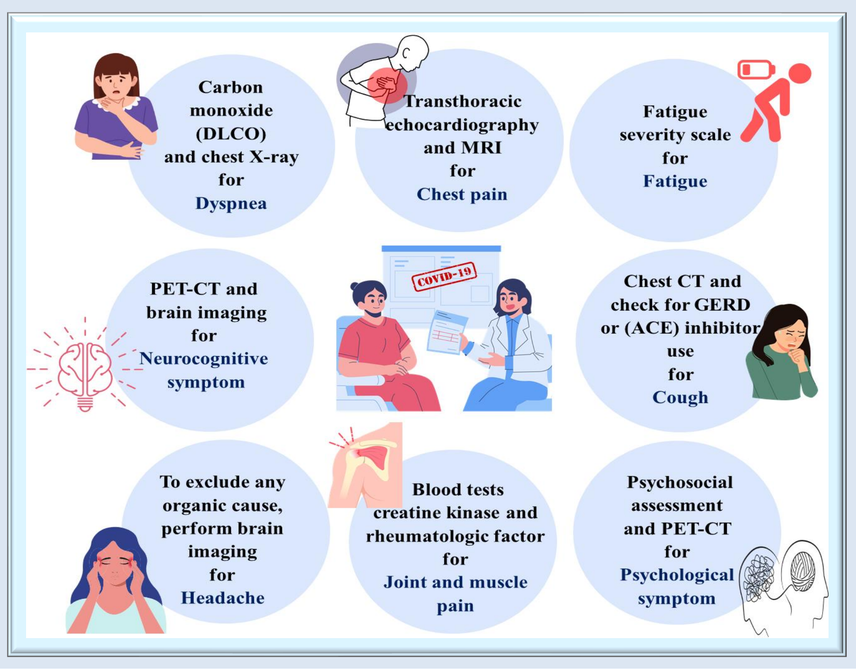


Fig. 3 Long-COVID diagnosis

6. Role of AI in Long-COVID Diagnosis and early detection

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