

AB027. Long coronavirus disease (COVID-19) syndrome: a comprehensive review of its effect on various organ systems and recommendation on rehabilitation plans

Michael Zhipeng Yan, Ming Yang,
Dennis Tse-Wah Law, Wing-Sze Yuen,
Ching-Lung Lai

Medicine, The University of Hong Kong, Hong Kong, China
Correspondence to: Michael Zhipeng Yan. Medicine, The University of Hong Kong, Hong Kong, China. Email: u3537821@hku.hk.

Background: Despite the majority of coronavirus disease (COVID-19) survivors fully recovered within a few weeks. Many COVID-19 survivors suffer from long-lasting problems similar to the multi-organ damage in acute infection, or continuous symptoms after discharge. Post-COVID-19 Syndrome (PC19S) refers to the diseases in survivors 4 months after initial symptoms onset. It requires further understanding of the systemic effects, manifestations and rehabilitations of PC19S in survivors to restore functional recovery.

Methods: A literature search was done on databases to evaluate the systemic effects, its manifestations and rehabilitations of PC19S patients. The keywords were: Long COVID-19 Syndrome, Post-COVID-19 Syndrome, Rehabilitations.

Results: Multi-organ impairments persist after recovery in PC19S. Common cardiopulmonary presentations were persistent lung pathology (63%), pulmonary function deficit (54%), diffusion impairment (47.2%), endothelial-cell dysfunctions, vasculitis changes and myocarditis (60%). Haematological impairments included elevated D-dimer (30%), persistently elevated cytokines and white-blood-cells (90%), and decreased lymphocytes and platelet counts. Renal injury such as acute-kidney-injury (<1%), decreased glomerular-filtration-rate (60%) and chronic-renal-failure

(1.4%) were observed. A three-tier rehabilitation system was proposed: low-risk patients were managed with surveillance and telemedicine consultations; moderate-risk patients by community-therapy teams with regular follow-up, and high-risk patients by multidisciplinary care with specialist one-stop clinics. A six-week rehabilitation program gave promising clinical outcomes.

Conclusions: The literature on long-term effects of PC19S, effective rehabilitation programs, cost per quality-adjusted-life-year and patient demographics are limited to date. Standardization of PC19S-severity-reporting-system is required to facilitate clinical communications and evaluations of disease progressions. A clinical scoring system that includes functional assessment, self-reported symptoms, prognosis of multiorgan involvement, biomarkers, radiological findings at different times after discharge should be established to stratify the risk of patients and predict morbidity and mortality to facilitate rehabilitations. The three-tier rehabilitation system should start early to improve long-term recovery of PC19S patients. Revision of rehabilitation guidelines is required to optimize function, disability and earlier return to premorbid status.

Keywords: Long coronavirus disease syndrome (long COVID-19 syndrome); post-COVID-19 syndrome; prevention; rehabilitations

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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