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Cardiopulmonary recovery after COVID-19: an observational prospective multicentre trial

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100 days after COVID-19 onset, a high portion of patients exhibit persisting symptoms and cardiopulmonary impairment. Still, a marked improvement of symptoms, pulmonary function and CT pathologies was found at follow-up. <https://bit.ly/35YP13g>

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ABSTRACT

Background: After the 2002/2003 severe acute respiratory syndrome outbreak, 30% of survivors exhibited persisting structural pulmonary abnormalities. The long-term pulmonary sequelae of coronavirus disease 2019 (COVID-19) are yet unknown, and comprehensive clinical follow-up data are lacking.

Methods: In this prospective, multicentre, observational study, we systematically evaluated the cardiopulmonary damage in subjects recovering from COVID-19 at 60 and 100 days after confirmed diagnosis. We conducted a detailed questionnaire, clinical examination, laboratory testing, lung function analysis, echocardiography and thoracic low-dose computed tomography (CT).

Results: Data from 145 COVID-19 patients were evaluated, and 41% of all subjects exhibited persistent symptoms 100 days after COVID-19 onset, with dyspnoea being most frequent (36%). Accordingly, patients still displayed an impaired lung function, with a reduced diffusing capacity in 21% of the cohort being the most prominent finding. Cardiac impairment, including a reduced left ventricular function or signs of pulmonary hypertension, was only present in a minority of subjects. CT scans unveiled persisting lung pathologies in 63% of patients, mainly consisting of bilateral ground-glass opacities and/or reticulation in the lower lung lobes, without radiological signs of pulmonary fibrosis. Sequential follow-up evaluations at 60 and 100 days after COVID-19 onset demonstrated a vast improvement of symptoms and CT abnormalities over time.

Conclusion: A relevant percentage of post-COVID-19 patients presented with persisting symptoms and lung function impairment along with radiological pulmonary abnormalities >100 days after the diagnosis of COVID-19. However, our results indicate a significant improvement in symptoms and cardiopulmonary status over time.