

Evaluation of Lung Functionality after Discharge in Hospitalized Patients with Severe COVID-19 Pneumonia

Langella V¹, Asti A¹, Di Palma G¹, Maresca G¹, Pomponi D¹, Russo S² and Russo V³

¹Department of Internal Medicine, " S. Maria di Loreto Nuovo ", Covid Center Hospital, ASLNA1, Napoli (IT), Italy

²Department of Internal Medicine, " S. Paolo " Hospital, ASLNA1, Napoli (IT), Italy

³Department of Medical Translational Sciences, University of Campania, Monaldi Hospital, Napoli (IT), Italy

COVID19 causes SIRS with extensive lung damage that requires follow-up to evaluate possible sequelae. Based on British Thoracic Society suggests, considering elevated number of patients and a reasonable use of medical resources, we evaluated patients discharged for severe pneumonia with spirometry at 5 and 12 weeks and DLCO at 12 weeks only in patients with spirometric abnormality. Functional test were correlated with CTscan. From November'20 to March'21, 86 patients (37F, age 53.7) were enrolled. 61 refused follow-up or didn't perform examinations, 234 with history of smoking, emphysema, asthma/COPD were not considered. Pulmonary microembolism was detected in 54. To avoid extreme data we used a stepwise regression analysis, including demographics data, pre-existing conditions, severity and ICU admission. At 5 weeks, an alteration was found in 18 (20.9%). At 12 weeks, an alteration was found in 13 (15.1%), with a prevalence of 4.6% of a restrictive pattern and 10.4% of an obstructive pattern. The radiological alterations was resolved in

almost all patients (90.7%). A mild alteration DLCO was found in 3 patients, all with restrictive spirometry pattern. In 4(3F) there was persistence of microembolism. Patients undergoing pulmonary rehabilitation program showed a greater and rapid improvement. In our observation, a lower prevalence of impaired respiratory function (15.1%) was found compared to other studies. Our data, like others, support the hypothesis that early functional evaluation could overestimate COVID damage. Pulmonary rehabilitation must be considered as a valid strategy.

References

1. British Thoracic Society (2020) British Thoracic Society Guidance on Respiratory Follow Up of Patients with a Clinico-Radiological Diagnosis of COVID-19 Pneumonia.
2. George PM, Barrat SL, Conliffe R, Desai SR, Devaraj A, et al. (2020) Respiratory follow up of patients with COVID-19 pneumonia. *Thorax*.