

# **Preliminary Observations of Functional Status in Hospitalized Post-COVID-19 Fibrosis Patients after Pulmonary Rehabilitation: Pilot Study**

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## **ABSTRACT**

**Introduction:** Emerging data suggests a spectrum of pulmonary manifestations, ranging from Dyspnoea (with or without chronic oxygen dependence) to difficult ventilator weaning and fibrotic lung damage among COVID-19 survivors. Prolonged hospitalization is known to significantly affect their activity levels, impair muscle strength and cardio-pulmonary endurance thereby diminishing the chances of early hospital discharge. Timely intervention emphasizing functional outcome can potentially play a major role in improving the health status of these patients.

**Methods:** This single-group interventional study was conducted among hospitalized post COVID-19 fibrosis patients in a tertiary care set-up. Demographic details and clinical records were documented from medical charts. Tailor-made Physiotherapy was delivered in the form of breathing exercises, positioning, strengthening, functional training and ambulation as per their clinical status. Outcome measures assessed at baseline and post intervention were 1 minute Sit to Stand Test (STST), Short Physical Performance Battery Test (SPPB) and Fatigue Assessment Scale (FAS). Statistical analysis was done using SPSS version 23 software.

**Results:** Twenty-five participants (males-19, females-6) with mean age of 54.25(13.36) years were enrolled in the study. Almost 68% of them had a history of ICU stay; oxygen support varied from 44% receiving via non-rebreathing bag whereas 12% receiving via nasal prongs and 20 % breathing in room air. Five patients succumbed to illness during the course of hospitalization and four of them took discharge against medical advice. Data analysed for remaining 16 participants revealed a significant improvement in all functional outcomes i.e., STST (pre: 7.06±4.31, post: 14.19± 2.14, p value= 0.000), SPPB (pre :5±2.76, post: 9.38±1.54, p value =0.001) and FAS (pre:33.25 ± 10.75, post: 25.81 ±4.74, p value=0.007) post rehabilitation.

**Conclusion:** Evaluation of functional status along with goal specific rehabilitation during early hospitalization can help improve functional outcomes thereby alleviating long term complications in post COVID-19 fibrosis patients.

**Keywords:** COVID-19, Pulmonary rehabilitation, Lung fibrosis

