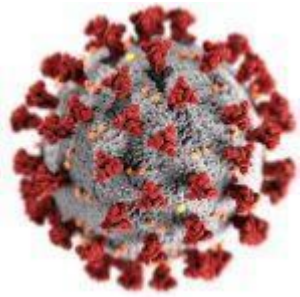
COVID-19 and idiopathic pulmonary fibrosis (IPF)



The global COVID-19 has posed many questions for the medical and scientific world, and remains a major threat to healthcare systems worldwide. The infectious disease primarily affects the lungs and can lead to prolonged respiratory symptoms.

IPF *is a progressive and chronic interstitial lung disease (ILD*). Individuals suffering from IPF have an increased susceptibility to alveolar injury which may lead to progressive scarring of the lungs. Unfortunately, individuals with ILD have an increased likelihood of dying from COVID-19.

In a recent collection of large genome-wide association studies (GWAS) researchers have have identified multiple genetic loci associated with severe COVID-19. From the one study it has been suggested that IPF is a risk factor for causing severe COVID-19. In this study it was reported that *rs35705950*, *the allele associated with increased risk of IPF, was protective against severe COVID-19*.

Within the study analysis, *COVID-19 phenotypes were divided into four categories according to the severity of the disease and the controls used: These included A2, which indicated very severe respiratory confirmed COVID-19 compared to the population, B1, which consisted of hospitalized COVID-19 versus not hospitalized COVID-19 patients, B2, which included hospitalized COVID-19 compared to the population, and fourthly C2, which included COVID-19 compared to the population.*

In conclusion, the study by Allen, et al., reported a positive genetic *correlation between IPF and severe COVID-19 risk*. However, it must be noted that some of the IPF-related pathways may have a contrasting effect on severe COVID-19 risk. Therefore, there are both shared and distinct biological processes driving IPF and severe COVID-19 clinical phenotypes.

There were some limitations to the study, including: all causative variants may not have been measured in this study. The current study employed the use of whole blood and lung tissue gene expression data*; therefore, cell-specific effects cannot be ruled out.* In addition, there needs to be more research conducted on non-European populations in order to help identify other ancestry-specific overlapping variants.

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Journal article: Allen, et al., 2021. Genetic overlap between idiopathic pulmonary fibrosis and COVID-19. *medRxiv*.

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