# Interstitial Lung Diseases and COVID19 Pneumonia

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**Dear Editor,**

In their recent retrospective analysis (n=525), Saho *et al* [1]. have demonstrated that pre-existing interstitial lung disease (ILD), characterized by inflammation and fibrotic scarring of pulmonary interstitial tissue, can elevate the risk of pneumonia after SARS-CoV-2 infection, especially in males, elderly adults, and those undergoing corticosteroid treatment[1]. This study is commendable for its case definition and subgroup stratification within interstitial lung diseases (ILDs), where idiopathic pulmonary fibrosis (IPF), interstitial pneumonia with autoimmune features (IPAF), and connective tissue disease (CTD)-associated ILD cases were prevalent in the pneumonia group. However, I have few points, requiring further discussion on the subject matter.

Frist, it is imperative to highlight, that the association between ILD and SARS-CoV-2 infection led pneumonia is a *vice-versa*phenomenon. A contemporary retrospective analysis (n =391) by Günay*et al*[2] shows that patients with post SARS-CoV-2 pneumonia are at increased risk of persistent clinical symptoms, and development of ILD (pulmonary parenchyma involvement)[2]. This risk is particularly heightened among smokers, males, elderly adults, and those who required high nasal flow cannula[2]. Contrast to SARS-CoV-2 infection, vaccine induced ILD is rare phenomenon[3], can't be attributed to specific vaccine, but rather an individual case specific adverse event. Pre-versus post ILD events have different adversities and should be monitored case by case.

Second, corticosteroid use has contrasting effects[1,2]. In pre-existing ILD with SARS-CoV-2 pneumonia, it poses a risk for pneumonia[1]. However, in patients with SARS-CoV-2-induced pneumonia who later develop ILD, corticosteroids reduce the risk of ILD[2], possibly by reducing inflammation. What is Saho *et al* [1].'s perspective on corticosteroids as a risk factor for COVID-19 pneumonia?

Third, in this retrospective analysis, ˜50% of ILD patients (275 of 525) never received any approved COVID19 vaccine. This decision was often due to safety concerns expressed by both patients and physicians. However, such risky decision can increase COVID19 adversities among individuals IPAF[4] who are receiving immunosuppressive therapies. IPAF patients are frequent recipients of immunosuppressive medications such as

cyclophosphamide (CTX) and mycophenolate mofetil (MMF) [1]. China has 8 approved COVID-19 vaccines[5], including mRNA vaccines, but their safety durability of immune protection, and dosing strategies are not well defined for ILD patients. In some cases, vaccination can lead to the exacerbations (dyspnoea, cough, and sputum production) of pneumonia[6,7], furthering emphasizing the need for case-by-case vaccination at physicians' discretion.

Forth, ILD is a common clinical manifestation of many autoimmune diseases such as Sjögren's syndrome, systemic sclerosis, systemic lupus erythematosus, rheumatoid arthritis (RA), polymyositis/dermatomyositis, anti-synthetase syndrome, ANCA-associated vasculitides[8], and there are sparse studies evaluating adversity, safety and immunogenicity of different vaccines. It seems imperative to understand whether reported ILD conditions is not arising as a clinical manifestation of autoimmune disease. A recent retrospective analysis in the Lancet eClinicalMedicine, reports the risk of post COVID emergence of various autoimmune disease including suchspondyloarthritis, RA, psoriasis, pemphigoid, Graves' disease, anti-phospholipid antibody immune mediated thrombocytopenia, multiple sclerosis, and vasculitis[9]. There is an intricate relationship between, autoimmunity. It can be understood that avoiding SARS-CoV-2 vaccination, along with administration of immunosuppressants could have adverse effects on ILD. In the worst case scenarios, ILD both before and SARS-CoV-2 infection could pose a double risk[10].

In summary, Saho *et al* [1]. meticulously demonstrated how pre-existing ILD can increase the risk of COVID-19 pneumonia. However, the emergence of ILD as a post-acute COVID-19 sequelae or its onset after COVID-19 vaccination poses a severe risk to patients with comorbid conditions such as elderly age, male sex, immunosuppression, or systemic conditions with pulmonary manifestations, requiring further clarification. I applaud Saho *et al* [1] for their excellent work and looking forward for their repones.

## AUTHOR CONTRIBUTIONS

Conceptualization and writing the manuscript: Ranjeet Singh Mahla

## CONFLICT OF INTEREST STATEMENT

Ranjeet Singh Mahla is an industrial postdoc fellow and receives money from BMS as career development fellowship from a BMS funded project.

## DATA AVAILABILITY STATEMENT

No new data generated or analysed.

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