

# **The effectiveness and strategy of SARS-CoV-2 vaccine choice in patients with autoimmune diseases**

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The COVID-19 pandemic continues to endanger the health of people all over the world. Patients with autoimmune diseases, in particular those treated with corticosteroids, conventional synthetic disease-modifying anti-rheumatic drugs (csDMARDs), biological or target synthetic DMARDs (b/tsDMARDs), and immunosuppressive agents, are thought to be at a greater risk of severe COVID-19. Therefore, patients with autoimmune diseases should be prioritized for COVID-19 vaccination to decrease the risk of COVID-19 infection or the risk of worse outcome if getting COVID-19 infection. However, the potential adverse events related to the COVID-19 vaccines have made patients with autoimmune diseases more reluctant to receive COVID-19 vaccinations. Also, to date, few data regarding the immunogenicity as well as safety of anti-SARS-CoV2 vaccines in IMID patients are available. However, based on current data, patients with autoimmune diseases seemed to have less risk of adverse events related to anti-SARS-CoV-2 vaccine, but have higher risk of having negative neutralizing antibodies to SARS-CoV-2.

Regarding the choices of SARS-CoV2 vaccines, although some rheumatologists may choose to recommend an mRNA vaccine to certain patients with autoimmune diseases, no clear differences in efficacy among SARS-CoV-2 vaccines with various modes of action. Also, to date, no data from direct head-to-head comparisons can draw a conclusion to recommend one vaccine (or vaccine platform) over another. Of note, prioritization may itself have important unintended effects.

This lecture will provide a rheumatologist's point of view on the issues of immunogenicity and safety of SARS-CoV-2 vaccines of various platforms in patients with autoimmune diseases based on data from Taichung Veterans General Hospital and literature reviews.