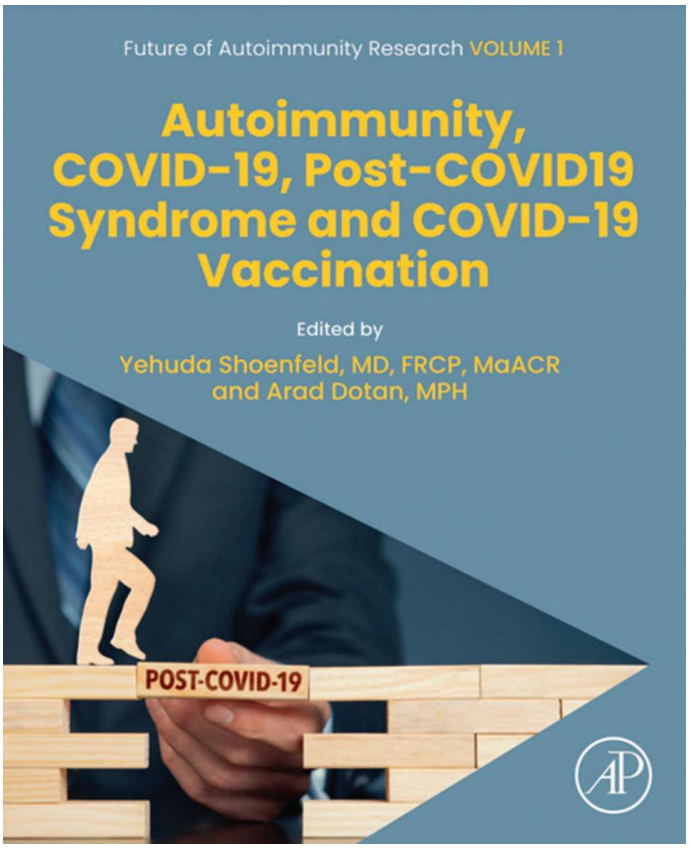
Autoimmunity, COVID-19, Post-COVID19 Syndrome and COVID-19 Vaccination

Editors: Yehuda Shoenfeld and Arad Dotan
Academic Press, Elsevier, Inc. London 2023 (ISBN 978-0-443-18566-3)

IMAJ 2023; 25: 161–162

The coronavirus disease 2019 (COVID-19) pandemic, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), impacted global health, human behavior, economics, and even politics. Two years after the start of the pandemic, the scientific community was still learning about COVID-19 infections. One of the major lessons was the association between SARS-CoV-2 and diverse autoimmune manifestations, including multiple autoantibodies and various autoimmune diseases that developed in COVID-19 patients.

The recently published book *Autoimmunity, COVID-19, Post-COVID19 Syndrome and COVID-19 Vaccination* (Elsevier 2023) presents comprehensive and up-to-date data on the broad aspects of COVID-19 and autoimmunity. In 41 chapters (806 pages), the book describes the effects of COVID-19 on the immune system to help physicians and other health workers properly handle the short- and long-term impact of COVID-19 on autoimmunity. Each chapter was written by experts in the field.



The first two chapters set the context for autoantibodies, autoimmunity, and autoimmune diseases associated with SARS-CoV-2 and discuss the virus within the frame of environmental factors included in the mosaic of autoimmunity and autoinflammation. The next introductory chapters elucidate in detail the innate and T-cell immune response to the virus, its molecular mimicry, the cytokine storm associated with the infection, the genetic disposition to COVID-19 including HLA genotypes, and the four criteria for defining SARS-CoV-2 as an autoimmune virus.

Clinical syndromes and diseases related to SARS-CoV-2-induced autoimmunity are described comprehensively. These topics include peripheral nervous system manifestations (including Guillain-Barre syndrome, myasthenia gravis, myopathy, and myositis), central nervous system impairments (including encephalitis, anosmia, and neuropsychiatric syndromes), rheumatic manifestations, myocarditis, hematologic disorders (including thrombosis, Evan's syndrome, and immune thrombocytopenia), endocrine disorders (including diabetes mellitus and thyroid disturbances), gastrointestinal manifestations (including celiac disease and inflammatory bowel disease), autoimmune hepatitis, male and female infertility, and multisystem inflammatory syndrome in children. The specific impacts of SARS-CoV-2 infection on patients with pre-existing autoimmune diseases are of special importance. Therapeutic options, including intravenous immunoglobulins, monoclonal antibodies, and convalescent plasma are discussed. The benefits

as well as side effects (especially myocarditis) of the COVID-19 vaccines are described.

Post-Covid-19 syndrome and long COVID-19 syndrome are discussed in the final five chapters. Considerable time has passed since the beginning of the pandemic, and yet many recovered patients still present with diverse symptoms connected to the SARS-CoV-2 infection, included pulmonary, cardiovascular, hematologic, neuropsychiatric, renal, dermatologic, and endocrine manifestations. The epidemiology, clinical manifestations, disease course, and potential role of long-term autoantibodies in these syndromes are discussed followed by possible preventive and treatment measures.

CONCLUSIONS

It is important to recognize the autoimmune manifestations of COVID-19 and post-COVID-19 syndrome to properly cope with their outcomes during the ongoing pandemic and for the long-term post-pandemic period. *Autoimmunity, COVID-19, Post-COVID19 Syndrome and COVID-19 Vaccination* is a vital source for up-to-date information on a variety of medical specialties that are involved in the management of patients with COVID-19. It is also a gold mine of information for medical professionals involved in research on the causative SARS-CoV-2 virus.

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The shepherd always tries to persuade the sheep that their interests and his own are the same.

Stendhal (Marie-Henri Beyle) (1783–1842), 19th century French writer

Capsule

Germinal centers need some TSLP

Thymic stromal lymphopoietin (TSLP) promotes allergic responses within barrier tissues and is a target for therapeutic inhibition in severe asthma. The contributions of signaling through the TSLP receptor on B and T cells to germinal center (GC) antibody responses are poorly understood. **Domeier** and colleagues used mouse models lacking TSLP or its receptor to investigate how loss of TSLP signaling impairs antibody formation in GCs. Conditional deletion of the TSLP receptor in T cells impaired differentiation of T follicular helper cells that support GC B cells. However, conditional deletion of the TSLP receptor in B cells augmented antigen-specific GCs and memory B cells. TSLP is thus a key cytokine used by both B and T cells to achieve optimal GC function.

Sci Immunol 2023: 8: eadd9413
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Capsule

The safety of inpatient health

Bates et al. conducted a retrospective cohort study to assess the frequency, preventability, and severity of patient harm in a random sample of admissions from 11 Massachusetts, USA, hospitals during the 2018 calendar year. In a random sample of 2809 admissions, the authors identified at least one adverse event in 23.6%. Among 978 adverse events, 222 (22.7%) were judged to be preventable and 316 (32.3%) had a severity level of serious (i.e., caused harm that resulted in substantial intervention or prolonged recovery) or higher. A preventable adverse event occurred in 191 (6.8%) of all admissions, and a preventable adverse event with a severity level of serious or higher occurred in 29 (1.0%). There were seven deaths, one of which was deemed to be preventable. Adverse drug events were the most common adverse events (accounting for 39.0% of all events), followed by surgical or other procedural events (30.4%), patient-care events (which were defined as events associated with nursing care, including falls and pressure ulcers) (15.0%), and health-care-associated infections (11.9%).

N Engl J Med 2023; 388: 142
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