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Vaccination in Adult Patients with Rheumatic Diseases: A Practical Guide for Canadian Rheumatology Practice

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Introduction

Vaccination remains one of the most effective interventions to reduce morbidity and mortality in patients with rheumatic and musculoskeletal diseases. Individuals with autoimmune inflammatory rheumatic diseases face an increased risk of infection due to both immune dysregulation and immunosuppressive therapy.[1]

This article summarizes current recommendations on the vaccination of patients with rheumatic diseases put forth by the National Advisory Committee on Immunization (NACI).[2] NACI is a national advisory committee that develops recommendations for the use of vaccines in Canada. These recommendations are reviewed and implemented by provincial and territorial public health authorities; thus, publicly funded schedules may differ between jurisdictions. It is recommended that all practitioners review their local guidelines prior to administration of vaccines.

In addition, this article incorporates recommendations from the Canadian Rheumatology Association[1] and American College of Rheumatology[3] where they align with NACI guidance.

General Principles

Non-live vaccines are recommended for most immunocompromised patients; however, the efficacy of these vaccines may be decreased as a result of immunosuppression.

- Live-attenuated vaccines should generally be deferred in patients receiving significant immunosuppression given the risks for infectious complications (see **Table 1**).[3]
- Methotrexate may be held for 2 weeks after influenza vaccination if disease activity permits; methotrexate has been found to significantly blunt immunogenicity of the influenza vaccine.[3]
- Most other immunosuppressive medications can be continued around the time of non-live vaccination.[3]
- Patients taking B-cell depleting therapies (most commonly rituximab, but also ocrelizumab, ofatumumab, and obinituzumab) should ideally time vaccination for when the next rituximab dose is due, and then hold rituximab for at least 2 weeks after vaccination.
- Individualized decision-making is essential to balance disease control and vaccine response.

Live Attenuated Vaccines Available in Canada
MMR(V): measles, mumps, rubella, (varicella)
Varicella (chickenpox)*
Influenza (nasal spray only)
Rotavirus
Yellow fever
Typhoid (oral only)
Tuberculosis: BCG (Bacillus Calmette-Guérin)

Table 1. Canadian Rheumatology Association: Live Attenuated Vaccines Available in Canada.[1]

Influenza

Annual influenza vaccination is recommended for all individuals aged 6 months and older. Influenza immunization is particularly important for individuals who are immunocompromised or who have chronic health conditions that are associated with increased risk of influenza-related complications.[4]

COVID-19

Moderately to severely immunocompromised individuals should receive two COVID-19 vaccine doses per year. mRNA vaccines are preferred in immunosuppressed patients.

Vaccine response may be reduced in patients receiving anti-CD20 therapy, mycophenolate, glucocorticoids, abatacept, Janus kinase inhibitors, and antimetabolites. Supplemental doses improve immunogenicity in many patients.

Vaccination should proceed regardless of prior infection.[4]

Herpes Zoster (Shingrix®)

Recombinant zoster vaccine (RZV) is strongly recommended for immunocompromised individuals aged 18 years and older, and is administered 2–6 months apart.

Ideally, the series should be completed at least 14 days before initiating immunosuppressive therapy. If needed, the second dose can be administered at a minimum of 4 weeks after the first dose.[4]

RZV should be offered to individuals who have been exposed to varicella-zoster virus through either previous varicella infection or vaccination. For individuals known to be susceptible to varicella infection, providers should refer to current varicella vaccine recommendations in the Canadian Immunization Guide[4] for further guidance. Live vaccines including varicella vaccine are contraindicated for many immunocompromizing conditions.[5]

Pneumococcal Vaccination

A single dose of pneumococcal conjugate vaccine (Pneu-C)-20 or Pneu-C-21 is recommended for adults 65 years and older and for adults under 65 with certain current or previous immunocompromizing conditions. One dose of either Pneu-C-20 or Pneu-C-21 should be administered regardless of pneumococcal vaccination history with Pneu-C-13, Pneu-C-15, or Pneu-P-23.[4]

Human Papillomavirus (HPV)

HPV vaccination is recommended for all individuals 9 to 26 years of age and is recommended for individuals 27 years of age and older who are at ongoing risk of exposure to HPV. Immunocompromised individuals require a 3-dose schedule.[4]

Respiratory Syncytial Virus (RSV)

A single RSV vaccine dose is recommended for adults 75 years and older and may be considered on an individual basis for those aged 50–74 years after discussion between the patient and their health care provider.[4]

Measles (MMR – Live Vaccine)

Live-attenuated vaccines should generally be deferred in patients on immunosuppressive therapy.

During outbreaks, vaccination recommendations may expand. If immunization status is unknown, vaccination is preferred over serologic testing.[4]

Tetanus / Td / Tdap

Adults should complete a primary tetanus series and receive Td booster doses every 10 years. One single does of Tdap is recommended in adulthood if not previously administered.[4]

Conclusion

Vaccination is a core component of preventive care in rheumatology. When appropriately timed, most recommended vaccines are safe for use in immunocompromised patients. Depending on the nature of the rheumatologic condition or immunosuppressive therapy, additional doses of vaccination may be required to achieve sufficient immunogenicity.

Proactive vaccine review, medication coordination, and patient education significantly reduce preventable infectious morbidity in patients with rheumatic diseases.

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Financial Disclosures

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