crohn's colitis

Name of Clinical Care Pathway

Vaccination Guide for Patients with Inflammatory Bowel Disease

Objective

Reduce risk of developing vaccine-preventable illnesses

Patient Population

Adult patients (>18 years) with a known diagnosis of IBD

Dr. Jennifer deBruyn MD, MSc, FRCPC (University of Calgary)
Dr. Karen Kroeker MD, MSc, FRCPC (University of Alberta)

PACE Inflammatory Bowel Disease Clinical Care Pathways

crohn's colitis

Highlight Box

Inactivated vaccines can be given to patients with IBD, but those on immunosuppressive therapy may have a reduced immune response to the vaccine.

Live vaccines should NOT be given to patients on immunosuppressive therapy.

Note: Coverage for vaccines varies by region

These clinical decision support tools were developed by Canadian experts in IBD, based on their interpretation of current evidence and considerations specific to Canadian healthcare. International guidelines from Europe and the United States are available. However, these may reflect regional factors not directly applicable in Canada.

Introduction

The use of long-term immunosuppressive therapies in patients with inflammatory bowel disease increases susceptibility to infections, some of which can be preventable with vaccinations. Patients can request vaccination records from local public health authorities, pharmacists, private travel clinics, doctor's office, or family members. Access to records may vary based on province. For patients who do not have records, in some cases, serum titers can be used to determine immunity.

Individuals are considered immunosuppressed if treated with the following immunosuppressive therapies:

- Corticosteroids: prednisone, budesonide (if treatment for >/= 14 days with prednisone equivalent of >/= 2 mg/kg/d)
- Biologics (infliximab, adalimumab, golimumab, vedolizumab, ustekinumab, risankizumab, mirikizumab)
- Oral small molecules (tofacitinib, upadacitinib, ozanimod)
- Immunomodulators (azathioprine, methotrexate)

IBD provider/nurse

- Ensure <u>all</u> IBD patients undergo annual vaccination against influenza.
- It is important to review patient's vaccination and travel history at <u>every appointment</u> and especially when a patient is planning to start or already on immunosuppressive therapy.

Live vaccines

- Live vaccines (Table 1) are contraindicated in patients on immunosuppressive therapies) or significant protein-calorie malnutrition because of the risk of disease caused by the vaccine.
- Suggested time intervals to allow for optimal immune system function and reduce risk of disease caused by the vaccine strain:
    - Live vaccines should be given at least 4 weeks before starting immunosuppressive therapy.
    - Live vaccines should be given at least 3 months after stopping immunosuppressive therapy (this interval varies with the medication and its half-life (Table 2), underlying disease, or urgency of immunization if vaccines are needed for post-exposure or outbreak management. E.g., This can be as short as 1 month after stopping high-dose corticosteroids).
- Patients who may require live vaccines due to work or travel (Table 3a and 3b) should be made aware of need to review and update their vaccinations prior to starting immunosuppressive therapy.
- Blood products of human origin can interfere with the immune response to live vaccines

Inactivated vaccines

- Inactivated vaccines (Table 4) are safe in patients on immunosuppressive therapy, however, response to vaccination may be suboptimal.
- Suggested time intervals to allow for optimal response to vaccine:
    - Inactivated vaccine should be given at least 2 weeks, preferably 3-4 weeks, before initiation of immunosuppressive therapy.
    - Inactivated vaccine should be given at least 3 months after discontinuing immunosuppressive therapy (this interval varies with the medication and its half-life, underlying disease, or urgency of immunization if vaccines are needed for post-exposure or outbreak management).
- If immunosuppressive therapy cannot be stopped, inactivated vaccines may be administered during immunosuppression. Attempt to immunize at 2 weeks following dose of immunosuppressive therapy (to represent the least immunosuppressed time period).

Table 1. Live vaccines

Live vaccines	Who is considered immune?	When can the vaccine be given before start of Immunosuppressive therapy?	Can the vaccine be given if already on immunosuppressive therapy?
Measles, mumps, rubella (MMR)	Considered immune if 2 documented doses of vaccine or positive serology	At least 4 weeks before the start of immunosuppressive therapy. Contraindicated if plan to start therapy in < 4 weeks. Contraindicated in pregnancy.	Contraindicated
Varicella	Considered immune if self-reported history or health care provider diagnosis of natural infection, or 2 doses of vaccine, or 50 years of age and older. Check serology prior to vaccination if >25 years of age, or only one dose of vaccine, or a child with history of chickenpox in the immediate family but not individual.	At least 4 weeks before the start of immunosuppressive therapy. Contraindicated if plan to start therapy in < 4 weeks. Contraindicated in pregnancy.	Contraindicated
Live attenuated influenza (FluMist® intranasal form)	Not applicable	Contraindicated if plan to start therapy in < 4 weeks. Use inactivated vaccine.	Contraindicated use inactivated vaccine
Rotavirus	Not applicable	Contraindicated if plan to start therapy in < 4 weeks.	Contraindicated

Version: December 18, 2024

Table 2: Half-lives of advanced therapies in inflammatory bowel disease

Medication	Median / mean half-life (d)
Infliximab	8-10
Adalimumab	14
Golimumab	12
Vedolizumab	25
Ustekinumab	19
Risankizumab	21
Mirikizumab	9

Table 3a. Inactivated travel vaccines

Vaccine	Use
Typhoid (injectable)	Considered safe for patients on immunosuppressive therapies. Indicated for persons >/=2 years travelling to high risk areas.
Japanese Encephalitis	Considered safe for patients on immunosuppressive therapies. May be considered for persons >/= 2 months travelling to high-risk areas in Asia.
Rabies	Considered safe for patients on immunosuppressive therapies. Pre-exposure prophylaxis can be considered if travelling to high risk area or if at high risk of close contact with rabid animals or the rabies virus. Given the possible suboptimal response to the vaccine if immunosuppressed, post-exposure prophylaxis with both vaccine and immunoglobulin should be considered in the event of exposure.
Hepatitis A and B	Considered safe for patients on immunosuppressive therapies. Indicated for travel to high-risk areas.
Meningococcal vaccine	Considered safe for patients on immunosuppressive therapies. Indicated for travel to high-risk areas.

Version: December 18, 2024

Cholera and travellers' diarrhea vaccine (inactivated, oral)	Of limited benefit and not routinely recommended for most travellers. However, short-term travellers (>/= 2 years of age) at high risk for health complications or serious inconvenience from travellers' diarrhea may find that the potential benefits of the vaccine based on their personal values and preferences, coupled with a low likelihood of adverse events may outweigh the burden of their risk. Antibody response may be suboptimal in patient on immunosuppressive therapies.

Table 3b. Live travel vaccines

Vaccine	Use
Yellow Fever	Contraindicated if immunosuppressed. If travelling to a high-risk area, consult an infectious disease specialist.
Typhoid (oral)	Contraindicated if immunosuppressed. Consider injectable inactivated form if indicated.
Bacillus Calmette-Guerin (BCG)	Contraindicated if immunosuppressed.

Table 4. Inactivated vaccines

Vaccine	Check titer before vaccination?	Recommendations
Tetanus diphtheria (Td) Tetanus diphtheria acellular pertussis (Tdap) Tetanus diphtheria acellular pertussis and inactivated polio (DTap/DTaP-IPV-Hib)	No	Give according to routine schedule. Td booster every 10 years; with Tdap used at 14-16 years of age. All pregnant women should be offered Tdap vaccine (to be given at 27-32 weeks gestation) during every pregnancy, irrespective of previous immunization history.
Hemophilus influenza type B (Hib)	No	Give according to routine schedule.

Human papillomavirus (HPV)	No	Give according to routine schedule for school-age children. Recommended for males and females, ages 9-26 years old. Individuals >/= 27 years of age may receive vaccine with shared decision making and discussion with healthcare provider. Generally, two doses (0 and 6 months) or 3 doses (0, 2 and 6 months) (consider if immunosuppressed). Highly recommended for men who have sex with men.
Influenza (inactivated/injectable form)	No	Annual vaccine Timing of administration should balance nadir of immunosuppression for those on biologics and the need to deliver vaccine prior to the onset of influenza season (starts over the fall and peaks in the winter).
COVID19 (inactivated)	No	Give according to recommended local public health authorities.
Pneumococcal (conjugate) [Pneu-C-15, Pneu-C-20]	No	Give according to recommended public health authority schedule. Timing depends on prior vaccination. Regardless of Pneu-C-13 or Pneu-P-23 vaccination status, one dose of Pneu-C-20 is recommended for all adults 65 years of age and older, and adults 18 to 64 years of age at risk of invasive pneumococcal disease. In previously immunized adults, Pneu-C-20 should be provided at least 1 year from either the last Pneu-C-13 dose or the last Pneu-P-23 dose. For vaccine-naïve adults in whom Pneu-C-20 is recommended, Pneu-C-15 followed by Pneu-P-23 may be offered as an alternative. For adults 65 years of age and older who have received Pneu-P-23 alone, there may be a

		benefit to offering Pneu-C-15 if Pneu-C-20 is not available. While the recommended interval between Pneu-C-15 and Pneu-P-23 is 1 year, when a rapid completion of a vaccine series in vulnerable population is required, the recommended interval is 8 weeks. The minimum interval between Pneu-C-20 and Pneu-C-13 is 8 weeks.
Meningococcal (conjugate) (Strain C) [Men-C-C]	No	Give according to routine schedule.
Meningococcal (conjugate) [Men-C-ACYW]	No	Give according to routine schedule (12 to 24 years of age). Vaccinate adults with increased risk of invasive meningococcal disease if none previously.
Serogroup B meningococcal vaccines	No	May be considered on an individual basis, depending on the individual preferences, regional serogroup B epidemiology and strain susceptibility Offer to individuals with increased risk of invasive meningococcal disease.
Hepatitis A Virus (HAV)	Yes	Two doses required: Give at 0, 6-36 months (depending on the product). If immunosuppressed, consider HAV immunoglobulin in addition to HAV vaccine for post-exposure management. Recommended for at-risk groups (e.g. chronic liver disease, such as primary sclerosing cholangitis, men who have sex with men)
Hepatitis B Virus (HBV)	Yes	Give according to routine schedule. Dose and schedule depend on particular product, age of individual, and associated medical conditions. Check post-vaccine anti-HBs titer at 1 month after last dose. Refer to the Canadian Immunization Guide for dose / schedule and management of non-responders.

Twinrix (Combination Hepatitis A/B)	Yes	May be given instead of HAV and HBV individually. Give according to recommended schedule.
Shingrix (Recombinant zoster vaccine, inactivated)	No, but wait 1 year after an episode of shingles or immunization with live zoster vaccine	Recommended for adults >/= 50 years of age. Recommended prior to JAKi therapy at any age. Two doses, given 2-6 months apart. Recommendations may change as further information becomes available.

Other Resources

CANIBD Vaccination guide: https://canibdvaccination.ca/

RED BOOK: 2024-2027 Report of the Committee on Infectious Diseases (33rd Edition) https://publications.aap.org/redbook/book/755/Red-Book-2024-2027-Report-of-the-Committee-on

Canadian immunization schedule https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian- immunization-guide-part-1-key-immunization-information/page-13-recommended-immunization-schedules.html

Immunization Record for Children https://immunize.ca/immunization-record-children

Immunization Record for Adults https://immunize.ca/immunization-record-adults

Travel vaccinations https://travel.gc.ca/travelling/health-safety/vaccines

References

Mir, F. et al. Health maintenance in inflammatory bowel disease. Curr Gastroenterol Reports 2018; 20(23): 22-28. https://doi.org/10.1007/s11894-018-0621-1

Farraye, F.A. et al. ACG Clinical Guideline: Preventive care in inflammatory bowel disease. Am J of Gastroenterol 2017; 112:241-258. https://doi.org/10.1038/ajg.2016.537

Lopez, A., et al. Vaccination recommendations for the adult immunosuppressed patient: A systematic review and comprehensive field synopsis. J of Autoimmunity 2017; 80:10-27. https://doi.org/10.1016/j.jaut.2017.03.011

Long, M. et al. Immunizations in pediatric and adult patients with inflammatory bowel disease: A practical case-based approach. Inflammatory Bowel Disease 2015; 21:1993-2003. https://doi.org/10.1097/mib.0000000000000395

Canadian Immunization Guide: https://www.canada.ca/en/public-health/services/canadian-immunization-guide.html

Sieiro-Santos C, Herrero JG, Ordas Martínez J, Álvarez Castro C, López Robles A, Colindres R, Martín ER, Sahagun AM, Ruiz de Morales JG. Immunogenicity to Herpes Zoster recombinant subunit vaccine in immune-mediated rheumatic patients under treatment with JAK inhibitors. Rheumatology (Oxford). 2024 Oct 24:keae584. doi: 10.1093/rheumatology/keae584. Epub ahead of print. PMID: 39447032. https://doi.org/10.1093/rheumatology/keae584