Alberta Health Services

IBD CLINIC UNIVERSITY OF ALBERTA

Inflammatory Bowel Disease Group University of Calgary

Title: Vaccination guide for patients with inflammatory bowel disease

Objective: Reduce risk of developing vaccine-preventable illnesses

Patient population: individuals diagnosed with inflammatory bowel disease

The use of long term immunosuppressive therapies in patients with inflammatory bowel disease increase their susceptibility to infections, many of which can be preventable with vaccinations. Patients can request vaccination records from local public health authorities, pharmacists, private travel clinics, doctor's office, urgent care or emergency department where applicable. For patients who do not have records, in some cases, serum titers can be used to determine immunity.

IBD Provider/Nurse:

- Ensure **all** IBD patients undergo annual vaccination against influenza. Patients on immunosuppressive therapies and their household contacts should receive the inactivated influenza vaccine, not the live inhaled vaccine.
- It is important to review patient's vaccination and travel history at **every appointment** and especially when a patient is planning or on immunosuppressive therapy such as: corticosteroids, biologics and thiopurines.
- Family members in close contact with immunosuppressed patients should be vaccinated to help prevent disease transmission.

LIVE VACCINES

- Live vaccines (Table 1) are **contraindicated** in patients who are on immunosuppressants (methotrexate, azathiopurine, steroids, anti-TNFs, ustekinumab, vedolizumab, tofactinib) and significant protein-calorie malnutrition due to concern that vaccination may result in disease.
- Suggested time intervals to allow for immune system recovery are: (i) **4-6 weeks** between last dose and initiation of immune suppression. (ii) **3 months** (1 month for high dose steroids) from discontinuation of biologic or immunosuppressive therapy and vaccination.
- Patients who may require live vaccines due to work or travel (Table 2) should be warned prior to starting anti-TNF therapy to update their vaccinations.
- Live vaccines are safe to give family members, with the possible exception of rotavirus and varicella (chickenpox) vaccines (Table 4)
- Blood products of human origin can interfere with the immune response to live vaccines

INACTIVATED VACCINES

- Inactivated vaccines (Table 3) are safe in immunosuppressed patients, but patients on immunosuppressive therapy may have suboptimal response to vaccination.
- Suggested time intervals to allow for best response to vaccine are: (i) At least 2 weeks, preferably 3-4 weeks between vaccine and initiation of immunosuppressant. (ii) ≥ 3 months between discontinuing immunosuppressant and vaccine (this interval may vary with the type and intensity of treatment, underlying disease, or urgency of vaccination if vaccines are needed for post-exposure or outbreak management).
- If vaccines are administered during immunosuppression, attempt to give them when the next 2 weeks represent the least

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Table 1. Live vaccines and their indications

LIVE VACCINES	WHEN SHOULD TITERS BE CHECKED?	BEFORE INITIATION OF IMMUNOSUPPRESSANTS?	WHAT TO DO IF ALREADY IMMUNOSUPPRESSED?
Measles, mumps, rubella (MMR)	Considered immune if 2 documented doses of vaccine or positive serology	Contraindicated if plan to start therapy in < 4 weeks. Contraindicated in pregnancy.	Contraindicated
Varicella	Considered immune if good history of natural infection, or 2 doses of vaccine, or born before 1970. Check serology prior to vaccination if >25 years of age, or one dose of vaccine or child with history of chickenpox in the immediate family but not individual.	Contraindicated if plan to start therapy in < 4 weeks. Contraindicated in pregnancy.	Contraindicated
Zostavax (Live attenuated zoster vaccine) (for > 50 years old	Individuals who had shingles in the last year are considered immune.	Not recommended. Use inactivated vaccine.	Not recommended. Use inactivated vaccine.
Live Attenuated Influenza (Flu Mist intranasal form)	Not applicable	Contraindicated	Contraindicated
Rotavirus	Not applicable	Contraindicated	Contraindicated

Table 2. Travel vaccines

VACCINE	USE
INACTIVATED VACCINES	
Typhoid (injectable)	Considered safe. Indicated for travel to certain regions.
Japanese Encephalitis	Considered safe. Indicated for travels to certain part of Asia.
Rabies	Considered safe. Pre-exposure prophylaxis can be considered if travelling to high-risk area. Given possible suboptimal response to 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.
Meningcoccal vaccine	Considered safe, Indicated for travel to certain areas.
LIVE VACCINES	
Yellow Fever	Contraindicated if immunosuppressed. If traveling to a yellow fever area consult infections Disease specialist.
Typhoid (oral)	Contraindicated if immunosuppressed. Consider injectable inactivated form if indicated.
Bacillus Calmette-Guerin (BCG)	Contraindicated.

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Table 3. Inactivated vaccines

VACCINE	CHECK TITER BEFORE VACCINATION?	RECOMMENDATIONS
Tetanus diphtheria/ Tetanus diphtheria acellular pertussis/ Tetanus diphtheria acellular pertussis and inactivated polio (Td/Tdap/DTap/DTaP-IPV-Hib)	No	Give according to routine schedule. Td booster every 10 years; with Tdap used at 14-16 years of age. 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	Intended for males and females, ages 9-26 years old 2 doses (0, then 6-12 months after) or 3 doses (0, 2 and 6 months). Highly recommended for men who have sex with men.
Influenza (inactivated/injectable form)	No	Annual vaccine. Timing of administration should balance nadir of immunosuppression and the need to deliver vaccine prior to the onset of influenza season (usually mid-December).
Pneumococcal (conjugate) [Pneu-C-13]	No	Give according to routine schedule. In adults, if no prior pneumococcal vaccine, give 1 dose Prenar 13, wait 8 weeks minimum, then give 1 dose Pneumovax 23.
Pneumococcal (polysaccharide) [Pneu-P-23]	No	As above, with one time booster after 5 years (if first vaccine was given at > 10 years of age) or 3 years (if first vaccine was given at ≤ 10 years) and immunosuppressed. Repeat at age 65 years
Meningococcal (conjugate) [Men-C-ACYW]	No	Give according to routine schedule. Vaccinate all adult at-risk of meningitis, if none previously.
Hepatitis A Vaccination (HAV)	Yes	2 doses required: Give at 0, 6-12 months; or 0, 6-18 months. If vaccinated during an immunosuppressed period and patient is in an at-risk group, consider booster when no longer immunosuppressed. Recommended for at risk groups (e.g liver disease such as primary sclerosing cholangitis, men who have sex with men
Hepatitis B Vaccination (HBV)	Yes	Give according to routine schedule. Dosing schedule depends on particular vaccine,; check post-vaccine titers at 1 month after last dose. Refer to Canadian immunization guide for non-responders.
Twinrix (Combination Hepatitis A/B)	Yes	May be given instead of HAV and HBV individually. Give according to routine schedule.
Shingrix (Recombinant zoster vaccine, inactivated)	No, but wait 1 year after episode of shingles	Two doses, given 2-6 months apart. Recommendations may change as further information becomes available.

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Table 4. Vaccination of family members

VACCINE	SATE TO GIVE FAMILY MEMBERS?	CONSIDERATIONS
MMR	Yes	Safe to give family members.
Varicella	Yes	Approximately 5% of vaccinated patients develop a vesicular rash. Immunosuppressed persons should avoid contact with the individual that has a rash present. Post-exposure prophylaxis is recommended, as it is not possible to differentiate between rash from vaccine and true varicella infection.
Rotavirus	Yes	Need to consider risks and benefits. If vaccine is given to family members, good hand hygiene is required.
Oral Typhoid	Yes	Oral typhoid is not known to result in live vaccine-strain typhoid being shed in the stool of healthy subjects and there are not documented secondary transmission.
Yellow Fever	Yes	Safe to give family members.
Oral Polio	No	Not used in Canada.

- If vaccination with MMR or varicella is indicated and there are no contraindications, the recommended minimal intervals between blood products or immue globulin and vaccination are:

  > Reconstituted RBCs: 3 months

  > Washed RBCs: No delay necessary

  > Intravenous Immune Globulin (400 mg/kg): 8 months

Other Resources:

CANIBD Vaccination guide https://badgut.org/information-centre/a-z-digestive-topics/vaccines-for-ibd/

RED BOOK: 2015 Report of the Committee on Infectious Diseases https://redbook.solutions.aap.org/DocumentLibrary/Red%20Book%202015%201.pdf

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

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