

# ULCERATIVE COLITIS: BIOLOGIC THERAPY

## About this tool:

This tool is designed for IBD nurses and healthcare providers to assist in educating patients when discussing treatment options for Crohn's Disease and Ulcerative Colitis.

## What is a Biologic?

A biologic is a medication that is made from living cells. They have large, complex molecular structures. Biologic medications for IBD target specific activity in the immune system to treat inflammation, which is the body's normal response to things like injury, infection, stress and pain. Sometimes the immune system does not function properly and causes damage to healthy tissue. Biologics block key cells or chemicals involved in triggering inflammation and thereby stop or reduce inflammation, allowing the gut to heal. ([www.crohnsandcolitis.ca](http://www.crohnsandcolitis.ca), 2020).

**Last Updated:** June 3, 2020

NAME OF MEDICATION	Remicade® Infliximab	Inflectra® Infliximab	Renflexis™ Infliximab	Humira® Adalimumab	Simponi® Golimumab	Stelara® Ustekinumab	Entyvio® Vedolizumab	Xeljanz® Tofacitinib
COMPANY	Janssen	Pfizer	Merck	Abbvie	Janssen	Janssen	Takeda	Pfizer
APPROVED BY HEALTH CANADA	2006	2016	2018	2013	2013	2020	2015	2018
CLASS	Monoclonal Antibody Tumor Necrosis Factor (TNF) Blocking Agent					Monoclonal Antibody Interleukin Inhibitor	Monoclonal Antibody Integrin Receptor Blocker	JAK Inhibitor
ACTION	IBD causes the immune system to produce an excess amount of TNF $\alpha$ which causes inflammation. Anti-TNF $\alpha$ is a protein which works to bind TNF $\alpha$ and block inflammation					Targets an overactive immune system by blocking receptors of two proteins called <u>IL-12</u> and <u>IL-23</u> . By blocking these receptors, cells are slowed down, which reduces inflammation.	Blocks <u>Integrin <math>\alpha</math>4<math>\beta</math>7</u> (a protein found on the surface of white blood cells), thereby reducing intestinal inflammation. Inflammation elsewhere in the body is unaffected.	Blocks certain enzymes in the body that affect immune system functions
REIMBURSEMENT AND LOGISITCS PROGRAM	BioAdvance	PfizerFlex	Harmony Support	AbbVie Care	BioAdvance	BioAdvance	YourVantage	PfizerFlex



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<b>PRE-TESTING AND VACCINATION</b>	Chest X-ray; TB skin test; Blood work (baseline CBC, renal and liver function, Hepatitis B virus screen panel); Ensure all immunizations are up to date. Refer to CANIBD Vaccination Guideline for further information; Recommend receiving live vaccines e.g. Zoster, MMR prior to starting therapy. Refer to CANIBD Vaccination Guideline for further information; Pneumococcal vaccination recommended for adult patients; Recommend vaccinations HAV, HBV, HPV and Tdap.						TB screening should be considered.	Chest X-ray; TB skin test, bloodwork (baseline CBC w/differential, renal and hepatic function, lipids); Shingrix zoster.
<b>METHOD OF ADMINISTRATION</b>	IV infusion		SC injection	SC injection	SC injection	IV infusion x 1 then SC injection	IV infusion	Oral
<b>LOCATION</b>	Infusion Centre		Home	Home	Home	Infusion Centre Home	Infusion Centre	Home
<b>DOSING</b>	Induction/loading wk 0, wk 2, wk 6; then maintenance every 8 wks		Induction/loading wk 0, wk 2; then maintenance every 2 wks	Induction/loading wk 0, wk 2; then maintenance every 4 wks	Induction/loading wk 0, wk 2; then maintenance every 4 wks	Induction/loading IV x 1 infusion; then maintenance SC every 8 wks	Induction/loading wk 0, wk 2, wk 6; then maintenance every 8 wks	Induction/loading 10 mg twice / day for 8 weeks; then maintenance 5 mg twice daily
<b>TIME REQUIRED</b>	3-4 hours		< 15 min	< 15 min	< 15 min	1-2 hours	1-2 hours	5 mins
<b>ROUTINE MONITORING</b>	Annual cervical cancer screening – pap test; Annual skin exam – skin malignancies; Influenza vaccine recommended; May consider therapeutic drug monitoring (TDM) if available; Screening for osteoporosis with bone mineral density testing periodically after diagnosis.						Patients should be monitored for any new onset or worsening of neurological signs and symptoms;  Liver enzymes – transaminases and bilirubin.	Lipids at baseline, 4-8 wks. after initiation & every 6 mos. thereafter;  Liver enzymes and renal function prior to initiation;  CBC w/differential at baseline, approx. 4-8 wks after initiation, every 3 mos. thereafter.



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<b>SIDE EFFECTS</b>  For more detailed information regarding Side Effects, please refer to the appropriate Product Monograph.	Infusion related reactions;  Increased risk of serious infection (sepsis and pneumonia), invasive fungal infections and viral infections; Approximately 10% increased risk at wk 54. Reactivation of latent TB;  Can worsen pre-existing CHF;  Lupus like reaction (rare);  Hepatocellular damage, hepatitis, jaundice, autoimmune hepatitis; Reactivation of Hep B virus;  Potential increased risk of malignancy (lymphoma, hepatosplenic T cell lymphoma, melanoma and NMSC); Increased frequency when used in combo with a Thiopurine;  Numbness and tingling in legs, arms, etc.; Change in vision, weakness in leg, dizziness.					Injection site reactions; Headaches; Diarrhea; Skin rash or itching; Possible infusion reaction.	Nasopharyngitis; Arthralgia; Headache; Nausea; Pyrexia; Upper Respiratory Tract; Infection; Fatigue;  Malignancy: 0.4%. Included: 1 case of breast, colon, transitional cell carcinoma, squamous cell carcinoma, each, reported out of 1430 patients;  Elevated transaminase has been reported;  Serious Infections: No increase in serious infections.	Potential viral Infections ie. Shingles;  Potential increase risk of thrombosis; ↑LFT's, GI upset; ↑Lipid parameters;  Malignancies: Non-melanoma skin cancer;  (Potential for increased clots although was only thus far noted in rheumatoid patients over 50 with cardiac risk factors).
<b>SPECIAL POPULATIONS</b>								
<b>PAEDIATRICS</b>	Approved for use in Paediatric patients			Not currently approved for Paediatric use				
<b>ELDERLY</b>	Data supporting the efficacy of anti-TNF therapy in the elderly is limited with some studies showing similar results in elderly and younger onset IBD and others suggesting lower efficacy;  Caution should be used when treating the elderly;  Data on safety of anti-TNF therapy reports increased rates of adverse events in elderly patients;  Anti-TNF therapy is not suitable for patients with history of congestive heart failure and recent malignancy (< 2 years).					At present, there is not enough data to determine the safety in the elderly.	Clinical trials of Vedolizumab did not include sufficient numbers of subjects aged 65 + and over to determine whether they respond differently from younger subjects.	The frequency of serious infection among XELJANZ treated subjects 65 years of age and older was higher than among those under the age of 65;  Safety has not been determined; Use with caution in the Elderly.



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<b>SPECIAL POPULATIONS</b>									
<b>PREGNANCY</b>	<p>The authors of the 2016 Toronto Consensus Statements for the Management of IBD in Pregnancy recommend the following for pregnant women with IBD:</p> <p>Those who have a disease flare on optimal 5ASA or Thiopurine maintenance therapy, treatment with systemic corticosteroids and anti-TNF therapy to induce symptomatic remission is recommended;</p> <p>Those on anti TNF maintenance therapy, continuation of therapy is recommended;</p> <p>Those with a steroid resistant flare, starting anti-TNF mono therapy to induce symptomatic remission is recommended;</p> <p>AGA IBD in Pregnancy Clinical Care Pathway, 2019 recommends maintaining pre-pregnancy dosing and continue dosing throughout all three trimesters.</p> <p>If symptoms are stable,  <b>Infliximab &amp; Vedolizumab</b> – Plan final pregnancy infusion 6-10 week before estimated date of delivery and resume postpartum (if q 4wk dosing, then 4-5 weeks before delivery);  <b>Adalimumab</b> – Plan final pregnancy dose 2-3 week before estimated date of delivery and resume post-partum;  <b>Golimumab</b> – Plan final pregnancy dose 4-6 week before estimated date of delivery and resume post-partum.</p>					The safety in pregnancy has not been determined.		Contraindicated in use with pregnancy.	
<b>BREASTFEEDING</b>	<p>The authors of the 2016 Toronto Consensus Statements for the Management of IBD in Pregnancy recommend the following:</p> <p>Anti TNF therapy should not influence the decision to breast-feed, and breast-feeding should not influence the decision to use these medications;</p> <p>Evidence suggests that the majority of medications are not substantially transferred into breast milk, thus there are no compelling reasons to discontinue these medications during breastfeeding.</p> <p>AGA IBD in Pregnancy Clinical Care Pathway, 2019 – Biologics compatible with breastfeeding.</p>					The safety in breast feeding has not been determined.		Contraindicated in use with breastfeeding.	



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### References

1. ENTYVIO® Product Monograph: January 28, 2019
2. HUMIRA® Product Monograph: June 25, 2019
3. INFLECTRA® Product Monograph: August 28, 2019
4. SIMPONI® Product Monograph: November 6, 2018
5. STELARA® Product Monograph: January 28, 2019
6. REMICADE® Product Monograph: June 6, 2019
7. RENFLEXIS™ Product Monograph: April 5, 2019
8. XELZANZ® Product Monograph: July 2, 2019
9. The Toronto Consensus Statements for the Management of Inflammatory Bowel Disease in Pregnancy:  
[https://www.gastrojournal.org/article/S0016-5085\(15\)01773-4/abstract](https://www.gastrojournal.org/article/S0016-5085(15)01773-4/abstract)
10. ACG Clinical Guideline: Management of Crohn's Disease in Adults. Lichtenstein et al. April 2018, 113 (4).
11. ACG Clinical Guideline: Preventive Care in Inflammatory Bowel Disease. Farraye et al. American Journal of Gastroenterology. Feb 2017, 112(2).
12. Inflammatory Bowel Disease in Pregnancy Clinical Care Pathway: A report From the American Gastroenterological Association IBD Parenthood Project Working Group. Mahadevan et al, Gastroenterology 2019; 156:1508-1524.
13. Health Canada, Drugs & Health Products, Notice Of Compliance Database, <https://health-products.canada.ca/noc-ac/search-recherche.do?lang=en>
14. Vaccination Guide for Immunosuppressed Patients with Inflammatory Bowel Disease,  
[https://www.crohnsandcolitis.ca/Crohns\\_and\\_Colitis/documents/research/CANIBD/Guide-to-Vaccination-CANIBD.pdf](https://www.crohnsandcolitis.ca/Crohns_and_Colitis/documents/research/CANIBD/Guide-to-Vaccination-CANIBD.pdf)

