Infliximab Intravenous for Adults

Who can administer

May be administered by registered competent doctor or nurse/midwife

Important information

- **All new gastro/rheumatology patients will be commenced on Inflectra (biosimilar)**.
- The **brand name** to be used **must be specified** by the prescriber, i.e. Remicade or Inflectra
- Monitoring requirements - see below
- In order to improve the traceability of biological medicinal products, **the name and the batch number of the administered product should be clearly recorded.**
- **Anaphylaxis** can be a concern with this drug - ensure adrenaline, corticosteroids, antihistamine and paracetamol are available during administration
- Before the administration of each dose, the patient should be examined for the presence of infection, and consideration given to delaying treatment should infection be present - see 'Further information' below also.
- Confirm patient does **not have a history of current or recent infection**, or recent exposure to chicken pox or TB
- Infliximab should be used with caution in patients with mild heart failure, and should not be used in patients with moderate to severe **heart failure**

Available preparations

Remicade 100mg vial

Inflectra 100mg vial

Baxter manufactured Inflectra Bags

Reconstitution

Water for Injections

- 10ml per 100mg vial
- Use a syringe with a 21-gauge (0.8mm) or smaller needle
- Direct the stream of Water for Injection to the glass wall of the vial, rather than directly at the powder.
- Gently rotate the vial to dissolve the lyophilised powder
- **Do not shake** - Foaming may occur
- Allow the reconstituted solution to stand for five minutes
- Check that the solution is colourless to light yellow and opalescent

Infusion fluids

Sodium chloride 0.9%

Methods of intravenous administration

Intermittent intravenous infusion (using an electronically controlled infusion device)

- Dilute required dose to 250ml infusion fluid as follows:
- Withdraw a volume of the sodium chloride 0.9% from the infusion bag, equal to the volume of reconstituted Infliximab to be added.
- Example: if a 300mg dose is being used, this is 30ml of the drug solution, so withdraw 30ml of the infusion fluid before the 30ml drug solution is added.
- Slowly add the reconstituted drug to 250ml infusion fluid and **gently mix** (note, maximum concentration of 4mg/1mL cannot be exceeded)
- **Administer required dose over 2 hours**
- In **carefully selected adult patients** who have tolerated **at least three initial 2-hour infusions** of Infliximab (induction phase) and are receiving maintenance therapy, consideration may be given to administering subsequent infusions over **a period of not less than 1 hour**. If an infusion reaction occurs in association with a shortened infusion, a slower infusion rate may be considered for future infusions if treatment is to be continued. **Shortened infusions at doses greater than 6mg/kg have not been studied**
- Use an infusion set with an in-line sterile, non-pyrogenic, low protein-binding filter (pore size 1.2microns or less)(Sterifix reference number 409 9303)
  - MPUH- available from Stores
  - UCH: available from pharmacy

Dose in adults

- Use actual body weight for **obese patients** (ref 1)
- Given the 100mg vial presentation, dosing on a mg/kg basis and the need to promote cost-effective use dose-rounding is permitted by physicians to the tune of 5% (for rheumatology) and 10% (for gastroenterology) (ref 2).
- See Further information section for guidance on administration when interval between doses is greater than 8 weeks

Moderate to severely active Crohn's disease

- **Initial dose 5mg/kg, repeated two weeks later**
- If **no response** after two doses - no additional doses should be given
- In patients who respond, there are two options:
  - a: Repeat 5mg/kg dose six weeks after initial dose, followed by further doses every eight weeks
  - b: Re-administration of 5mg/kg if signs and symptoms of the disease recur
- Higher doses than 5mg/kg- see 'Further information'

Fistulating active Crohn's disease

- **Initial dose** 5mg/kg single dose, repeated at two and six weeks after the first infusion
- If the patient does not respond after these 3 doses, no additional treatment with infliximab should be given
- In patients who respond: two options
  - a: Repeat 5mg/kg dose every eight weeks, or
  - b: Readministration of 5mg/kg if signs and symptoms of the disease recur, followed by infusions of 5mg/kg every eight weeks
- Higher doses than 5mg/kg- see 'Further information'

Ulcerative colitis

- Initial dose 5mg/kg, repeated at two and six weeks after the first dose, then every eight weeks thereafter
- If there is no response after 14 weeks (ie. three doses), continued therapy should be carefully

reconsidered

Higher doses for Gastrointestinal disease (unlicensed)

- Local, specialist recommendation [ref 5]:
  - Dosing may change dependent on trough drug levels and clinical requirements
  - With Consultant authorisation, a 10mg/kg dose may be used for sicker patients, and the interval between doses may be shortened

Ankylosing spondylitis

- **Initial dose**: 5mg/kg single dose, repeated at two and six weeks after the first infusion
- If a patient **does not respond** by six weeks (ie after 2 doses), no additional doses should be given
- If a patient **does respond,** the dose may be administered every six to eight weeks thereafter

Rheumatoid arthritis

- **Unlicensed regimens** in use in Rheumatology Day Ward: 5mg/kg on week 0, then 5mg/kg on week 4, and 3mg/kg every **eight weeks** thereafter (ref 3)
- **Licensed dose: Initial dose** 3mg/kg, repeating at two and six weeks, then every eight weeks thereafter (licensed only in conjunction with methotrexate, check with consultant if patient is not on methotrexate)
- If a patient loses response or has an inadequate response after twelve weeks, the dose may be increased in increments of 1.5mg/kg up to a maximum of 7.5mg/kg every eight weeks. Alternatively, 3mg/kg may be given every four weeks
- Continued therapy should be carefully reconsidered in patients who show no evidence of therapeutic benefit within the first 12 weeks of treatment or after dose adjustment

For other indications (including psoriatic arthritis, psoriasis), please contact pharmacy department.

Renal and/or hepatic impairment

- Infliximab has not been studied in these patient populations. No dose recommendations can be made

Monitoring

- Monitor the patient for infusion-related reactions **every 30 minutes** during the infusion
- The manufacturers advise that patients continue to be monitored for at least one to two hours post infusion for infusion-related reactions
- Local policy (GI indications) suggests that the patient be monitored for 60 minutes post infusion (1st three infusions), and for 30 minutes after the fourth and subsequent infusions [ref 4]
- If adverse reactions occur, slow or stop the infusion. Refer to Medication protocol: Management of Infusion Related Patient Reactions in nurse-led infusion settings at Galway University Hospital QPulse CLN-NM-0118
- Patients may be pre-treated with antihistamines, hydrocortisone, and/or paracetamol to decrease the risk of infusion related reactions
- Trough levels may be measured - see below for letter re TDM in GUH

Further information

Pre-screening (ref 2)

- Chest x ray

- Mantoux test
- Hepatitis screen (HepBcAb, or if prior vaccination to HepB check HepBsAb)
- VZV IgG
- HIV Ab

Infection risk and vaccinations

- Patients must be monitored closely for infections including tuberculosis before, during and for six months after treatment with infliximab
- Further treatment with infliximab should not be given if a patient develops a serious infection or sepsis
- **Vaccine recommendations (ref 2)**
- Seasonal influenza annually
- Pneumococcal (every 3 to 5 years)
- Varicella vaccine (if VZV IgG negative)- this needs to be given **prior** to starting infliximab therapy
- Human Papilloma Virus (HPV) for female patients aged 14 to 26 years. Females over 26 years are encouraged to have annual cervical smear test
- Tetanus booster every 10 years

Readministration after a break in therapy (Crohn's disease and rheumatoid arthritis)

- If signs and symptoms of disease recur, infliximab may be re-administered within 16 weeks of the last infusion. In clinical trials, DELAYED HYPERSENSTIVITY REACTIONS have occurred after **infliximab-free intervals of less than 1 year**

See also **'Policy for the use of Biosimilar Medicines in GUH'** available on Q pulse CLN-PHAR/UCH-091

Storage

- Store between 2 and 8^{0}C
- **For reconstituted vials only:** since no preservative is present, it is recommended that the infusion be used as soon as possible (within 3 hours) of reconstitution and dilution
- **For Baxter manufactured bags -** See bag label for expiry date

References

Inflectra SPC 03/2021

Remicade SPC 16/09/2021

1: Email communication with MSD March 8th, 2016

2. Infliximab prescribing, vial optimisation and administration in Merlin Park Hospital outpatients units. Q-Pulse document CLN-GAST-002

3: Signed prescription sheet from Rheumatology Day Ward MPUH (Dr C.O'Sullivan)

4: Email communication with ANP and Gastroenterologists 01/12/2021

5: Email communication with Prof Eoin Slattery, February 2022

Therapeutic classification

Tumour necrosis factor alpha inhibitor