Rituximab Intravenous in Adults

Who can administer

May be administered by registered competent doctor or nurse/midwife

Important information

- **May use a Closed System Transfer Device (CSTD)- see under Methods of Administration**
- **Must be prescribed using brand name** - see UHG Policy for the Use of Biosimilar Medicines in Galway University Hospitals Q Pulse CLN-PHAR/UCH-091
- **Ruxience** is the preferred preparation in GUH (commercial reasons)
- **Premedication**
  - an anti-pyretic and an antihistamine should always be administered before each infusion of rituximab
  - **Premedication with IV steroid:**
    - Intravenous **methylprednisolone 100mg** (local protocols use 80mg doses [ref 1,2]) should be completed 30 minutes prior to commencing rituximab infusion
    - Intravenous **hydrocortisone for use in Haematology protocols**- see individual guidelines
- **Anaphylaxis** can be a concern with this drug - ensure adrenaline, corticosteroids and antihistamine are available for immediate administration if needed
- Monitoring requirements - see overleaf
- Rituximab should **NOT** be administered to patients with an **active, severe infection** (eg. tuberculosis, sepsis and opportunistic infections) or severely immunocompromised patients.
- **Rare cases of PML have been reported -** monitor closely
- See prescriptions for use in OPD attached
- In order to improve the traceability of biological medicinal products, **the tradename and the batch number of the administered product should be clearly recorded.**

Available preparations

Ruxience 100mg per 10ml vial (preferred product in GUH)

Ruxience 500mg per 50ml vial (preferred product in GUH)

MabThera 100mg per 10ml vial

MabThera 500mg per 50ml vial

Reconstitution

Already in solution

Infusion fluids

Sodium chloride 0.9% or Glucose 5%

Methods of intravenous administration

Intermittent intravenous infusion only (using an electronically controlled infusion device)

Preparation:

- If pharmacy are unable to provide the rituximab solution, the product should be prepared under aseptic conditions at ward level
- **Staff must wear gloves, goggles, mask and gown and may use a Closed System Transfer Device (CSTD)(e.g. Equashield orPhaSeal) to prepare this drug**. This is to prevent exposure of health-care staff to the drug ([ref 3])
- **Equashield instructions** (view these websites on desktop computer)
  - Preparing a vial assembly
  - Reconstituting a powder using a diluent vial
  - Adding to an infusion bag
  - Other instructional videos
    - Equashield components required:
    - a: 2 x 60ml Syringe unit (SU) *(Code: EZ60/2)* - to draw up drug solution
    - b: 2 x 20mm Vial adaptor (red) (*Code: VA 20/2)*
    - c: 1 x Spike adaptor *(Code SA-IT/2)* - to add drug solution into the infusion bag
- Using a normal syringe, withdraw a volume of the sodium chloride 0.9% from the infusion bag, equal to the volume of reconstituted rituximab to be added. The volume of infusion to be used depends on the dose as the final concentration must be 1 to 4mg per ml
- Using the Equashield Syringe unit, draw up the necessary amount of rituximab. Add to the infusion bag via the Spike Adaptor
- To mix the solution, **gently invert** the bag (**to avoid foaming**)

Example:

- **For example,** if a 1000mg dose is required.
- This is contained in 100ml of the drug solution.
- Use an infusion bag of between 250ml and 1000ml (as the final concentration must be 1 to 4mg per ml).
- Withdraw 100ml infusion fluid from infusion bag (as this is the volume of the drug solution to be added), and replace with the 100ml (1000mg) of rituximab

Administration

- **First infusion**: The recommended initial rate for infusion is 50 mg per hour; after the first 30 minutes, it can be increased in 50 mg per hour increments every 30 minutes, to a maximum of 400 mg per hour
- **Subsequent infusions**: Subsequent doses of rituximab can be infused at an initial rate of 100 mg per hour for the first 30 minutes, and increased by 100 mg per hour increments at 30 minutes intervals, to a maximum of 400 mg per hour
- Mild or moderate **infusion-related reactions** usually respond to a reduction in the rate of infusion. In most cases, the infusion can be resumed at a 50% reduction in rate (e.g. from 100 mg/hour to 50 mg/hour) after symptoms have completely resolved. The infusion rate may be increased upon improvement of symptoms
- **Rheumatoid arthritis ONLY:** If patients have tolerated a dose at the standard rate of infusion, a more rapid infusion can be administered for second and subsequent infusions. Initiate at a rate of 250mg per hour for the first 30 minutes, and then 600mg per hour for the next 90 minutes. If the more rapid infusion is tolerated, this infusion schedule can be used when administering subsequent infusions. Patients who have clinically significant **cardiovascular disease, including arrhythmias, or previous serious infusion reactions to any prior biologic therapy should not be administered the more rapid infusion**

Dose in adults

Important

- Consult local specialist protocol for dosing. Listed below are the manufacturer's licensed dosing recommendations.
- Premeds required: see under 'Important information' above

Rheumatoid arthritis

- Used in combination with methotrexate for severe active rheumatoid arthritis in patients who have had an inadequate response or intolerance to other disease-modifying anti-rheumatic drugs (DMARD) including one or more tumour necrosis factor (TNF) inhibitor therapies.
- The recommended dosage of rituximab is 1000 mg by intravenous infusion followed by a second 1000 mg intravenous infusion two weeks later.
- See rheumatology rituximab prescription sheet for further information.
- Ensure **Patient Alert Card** is given to patients

Non-Hodgkin's lymphoma (NHL) and Chronic lymphocytic leukaemia (CLL)

- Refer to Haematology protocols for further information

For other indications not listed, please contact pharmacy department

Monitoring

- Please also consult Medication Protocol: **Management of Infusion Related Patient Reactions in nurse-led infusion settings in GUH**. CLN-NM-0118
- **Infusion related reactions** are more likely to occur with the first infusion, usually within the first 30 to 120 minutes. Incidence of infusion related adverse effects decreases with subsequent infusionsÂ
- Mild or moderate reactions usually respond to a reduction in the rate of infusion. The rate may be increased upon improvement of symptoms
- Closely monitor for **cytokine release syndrome** - patients who develop severe reactions, especially severe dyspnoea, bronchospasm or hypoxia should have the infusion interrupted immediately and should receive aggressive symptomatic treatment. In all patients, the infusion should not be restarted until complete resolution of all symptoms. At this time, the infusion can be initially resumed at not more than half the previous rate of administration
- Monitor for new/worsening **neurological signs** that may be suggestive of PML (progressive multifocal leukoencephalopathy)
- Patients with pre-existing **cardiac conditions** and patients who have experienced prior cardiopulmonary adverse reactions should be closely monitored
- Monitor **FBC**
- For full information on monitoring requirements: see SPC

Further information

- **Hepatitis B virus (HBV) screening** should be performed in all patients before initiation of treatment with rituximab. At minimum this should include HBsAg-status and HBcAb-status
- Rheumatoid arthritis: Contraindicated in **severe heart failure** (NYHA IV) or severe **uncontrolled cardiac disease**.
- In patients with a **known cardiac history**, the risk of cardiovascular complications resulting from infusion reactions should be considered before treatment and patients closely monitored during administration. In addition, since hypotension may occur during rituximab administration,

consideration should be given to **withholding anti-hypertensive medicines 12 hours prior** to the infusion
- **Human anti chimeric antibodies (HACA)** develop in some patients after the first course of rituximab. The presence of HACA may be associated with the worsening of infusion or allergic reactions after the second infusion of subsequent courses.
- Although rituximab is **NOT** myelosuppressive in monotherapy, caution should be exercised when considering treatment of patients with neutrophils < 1.5 x 109/l and/or platelet counts < 75 x 109/l as **clinical experience in this population is limited**

Storage

- Store between 2 and 8^{0}C

References

SPC Ruxience 01/04/2020

1: Rituximab Prescription sheet - Rheumatology day ward 27th Feb 2019

2: Email communication from Prof. John Carey, 20th February 2025

3: Guidance on the safe handling of mAb products 5th Edt Nov 2015

Therapeutic classification

- Monoclonal antibody