Infusion Protocols

Rituximab (Rituxan®) and Biosimilars: Rituximab-pvvr (Ruxience®), Rituximab-abbs (Truxima®), Rituximab-arrx (Riabni®)

Indication:

Rituximab was approved by the United States Food and Drug Administration (FDA) in 1997 for treatment of B cell non-Hodgkin's lymphoma. It has since been approved for rheumatoid arthritis, granulomatosis with polyangiitis and pemphigus vulgaris. The use of rituximab for multiple sclerosis has been studied off-label.

Rituximab-pvvr (Ruxience®) is the VA formulary rituximab product.

Pre-Screen:

Screen all patients for HBV infection by measuring hepatitis B surface antigen (HBsAg) and hepatitis B core antibody (anti-HBc) within 6 months of rituximab initiation.

Assess need for withholding antihypertensive medications on the morning of the infusion (as rituximab infusion may drop the blood pressure, particularly initial infusions. See Management of Infusion Related Complications.).

Baseline labs (CBC, CHEM 7, LFT, QuantiFERON TB, HCV, HBsAG, anti-HBV, HCV, VZV; immunoglobulins-IgA, IgG, IgM)

Prior to infusion check for active infection and check vital signs.

Establish IV access and call pharmacy to reconstitute drug 1000 mg in 500 mL NS.

Once reconstituted, rituximab must be stored at 2°C to 8°C and is stable for 24 hours only.

Dose:

Initial: 1000 mg once every 2 weeks for two doses (given on day 1 and day 15)

Maintenance: 1000 mg once every 6 to 12 months (alternative lower dose of 500 mg every 6 to 12 months can be considered)

Pre-Meds:

30-60 minutes prior to rituximab:

- Acetaminophen 650 mg PO
- Diphenhydramine 50 mg IV push
- Methylprednisolone 125 mg IV piggyback in 100 mL NS or equivalent

As Needed (PRN) Meds:

- Meperidine 25 mg IV x1 dose PRN rigors
- Methylprednisolone 125 mg or equivalent IV PRN mucocutaneous swelling

Infusion Rate:

1st dose of Rituximab starts at 50 ml/hr x 30 minutes and then increases by 50 ml/hr each ½ hour as vital signs allow to max of 400 ml/hr.

Subsequent Rituximab infusions start at 100 ml/hr x 30 minutes and then increases by 100 ml/hr each ½ hour as vital signs allow to max of 400 ml/hr.

Monitor During Treatment:

Blood pressure, oxygen saturation, pulse rate, respiratory rate and temperature every 15 minutes until maximum infusion rate reached then every 30 minutes until 1 hour after completion of infusion.

Management of Infusion Related Complications:

Infusion related reactions include chills, fever, mucosal swelling, breathing difficulty (bronchospasm), skin rash and hypotension (drop in blood pressure by 30 mmHg).

Mild infusion related reaction:

Infusion should be reduced to half the initial infusion rate (i.e., from 100 mg/hr to 50 mg/hr).

Once reaction resolves, keep reduced rate for an additional 30 minutes.

If reduced rate is tolerated, infusion rate may be increased to next closest rate on schedule – leave IV line in situ 1 hour.

Moderate to severe infusion related reaction:

Infusion should be stopped immediately, and appropriate symptomatic treatment administered (e.g., fluids support, antihistamines, acetaminophen, steroids). The neurology team, on call registrar or outreach team should be called. The infusion should not be restarted until all the symptoms have disappeared and then at half the rate. If reduced rate is tolerated for 30 minutes, infusion rate may be increased to next highest rate on infusion table. Leave IV line in situ for 1 hour.

References:

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- de Flon P, et al. Reduced inflammation in relapsing-remitting multiple sclerosis after therapy switch to rituximab. Neurology. 2016 Jul 12;87(2):141-7.
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- Greenfield A, Hauser S. B-cell Therapy for Multiple Sclerosis: Entering an era. Ann Neurol. 2018 Jan;83(1):13-26.
- Hauser S, et al. B-cell depletion with rituximab in relapsing-remitting multiple sclerosis. N Engl J Med. 2008 Feb 14;358(7):676-88.
- He D, et al. Rituximab for relapsing-remitting multiple sclerosis. Cochrane Database Syst Rev. 2013 Dec 6;(12):CD009130.
- Rituxan webpage for Health Care Professionals, [www.rituxan.com]