Oncology Pharmacy Newsletter

Volume 1, Issue 3, May 29, 2015

The Oncology Pharmacy Newsletter is a bi-weekly publication dedicated to providing useful information for the staff treating patients who come to the Oncology Outpatient Pavilion.

We welcome questions and requests for topics.

References available upon request.

Susan, Chris, Lisa & Maria

Since you asked....

Can IVIG be run in the same line with other things?

In general, no. Other medications should not be administered through the same line as IVIG products.

Privigen, our usual IVIG product, and Gammagard Liquid, can be infused in the same line as D5W. Gammagard S/D should NOT run with anything else.

These products may be flushed with NS upon completion, but NS should not run concurrently.

It's a "Mab, Mab" World! Infliximab (Remicade®)

Brought to you by AACU

The comingling of AACU and NCCC patients in the New Outpatient Pavilion Infusion Center means there will be longstanding UConn Health Patients that are receiving infusions that may be unfamiliar. Many of these are monoclonal antibodies, and the most frequent of them is Infliximab (Remicade®).

Infliximab is used for a variety of autoimmune diseases, including Crohn's, rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis and plaque psoriasis. There are several off label uses as well, including Behçet syndrome uveitis. It binds to tumor necrosis factor α, preventing its binding to receptors, reducing inflammatory response. It may also cause apoptosis of activated inflammatory cells.

All indications start off with dosing at 0, 2, and 6 week of 5mg/kg. Subsequent doses are continued 8 week intervals, except for ankylosing spondylitis, which may be dosed every 6-8 weeks. If Crohn's disease, ulcerative colitis or rheumatoid arthritis patients have an inadequate response, the dose may be raised to 10 mg/kg/ dose. Infliximab should be discontinued if the patient does not show an adequate response to therapy. No dosage modifications are necessary with reduced renal or hepatic function.

Infliximab can cause infusion reactions in up to 20% of patients and requires premedication with diphenhydramine, and acetaminophen, with some patients requiring an H2 blocker (famotidine) and corticosteroids. The standardized orders at UConn Health include spaces to allow the prescriber to indicate their preference. Vital signs should be monitored pre and post infusion, 30 minutes into infusion and then every 30-60 minutes during the remainder of the infusion. Infliximab requires a low protein binding 0.2micron filter, with emergency medications readily available. Infusions should be started within 3 hours of admixture, and infused at 10ml/hr for 15 minutes, then increased every 15 minutes per protocol to complete the infusion in no less than 2 hours, if no prior reaction has occurred. Those who have previously reacted require a slower titration and lower maximum rate.

If signs of an infusion reaction occur, monitoring of vital signs should increase to every 2-10 minutes. Mild reactions may be managed with a decrease in rate, concurrent NS 1L bolus, and treatment of symptoms, but moderate or severe reactions call for stopping the infusion until symptoms have resolved, and treatment of the symptoms. For a moderate reaction, the infusion may be restarted once symptoms have resolved and symptoms treated. Severe reactions may necessitate discontinuation of therapy. Subsequent infusions should receive heavier pretreatment. Some patients will experience delayed reactions as much as a week later.

Infliximab carries Black Box warnings notifying of increased risk of serious infections or malignancies. Patients should be informed to monitor for signs of infection, to complete usual cancer screenings, and to bring unusual symptoms to the attention of medical personnel.

Infliximab should not be administered to patients to have moderate to severe heart

(Continued on next page)

More from AACU: Benlysta (Belimumab) by Kiernan O'Connor, Pharm D Candidate

Benlysta (belimumab) is a monoclonal antibody approved to treat systemic lupus erythematosus (SLE). Belimumab binds to human B lymphocyte stimulator protein (BLyS), preventing them from binding to B lymphocytes. This is thought to reduce the ability of B lymphocytes to generate an autoimmune response.

Belimumab is administered as 10 mg/kg IV every 2 weeks for the first 3 doses, then 10 mg/kg IV every 4 weeks. Belimumab often causes infusion reactions, including bradycardia, myalgias, headache, rash, urticaria, and hypotension. Hypersensitivity reactions, include hypotension, angioedema, urticaria, pruritus, and dyspnea can also occur. The infusion should be discontinued if the patient experiences anaphylaxis or angioedema, and it can be slowed or temporarily stopped if the patient experiences mild symptoms. Premedication with acetaminophen and diphenhydramine can be considered prior to subsequent treatment.

Other side effects of belimumab include nausea, diarrhea, fever, depression, insomnia, and increased rates of infection including pneumonia, urinary tract infections, cellulitis, and bronchitis. Progressive multifocal leukoencephalopathy (PML) has occurred in patients with SLE receiving belimumab. PML should be considered in patients on belimumab who present with new-onset or deteriorating neurological signs and symptoms. Patients should not receive live vaccines because they may be more prone to infections. Belimumab does not require dose adjustment for renal or hepatic dysfunction. Black/African-American patients may have a lower response rate to belimumab.

Belimumab should be allowed to reach room temperature and then reconstituted using sterile water for injection (SWFI). Reconstitute the 120 mg vial with 1.5 mL SWFI, and the 400 mg vial with 4.8 mL SWFI. Belimumab should be further diluted in 250 mL of 0.9% sodium chloride, and should be protected from light. Belimumab is not stable in dextrose. Belimumab should be administered over 1 hour through a dedicated IV line. Belimumab should not be given via IV push or bolus.

References:
Benlysta [package insert]. Brentford, England: GlaxoSmithKline PLC; 2014.
Hahn BH, Mcmahon MA, Wilkinson A, et al. American College of Rheumatology guidelines for screening, treatment, and management of lupus nephritis. Arthritis Care Res (Hoboken). 2012;64(6):797-808.
Navarra SV, Guzmán RM, Gallacher AE, et al. Efficacy and safety of belimumab in patients with active systemic lupus erythematosus: a randomised, placebo-controlled, phase 3 trial. Lancet. 2011;377(9767):721-31.

Infliximab, continued:

failure, history of severe reactions to infliximab or show signs of current infection. Invasive fungal infections may occur where these organisms are endemic or patients have lived or traveled in these areas (more information available upon request).

Other potential severe side effects of infliximab therapy include reactivation of hepatitis B or tuberculosis, hepatic damage, blood dyscrasias, and positive ANA titers. Other side effects include headache, nausea, diarrhea, upper respiratory tract infections, various other infections, hypertension, fever, runny nose. Concurrent treatment with corticosteroids increases risk of serious infections.

References available upon request.

From Our Billing Department: MAR Accuracy and Payments

We recognize the need to write MARs out in advance as busy as things are in NCCC. We also know that patient situations can cause last minute changes in drug or doses given.

If theses changes are made after the MAR is transcribed, please be sure the new drugs and /or doses are transcribed on the MAR.

Our payors routinely reject payment for items where the MAR does not match the items billed.

COS Update: Customized Rituximab Titration

In order to provider greater clarity and prescriber ease when customized rituximab infusion rates are necessary due to a patient history of severe reactions with previous rituximab doses, the chemotherapy ordering system (COS) has been modified. This modification could also be used if a rapid infusion of rituximab is indicated.

The option to order a customized rate of titration now appears in a drop down menu whenever rituximab is ordered. If a customized rate is not specified, the infusion rate will default to the NCCN protocol for titration. Ofatumumab titrations may also be modified in a drop down box.

When a customized rate of titration is ordered, it supersedes the NCCN guidelines. The titration will appear in the "Special Instructions" section on the printed orders and will read something like the example below.

**********The following instruction may override the NCCN Guideline**********
Administer Rituximab — starting rate of 25mg/ml for 30 minutes, increase rate by 25mg/ml every 30 minutes, to a maximum rate of 100mg/ml.

Changes to the OnGuard Closed Medication System

In the near future, IV chemo tubing will no longer come down capped with the orange closed luer connector. Intravenous tubing on hazardous meds and chemotherapy will still come primed from Pharmacy, but B Braun has discontinued that connector as it does not meet anticipated USP 800 standards. Once current supplies run out, we will be switching to using the syringe adaptor on the end of the IV line and a luer lock adaptor on the receiving line's port, similar to what we currently do with doxorubicin syringes.

What is USP 800? USP 800 is a series of mandates, recommendations and guidelines covering the handling of hazardous medications. It is used to set minimum standards for the safe storage, handling, admixing, transporting and administration of potentially hazardous medications to provide the best possible medications for the patients and the safest conditions for the staff. It will address many aspects of what both the Pharmacists and Nurses do on a daily basis to provide care for our Oncology patients.

USP 800 is currently being revised following a period of public feedback and is anticipated to be in effect sometime in 2016.

Suggestions for topics, questions and comments are welcome! Just reply to sender of this Newsletter or email Susan Glassman glassman@uchc.edu *or* Chris Niemann niemann@uchc.edu.