Oncology Pharmacy Newsletter

Volume 1, Issue 1, March 3, 2015

Welcome to the first issue of the Oncology Pharmacy Newsletter!

This is a biweekly publication dedicated to providing useful information for the staff treating patients who come to the Oncology Outpatient Pavilion.

We hope you will look forward to receiving this in your email and welcome questions and suggestions.

References available upon request.

Susan, Chris, Lisa and Maria

Since you asked....

Can **Carboplatin** be infused over 30 minutes when the order reads "Infuse over 60 minutes"?

Carboplatin is safely infused over 30 minutes in a wide variety of doses, but Pharmacy cannot give you permission to change the infusion rate of chemotherapy to other than was specifically written.

However, you can always approach the MD or APRN to have the order modified to allow for infusion over 30 minutes in a stable patient who needs to finish his or her infusion earlier than allowed by a 60 minute infusion.

The change in infusion rate must be documented as a verbal order and cosigned, or written by the prescriber.

It's a "Mab, Mab" World!

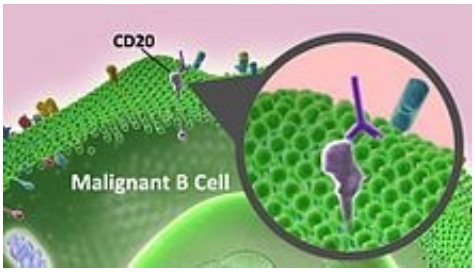
What is a MAB? "MABs" are monoclonal antibodies developed to target a particular antigen found on a cell. Once a target antigen has been identified, and a site specific antibody developed, it may be replicated in the laboratory setting and made into an administrable formulation. Many MABs have been developed to target specific cancer cells or interrupt autoimmune pathways. MABs are sometimes bound to chemotherapy or radioactive isotopes to deliver these cytotoxic substances directly to the target cell without causing significant systemic toxicity. Some cancers and immune mediated diseases are very responsive to treatment with MABs. In each issue a different "MAB" will be featured in 'It's a "Mab, Mab World".

Rituximab

Rituxan (rituximab) is a monoclonal antibody approved for use in CD20 positive B-cell diseases such as non-Hodgkins lymphomas, follicular lymphoma, and chronic lymphocytic leukemia as either a single agent or in combination with other chemotherapies such as CHOP, EPOCH, bendmustine, fludarabine or cyclophosphamide. Many of our patients receive rituximab for FDA approved non-oncology uses such as the treatment of rheumatoid arthritis, Wegener's Granulamatosis and microscopic polyangiitis. Still others receive rituximab for indications such as lupus vasculitis, MS, pemphigus vulgaris, ITP, stiff persons syndrome, neuromyelitis optica, and scleroderma.

Rituximab binds to the CD20 antigen on B-cells, causing cell death and reducing their proliferation. When used in Oncology, rituximab is generally dosed as 375mg/m^2. Depending on the indication, it may be administered weekly for 4 doses, then repeated as a single dose every 8-12 weeks. In combination regimens, rituximab may be administered every 14, 21 or 28 days. Refer to the disease appropriate NCCN guidelines for more specific dosing.

Doses for non-oncology uses generally follow one of two patterns: 1000mg on days 1 and 15, or 375mg/ m^2 on days 1 and 15, repeated six months or longer apart, or when symptoms and serology indicate redosing is necessary.



Rituximab causes frequent infusion reactions. Premedication with acetaminophen and diphenhydramine is recommended to reduce the likelihood and severity of infusion reactions. Symptoms of infusion reactions include SOB, chest pain, arrhythmias, hypotension, urticarial, angioedema, or hives. If these symptoms occur, the infusion should be halted and the patient assessed and monitored for improvement or further intervention. Should the patients symptoms resolve, with the approval of the assessing medical practitioner, the rituximab may be resumed at a reduced rate. Consideration may be given to broader premedication prior to subsequent treatments. These reactions may occur anytime during the infusion, or over the next day.

Other side effects of rituximab include fever, chills, severe dermatitis, death, bowel perforations, and increased incidence of infections including reactivation of hepatitis B . Patients with large tumor burdens may also experience tumor lysis syndrome, especially during the first cycle of treatment. On occasion, the initial dose of rituximab may be divided to reduce the severity of tumor lysis syndrome.

Continued on page 3

Medical Marijuana in CT—Quick Facts

Sandra Tokic and Narjiss Chalhaoi
PharmD Canidates, Class of 2015

Background[3]:

In 2014 Connecticut became one of 19 states to legalize marijuana use for medicinal purposes. There are several regulations in place to ensure the safe and responsible use of medical marijuana for patients who meet the qualifying criteria.

Patients must be registered with the state to be protected from any legal consequences for possession of marijuana.

Under federal law medical marijuana is considered a schedule I substance. Under the state of Connecticut law medical marijuana is considered a schedule II substance.

Not all pharmacies will be able to dispense medical marijuana. Licensed pharmacist will have to apply and obtain a dispensary license from the Department of Consumer Protection (DCP).

Obtaining a Medical Marijuana Registration Certificate[3]:

Patients must be at least 18 years old and Connecticut residents. Physicians must certify their patients through an online application with the department of consumer protection (DCP). Patient must then complete the online application that is certified by their physician and provide required documentation.

Pharmacists will work with patients to determine the right dose, strain, and dosage form appropriate for the patient.

Forms of Ingestion:

Smoking, Vaporizing, Eating, Tinctures and Tonics, Teas and Topicals.

Debilitating Conditions According to CT Law for Which Marijuana is Approved[1]:

- Cancer
- Glaucoma
- Human Immunodeficiency Virus (HIV) positive
- Parkinson's Disease
- Multiple Sclerosis
- Damage of nervous tissue in spinal cord with objective neurological indication of intractable spasticity
- Epilepsy
- Cachexia
- Wasting Syndrome
- Crohn's Disease
- Post-Traumatic Stress Disorder

Dispensary Locations in CT[1]:

Healing Corner Inc - Bristol,CT
http://thehealingcorner.com
Arrow Alternative Care Inc - Hartford, CT
http://www.arrowalternativecare.com
Bluepoint Wellness of Connecticut, LLC - Branford, CT
http://www.bluepointwellnessct.com
Thames Valley Alternative Relief, LLC - Montville, CT
http://www.thamesvalleyrelief.com
Prime Wellness of CT - South Windsor, CT
http://primewellnessofct.com
DB Wellness - Bethel, CT
http://www.ccc-ct.com

Safety Concerns[2]:

- Possible Adverse Effects (thought mild):
  - Dizziness
  - impaired attention
  - impaired balance
  - impaired cognition
  - imparied judgement
  - impaired memory
  - loss of sense of time
  - anxiety
  - disorientation
  - paranoia
  - psychosis
  - schizophrenia in adolescents
- Unestablished drug interactions and contraindications
- Accidental exposure to those without a prescription

Citations:

1. Gadea J. Medical Marijuana. Department of Consumer Protection; Drug Control Division. Presentation of October 13, 2014 at UConn Health Center.

2. Borgelt L, Franson K, Nussbaum A, Wang G. The Pharmacologic and Clinical Effects of Medical Cannabis. Pharmacotherapy. 2013;33;195-209.

3. Department of Consumer Portection. <http://www.ct.gov/dcp/cwp/view.asp?a=4287&q=503670&dcpNav=|&dcpNav_GID=2109> Accessed on February 26, 2015

Rituximab, continued from page 1:

Patients may be more prone to infections and the use of live vaccines is not recommended.

As rituximab is a monoclonal antibody and is not expected to cause neutropenia or thrombocytopenia, nor does it require dosing modifications in renal or hepatic failure, it may be administered while awaiting lab results.

At UConn Health, rituximab is mixed with sodium chloride to a concentration of 1mg/ml. First infusions should be started at 50mg/hour for 30 minutes and increased by 50mg/hour every 30 minutes to a maximum infusion rate of 400mg/hour. If this is tolerated, subsequent infusions may be infused at 100mg/hour for 30 minutes and increased by 100mg/hour every 30 minutes to a maximum rate of 400mg/hr. Newer NCCN guidelines allow for some patients who tolerate rituximab well to receive subsequent rituximab infusions over 90 minutes if the initial infusion was well tolerated. Currently, our COS guidelines do not include this rate of infusion as part of the standard template, but is a rate that can be individually ordered by the prescriber.

IV Fosaprepitant—It's Going to Look a Little Different

For several months IV Fosaprepitant (Emend) has been coming up as 150mg/150ml NS in an overstuffed 100ml NS bag due to a shortage of 150ml NS bags. This causes us to have bypass our usual admixing processes with DoseEdge. We have obtained information from the manufacturer, Merck, indicating it is safe for the patients and stable when mixed in 100ml NS and infused over the usual 30 minutes. You will now be receiving IV fosaprepitant in 100ml NS for all IV orders.

From Our Billing Department:

Tom and Olesander work diligently to keep us current with our billing. Each issue they will contribute tips to help ensure a smooth transaction and limit payor rejections.

This Issue's tip: **Correct Visit Number**

When going to the Pyxis to remove meds for your patient, bring along the **OINF** or **OCAN**. When patient names come up, duplicates sometimes appear that are lab or other visits for the day. Select the correct **ONIF** or **OCAN** visit to avoid billing on the incorrect visit type leading to a rejection of the charge you are generating when removing items from Pyxis.

Can Cannabis Oil Be Used for Treating Cancer?

By: Sandra Tokic
2015 PharmD Candidate

Many times, your patients may approach you with a question related to a therapy that they may have heard about on television, on the Internet, or by word of mouth. One example of a patient question that has come up recently in the Neag Cancer Center is whether or not cannabis oil can be used for treating their cancer.

Currently, cannabis oil (derived from marijuana) has been studied and is used for nausea, pain relief, and for weight gain in various serious disease states such as cancer, AIDS, MS, and many others.1 There are non-randomized control studies done on rats that have been exploring the antitumor effects of cannabis oil, and case reports of survival prolongation with cannabis oil exist.[2]

The American Cancer Society states:

"As of 2014, there are reports online suggesting that marijuana oil or 'hemp' oil can cure cancer, as well as diabetes, ulcers, arthritis, migraines, insomnia, infections, and many other diseases. These claims are largely unsupportable. Relying on marijuana alone as treatment while avoiding or delaying conventional medical care for cancer may have serious health consequences."[1]

In other words, today's standard of care does not support the use of cannabis oil alone to "treat" cancer. The only time a recommendation for cannabinoids should be made is for the treatment of symptoms such as nausea, pain, and weight loss due to cancer or other devastating diseases.

Citations:

1. Marijuana. American Cancer Society. August 26, 2014. Available at: http://www.cancer.org/treatment/treatmentsandsideeffects/complementaryandalternativemedicine/herbsvitaminsandminerals/marijuana. Accessed 2/8/2015.

2. Guzman M. Cannabinoids: potential anti-cancer agent. Nat Rev Cancer. 2003;3:745–755.

3. Singh Y, Chamandeep, B. Cannabis Extract Treatment for Terminal Acute Lymphoblastic Leukemia with a Philadelphia Chromosome Mutation. Case Rep Oncol. 2013 Sep-Dec; 6(3): 585–592