PHARMACY & THERAPEUTICS
UPDATE

METHODIST

A PUBLICATION OF THE MEDICAL STAFF PHARMACY & THERAPEUTICS COMMITTEE

bestcare.org

January 2020 Volume XXVII; Number 1

Critical Drug Shortages

On-going shortages and strategies to minimize the impact to patient care for drugs with limited availability

Shortage:	***Morphine, Hydromorphone PCA***
Action:	*oral alternatives, intermittent dosing*
Shortage:	***Heparin***
Action:	*oral or injectable alternatives*
Shortage:	*Lidocaine, Bupivacaine injection with and without epinephrine*
Action:	*alternative concentrations, sizes*
Shortage:	*Dextrose 50% vials*
Action:	*glucagon*

In this Issue

If you have any questions or concerns, please contact the NMH Pharmacy Purchasing Department: 402-354-4337.

Insulin Sliding Scale Powerplan Change – Deletion of High Dose Regimen

The Cerner Insulin Sliding Scale Powerplans for Novolog and Regular Insulin will be modified to remove the High Dose sliding scale option (5-30 units). The Standard (2-12 units) and Moderate (4-24 units) dosing scales will remain within the plan. The change was based on low use of the High Dose scale as well as a slightly higher rate of hypoglycemia compared with the other dosing scales. Providers have the ability to create a custom insulin sliding scale regimen in Cerner if necessary to meet patient needs.

Vancomycin IV Monitoring – Daily Serum Creatinine

To enhance the safety of vancomycin injectable therapy, the Medical Executive Committee approved a **recommendation to obtain a serum creatinine measurement on a daily basis**. Many patients have daily orders for labs that contain a serum creatinine measurement. If an order is not already present, pharmacy will order a serum creatinine lab as part of their vancomycin dosing and monitoring protocol.

The incidence of acute kidney impairment associated with vancomycin is 10% or less, however when combined with piperacillin/tazobactam and/or other nephrotoxic medications, the potential for renal insufficiency may increase.

Ketorolac Injectable – Reduced Dosing Recommendation

Ketorolac Injectable, a non-steroidal anti-inflammatory analgesic, is used to treat acute and chronic pain and is associated with GI and renal adverse events. Typical dosing is 15-30mg with dosing modifications for the older adult, those with renal impairment, or those weighing less than 50kg. Studies have suggested that a ceiling analgesic effect is seen at 10-15mg doses and adverse events may occur more frequently at higher doses.

To enhance the safety when using ketorolac, the Medical Executive Committee has approved 15mg to be the standard dose over 30mg. Cerner order catalog and powerplans will be modified to reflect the preferred dosing in the upcoming weeks. Providers can choose to repeat a 15mg dose if the initial 15mg dose is ineffective and remain within the package labeling recommended dose.

Influenza Antiviral Treatment Recommendations

- **Antiviral treatment is recommended as early as possible for any patient with confirmed or suspected influenza who:**
  - **is hospitalized;***
  - **has severe, complicated, or progressive illness;* or**
  - **is at higher risk for influenza complications.**

  * Oral oseltamivir is the recommended antiviral for patients with severe, complicated, or progressive illness who are not hospitalized, and for hospitalized influenza patients and pregnant patients who have influenza.

- Antiviral treatment also can be considered for any previously healthy, symptomatic outpatient not at high risk for influenza complications, who is diagnosed with confirmed or suspected influenza, on the basis of clinical judgment, if treatment can be initiated within 48 hours of illness onset.

- **Decisions about starting antiviral treatment should not wait for laboratory confirmation of influenza** (see resources regarding Clinical Description and Lab Diagnosis of Influenza for more information on influenza diagnostic testing).
  - Clinical benefit is greatest when antiviral treatment is started as close to illness onset as possible.

Reference: CDC Website

Antiviral Agents for Treatment and Prevention of Influenza Virus

Parameter	Oseltamivir (Tamiflu®)	Zanamivir (Relenza®)	Peramivir (Rapivab®)	Baloxavir (Xofluza®)
Treatment Dose	≥13 yr: • 75mg po BID x 5 days 2wk-12yr: wt based	Adults: • 2 inhalations BID x 5 days	Adults & adolescents: • 600mg IV x1 Children ≥2y: • 12mg/kg IV x1	≥12yr: • 40-79kg:40mg po x1 • ≥80kg: 80mg po x1
Prophylaxis Dose	≥ 13yr: • 75mg po daily ≤12yr: wt based	Adults: • 2 inhalations once daily x 7 days	✖	✖
Renal dosing	Yes	No	Yes	No
NMH Formulary status	Formulary	Non-formulary	Restricted to ID	Non-formulary
Food-Drug interaction				Yes-Cations/Dairy
Cost of regimen (WAC)	$80-102	$59	$950-1140 (600mg)	$180 (1day course)

About Xofluza® CAPSTONE-2 Trial:

- Xofluza® significantly reduced the time to improvement of flu symptoms ***versus placebo*** in people at high risk of complications from the flu (median time 73 hours versus 102 hours; p<0.001).
- Similar efficacy results were seen between Xofluza® and oseltamivir in relation to duration of symptoms (median time 73 hours versus 81hours).
- In subjects infected with type B virus, the median time to improvement of flu symptoms was shorter in the Xofluza® group compared to the placebo group (75 hours versus 101 hours respectively).
- Adverse events reported in at least 1% of adult and adolescent subjects treated with Xofluza® included diarrhea (3%), bronchitis (3%), nausea (2%), sinusitis (2%) and headache (1%). Xofluza was well-tolerated and no new safety signals were identified.

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