OUR LADY OF THE LAKE RMC

InPharmation

The official publication of the Pharmacy Department

Volume 2, Issue 3

Inside this issue:

Staff Spotlight

Asia Walker, CPhT

Favorite Scripture: "If your enemies are hungry, feed them. If they are thirsty, give them something to drink. In doing this, you will keep burning coals of shame on their heads." Romans 12:20

Asia, one of the veteran technicians, loves helping patients! When she is not entertaining everyone in the pharmacy, you can find Asia taking care of our patients by helping one of the technicians or pharmacists. Don't be fooled by her joking personality. Asia is currently in school with dreams of becoming a pharmacist. When she is not at work, she is in class building her future.

Asia's dream vacation would be sitting on the beaches of Bora Bora. She loves snacking in the middle of the night. This Easter, you will find Asia snacking on a chocolate bunny, her favorite Easter treat.

There is no question that Asia loves to help others. If she won the lottery, she would give to her family. If she could change one thing in this world, she would make education free for everyone. What's most interesting, however, is that Asia's desire is to become the most humble person she can be.

Sepsis 3: Time to get Comfortable with the SOFA

By Lauren Linder, PharmD

Sepsis, previously defined by the 2012 Surviving Sepsis Campaign as the presence of infection, either probable or documented in combination with the presence of ≥ 2 systemic inflammatory response syndrome (SIRS) criteria, has recently been challenged and adjusted to better predict patient outcomes. The Society of Critical Care medicine (SCCM) in combination with the European Society of Intensive Care Medicine (ESICM) created a task force to evaluate and redefine this public healthcare burden. True incidence of sepsis diagnosis is unknown, however in 2011 it was estimated that sepsis diagnoses accounted for $20 billion of hospital costs in the United States and was attributable to high mortality rates from infection. With the increased cost and risk associated with this disease state, re-evaluation of its current definitions was warranted. A greater understanding of the underlying pathophysiology led to the identification of problems with the previous sepsis definitions and diagnostic tools; recognizing the lack of a standard diagnostic tool in all healthcare settings. Enter Sepsis-3, which aims to redefine sepsis and utilize evidence-based diagnostic tools identifying organ dysfunction in an effort to better characterize patients most at risk for severe and complicated infections.

Sepsis Definitions & Subsets

Surviving Sepsis Campaign (2012)		Sepsis 3 (2016)	
Sepsis	Infection + ≥ 2 systemic inflammatory response syndrome (SIRS) criteria	**Sepsis**	Life-threatening organ dysfunction caused by a dysregulated host response to infection
Severe sepsis	Sepsis + sepsis-induced organ dysfunction or tissue hypoperfusion	**Septic Shock**	Subset of sepsis in with underlying circulatory and cellular metabolism abnormalities are enough to increase a patient's mortality : Persistent hypotension requiring vasopressors to maintain a MAP ≥ 65mmHg and having a serum lactate > 2mmol/L
Septic Shock	Sepsis-induced hypotension persisting despite adequate fluid resuscitation		

Sepsis Diagnostic Tools

Positive SIRS : ≥ 2 of the criteria		Positive qSOFA: ≥ 2 of the criteria	
SIRS	**Temperature** : > 38° C or < 36° C **Heart Rate** : >90 beats/min **Respiratory rate** : >20 breaths/min or $PaCO_2$ < 32mmHg **White blood cell count** : >12,000 mm^3 or <4000mm^3 or >10% immature bands	**qSOFA (quick SOFA)**	**Respiratory rate:** ≥ 22 breaths/min **Altered mental status:** Glasgow Coma Scale score < 15 **Systolic blood pressure** ≤ 100 mmHg
		SOFA	**Respiration** **Coagulation** (Platelets) **Liver** (Bilirubin) **Central Nervous System** (GCS) **Renal** (Creatinine, Urine Output)

Key Differences in Sepsis 3

- **SIRS no longer used as diagnostic criteria**: considered by the task force as not helpful in identifying mortality in sepsis patients
- **SIRS replaced by qSOFA (quick SOFA) or SOFA (sequential organ failure assessment score):** qSOFA includes criteria that can easily be assessed in all healthcare settings; a positive qSOFA should prompt the clinician to investigate organ dysfunction further. The task force identified the SOFA score as a better predictor of hospital mortality vs. the SIRS criteria
- **Severe sepsis eliminated, only sepsis and septic shock remain:** old severe sepsis definition now better defined by the septic shock definition
- **Lactate level now included in Septic Shock**: previously only regarded as indicating organ dysfunction, but studies have shown that continued elevated lactate levels are a better predictor for increased mortality

Formulary Changes

Added to formulary:

- **Clevidipine (Cleviprex)** is an IV, short acting, dihydropyridine calcium channel blocker used to reduce blood pressure in acute situations. Restricted to perioperative areas, critical care units and the emergency department.
- **Sucroferric oxyhydroxide (Velphoro)** is an iron-based phosphate binder indicated for the control of serum phosphorus levels in patients with chronic kidney disease (CKD) receiving dialysis. Therapeutic interchange of all doses of Renagel, Renvela, and Fosrenol to Velphoro. For pediatrics Renvela will remain formulary agent.
- **Sodium Tetradecyl Sulfate (Sotradecol)** is approved for treatment of varicose veins but has been documented safe and effective in the literature for treatment of symptomatic hemangiomas and esophageal varices. Restricted to treatment of severe bleeding secondary to esophageal varices that has failed other treatment modalities. Therapy mainly be used for pediatric patients.

Newly added restrictions:

- **IV Acetaminophen (Ofirmev)** now has newly added restriction for the treatment of pain in Robotic Heart Surgery patients. One dose post-op may be given only if the first dose is given in the intraoperative period and must be ordered through the Robotic Heart Order Set.
- **Sevelamer Carbonate (Renvela)** now restricted to pediatric patients and adult patients unable to tolerate sucroferric oxyhydroxide (Velphoro).

IV to PO Update:

- IV levetiracetam (Keppra) to PO levetiracetam
- IV lacosamide (Vimpat) to PO lacosamide

Patient Safety Corner

Safety Opportunities:

- There have recent instances of pharmacists verifying orders for IV push digoxin on Medicine units that do not allow this type of administration. Please remember to always check the Medications Requiring Special Monitoring document anytime you come across an order for any high-risk medication to ensure that the unit is able to administer the medication. If the unit is unable to administer the medication, call the prescribing physician and ask that the patient be transferred to a unit that can support the administration or recommend an alternative medication that is allowed by that specific unit. In an emergent situation, the physician themselves may administer the medication on a restricted unit.

- Please remember to sort oral syringes and IV doses one at a time according to the SOP. When sorting is done in batches where several sort labels are printed at a time and then applied to the patient label, the sort labels get mixed up. This can cause a delay in patient care if the wrong label is affixed to the syringe.

Policy Changes

The updated IV Push Program went live last month. The conversion is estimated to save pharmacy and nursing roughly $70,000 annually. Major changes and order verification processes are outlined below.

- Cefepime 1 gm, Meropenem 500 mg and Meropenem 1 gm have been added to the IVPB to IV Push Program and Cefotetan 1gm and 2gm has been removed
    - ◊ The vials for the antibiotics have already been loaded in the Pyxis machines of the approved units
- 5E, CAR1, NEUR, MED1, MED5 and MED6 have been added to the program
- If you are entering an order for an antibiotic on the list and the patient is on one of the units on the list, the antibiotic should be entered as an IV Push.
- If the physician enters the CPOE order as an IVPB, please change the drug (select the vial) and route to IVP in Cerner.
- When changing the order, please include "*Per IVPB to IV Push protocol*" in the comment field

The Oral Ketamine for Intractable Pain Protocol has been approved. Oral ketamine will be used for analgesia in terminally ill adult patients with pain refractory to standard opioids and other adjunct therapies. Restrictions include:

- Orders for oral ketamine must be prescribed by a Palliative Care Physician
- Patients must have a DNR order
- Patients must be on 5-West, RCU or SPCU units
- Patient must be 18 years of age or older
- All ketamine orders should include clear goals for pain scores as well as additional parameters for contacting providers if necessary

Piperacillin/Tazobactam (Zosyn) prolonged infusion has been approved for use house-wide. Clinical studies of prolonged 4-hour infusion of piperacillin/tazobactam 3.375 gm IV Q8H support reduced mortality relative to traditional short-infusion in both ICU patients and in general medical patients infected with gram negative bacilli, including *Pseudomonas aeruginosa*. A multidisciplinary pharmacy and nursing committee are working to plan implementation. Frontline pharmacists will be asked to participate in planning. Go-live TBD.

Regulatory

Recent FDA Drug Approvals

- **Brivaracetam (Briviact):** Indicated as adjunct therapy in the treatment of partial-onset seizures in adults and adolescents 16 years of age and older with epilepsy.

ISMP 2016-2017 Best Practice

Each year the Institute for Safe Medication Practices releases a list of best-practices pertaining to specific medication safety issues that continue to cause fatal and harmful errors in patients. The purpose of these best practices are to draw attention to these safety issues so that hospitals may focus on avoidance of these common errors over the next few years. Best Practices from previous years were detailed in prior newsletters.

#7 Segregate, sequester, and differentiate all neuromuscular blocking agents (NMBs) from other medications, wherever they are stored in the organization.

- Eliminate the storage of NMBs in areas of the hospital where they are not needed.
- In areas where they are needed (i.e. ICU), place NMBs in a sealed box with a breakaway lock or, preferably, in a rapid sequence intubation (RSI) kit.
- If NMBs must be stored in automated dispensing cabinets, standardize the storage practices throughout the hospital by keeping them in lock-lidded pockets.
- Segregate NMBs from all other medications in the pharmacy by placing them in separate lidded containers in the refrigerator or other secure, isolated storing area.
- Differentiate these products by placing auxiliary labels on all storage bins and final medication containers (vials, syringes, and IV bags) of NMBs that state: **"WARNING: PARALYZING AGENT-CAUSES RESPIRATORY ARREST"**

Rationale:
The goal of this best practice is to prevent errors related to the accidental administration of NMBs to patients, especially those not receiving proper ventilator assistance. Administration of NMBs results in respiratory paralysis and errors in compounding, administration, and dispensing of these medications have resulted in death or permanent injury. In patients requiring ventilator assistance, psychological trauma can occur if NMBs are administered prior to sedation. The majority of errors associated with NMB use are the result of compounding an NMB instead of another medication. In 2014, a case received national attention when a patient died after receiving a NMB instead of fosphenytoin. In order to avoid inappropriate administration of NMBs segregation of these agents and use of proper warning labels should be instituted.

WANTED

Pharmacy Technician to participate on Newsletter Committee

Committee member responsibilities include:

- Attending monthly committee meetings (2nd Monday of the month at 2:30)
- Bring ideas for newsletter content

Any interested persons should email:

Jennifer.jones2@ololrmc.com

INPHARMATION EDITORIAL STAFF

Editor-in-Chief
Jennifer Jones, PharmD, BCPS

Writing Staff
Ashley Joseph, PharmD
Brandi LaFrance, PharmD, BCPS
Katie Ducote, PharmD, BCPS
Kellee Brown, PharmD
Stephanie Chang, PharmD
Lauren Linder, PharmD

Reminders

March is National Nutrition Month: Every Thursday in the Café stop by to learn about a different aspect of your nutritional health!

March 18th: MATCH DAY for Pharmacy Residency Programs

March 19th: Easter in the Park – OLOL Annual Easter Egg Hunt

March 23rd: LSHP CE @ Ochsner featuring OLOL Resident, Stephanie Chang

March 25th: Good Friday

March 27th: Easter

April 1st: April Fool's Day

SAVE THE DATE: May 26-28, 2016 LSHP Annual Meeting in New Orleans