

the Remedi Pulse

MEDICATION
MONITORING



A CLINICAL AND REGULATORY UPDATE FROM REMEDI SENIORCARE

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Survey Solutions

with William Vaughan, BSN, RN
VP of Education & Clinical Affairs

More on Monitoring Medications

This month we build on the concepts related to medication monitoring presented in the September issue of the *Pulse*.

More is not necessarily better: I've reviewed hundreds of plans of corrections submitted by facilities that were cited for failing to appropriately monitor medications. The corresponding deficiencies often criticized the timing and/or the frequency by which a medication was monitored. For example, a resident on Coumadin was prescribed an antibiotic known to interact with the drug, but the facility failed to change either their clinical or laboratory approaches aimed at monitoring this high risk medication. In another case, dehydration developed in a resident, who was receiving a medication which required renal dosing, but no assessment of the blood urea nitrogen or creatinine was performed until signs of drug related toxicity appeared. In an effort to avoid repeat deficiencies, facilities sometimes take an extreme approach and develop policies and procedures that actually result

in the "over-monitoring" of medications. Consider a facility that requires a blood pressure to be assessed four times a day for any resident receiving an antihypertensive medication. Or, how about the use of monitoring sheets that require documentation of target behaviors each shift on every resident receiving any psychoactive drug? These approaches, while operationally efficient, may result in a diminished level of care for the resident and an increased risk of deficiencies for the facility. Excessive monitoring can result in data overload that actually hinders a clinician's ability to assess a resident. There is also the quality of life consideration for residents whose daily activities are frequently interrupted to obtain a blood pressure or finger stick blood glucose. Lastly, assessment and medical record related deficiencies are regularly cited when staff does not fill in all those monitoring blocks on the MAR ... or worse, fills them in without

FOR MORE INFORMATION
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Excessive monitoring can result in data overload that actually hinders a clinician's ability to assess a resident.

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Medication Monitoring - Without the Needle Stick

Prepared by Jennifer Hardesty, Pharm.D., FASCP, Chief Clinical Officer

Many residents have blood drawn routinely for a variety of laboratory tests- CBC, CHEM7, Serum Drug Levels, LFTs, A1C - just to name a few. While these laboratory results provide a picture of the resident's health and tolerance to medication therapy, it is only a snapshot in time. In the weeks and months between lab tests, changes in health status or addition/deletion of medications can alter the resident's condition. Early recognition of signs and symptoms of adverse drug effects will expedite the re-assessment and any readjustment of medication therapy.

For residents in hospice or comfort care, there is no 'free pass' when it comes to monitoring medications - we are still required to monitor any medication they continue to receive. Residents may still take anticoagulants, insulin, or seizure medications that can cause adverse reactions, discomfort, and decrease their quality of life if not monitored adequately. The type of monitoring should be tailored to the individual resident and may include non-invasive monitoring for signs/symptoms and occasional lab tests for more critical situations. Overall, clinicians should be aware of general signs and symptoms that may indicate adverse drug reactions or medication toxicities in absence of recent lab data. While lab draws may be the most objective way to monitor, it is not the only way!

NON-INVASIVE MONITORING FOR MEDICATION TOXICITY / ADVERSE EFFECTS

DRUG CLASS	TOXICITY CONCERN	SIGNS/SYMPTOMS OF TOXICITY OR ADVERSE REACTION
ACE Inhibitors	Hyperkalemia	Nausea, fatigue, muscle weakness, bradycardia
Amiodarone	Hepatotoxicity Thyroid Dysfunction	Edema, lethargy Weight loss, hair loss
Antipsychotics	Abnormal Movements Hyperglycemia	Akathesia, dyskinesias, dystonias Increased thirst, urination, hunger
Carbamazepine/ Oxcarbazepine	High Blood Level Blood Dyscrasias Hyponatremia	Sedation, tremor, tachycardia, nystagmus Vomiting, bruising, high fever Nausea, lethargy
Corticosteroids	Hyperglycemia	Increased thirst, urination, hunger
Cyclosporine	High Blood Level	Hypertension, headache, fluid retention
Digoxin	High Blood Level	Nausea, vomiting, confusion, vision changes
Diuretics	Hypokalemia	Dehydration, muscle weakness/cramping, palpitations
Lithium	High Blood Level	Confusion, tremor, weakness, increased urination
Metformin	Lactic Acidosis	Nausea, vomiting, hyperventilation, lethargy
Oral Hypoglycemics	Hypoglycemia	Sweating, tremor, headache, tachycardia
Phenytoin	High Blood Level	Blurred vision, ataxia, lethargy, slurred speech
Potassium Supplements	Hyperkalemia	Nausea, fatigue, muscle weakness, bradycardia
Valproic Acid	Thrombocytopenia Hyperammonemia	Bruising, bleeding Lethargy, vomiting, mental status change
Tacrolimus	High Blood Level	Tremor, hypertension, edema
Theophylline	High Blood Level	Tremor, tachycardia, headache

Reference:

Beizer, J. L., Higbee, M. D., Semla, T. P. (2013). Geriatric dosage handbook. American pharmacists association. 18th Ed. Wolters Kluwer.

Disorders of the Parathyroid Glands – Effects and Treatment

Prepared by Vincent Severn, Pharm.D.,
Clinical Consultant Pharmacist

The parathyroid glands are a collection of 4 small glands. They are located in the back of the neck behind the thyroid gland and secrete a hormone called parathyroid hormone (PTH); its main function is to regulate calcium. Calcium plays a key role in muscle, skeletal, and nervous system function. When calcium levels in the blood are low, the parathyroid glands secrete PTH, increasing blood calcium levels by three mechanisms:

- PTH increases breakdown of bone and release of calcium from stores (resorption)
- PTH increases calcium reabsorption in the proximal tubules of the kidneys
- PTH stimulates the activation of vitamin D to calcitriol, which promotes calcium absorption from the GI tract

HYPOPARATHYROIDISM

Although extremely rare, it is possible for hypoparathyroidism to occur.

Causes:

- Injury during thyroid or neck surgery
- Radioactive iodine treatment for hyperthyroidism
- Autoimmune disease
- DiGeorge syndrome

Symptoms:

- Brittle nails
- Dry hair/skin
- Seizures
- Tingling of the extremities

Treatment:

- Calcium carbonate and vitamin D supplements
- Intravenous infusion of calcium for life-threatening hypocalcemia

Regulating calcium is vital for adequate muscle, skeletal, and nervous system function. The process by which disorders of the parathyroid glands affects this balance helps explain the principles of treatment.

HYPERPARATHYROIDISM

This disease is most commonly seen in adults over 60 years of age, but can occur in younger adults. Women are usually affected more than men.

Causes:

- Primary hyperparathyroidism occurs when a parathyroid gland grows larger and secretes too much PTH
- Secondary hyperparathyroidism occurs as a result of disorders that cause low blood calcium:
 - Malabsorption disorders
 - Vitamin D disorders
 - Renal disease

Hyperparathyroidism is so prevalent in renal disease because of the disruption of calcium-phosphorus homeostasis. As renal function declines and phosphorus clearance decreases, the resulting increased phosphorus induces PTH secretion by three mechanisms:

1. It directly stimulates the parathyroid glands.
2. It induces mild hypocalcemia by forming calcium phosphate.
3. It stimulates fibroblasts growth factor 23, which inhibits the conversion of vitamin D to calcitriol.

Hyperparathyroidism is usually diagnosed before symptoms occur.

Symptoms:

- Bone pain
- Fractures
- Kidney stones
- Nausea
- Depression

Treatment:

- Primary hyperparathyroidism
 - Can be monitored if not severe
 - Surgery may be required for more severe cases
- Secondary hyperparathyroidism
 - Phosphate binders (e.g., PhosLo, Renegel, Renvela) to decrease phosphorus
 - Vitamin D therapy to mimic calcitriol and decrease PTH secretion

References:

Chisolm-Burns MA, Wells BG, Schwinghammer TL, et al. Chronic and end-stage renal disease. In: Pharmacotherapy principles & practice. McGraw Hill; 2008:chapter 23.

Hyperparathyroidism. Medlineplus. Available from: <http://www.nlm.nih.gov/medlineplus/ency/article/001215.htm>. Accessed 12Aug2015.

Hypoparathyroidism. Medlineplus. Available from: <http://www.nlm.nih.gov/medlineplus/ency/article/000385.htm>. Accessed 12Aug2015.

Saliba W, El-Haddad B. Secondary hyperparathyroidism: pathophysiology and treatment. J AM Board Fam Med. 2009;22(5):574-581.

Nurse of the Month

KENNETH SIMMONS, LPN

Edenwald Retirement Community, Towson, MD



CONGRATULATIONS to Kenneth Simmons, LPN, at Edenwald Retirement Community, in Towson, MD for being chosen as the Remedi “Nurse of the Month.” Kenneth was nominated by his DON, Susan Denning. Per Susan, “Kenneth ‘Kenny’ Simmons began working at Edenwald in 1995 through a nursing agency as a LPN. He states he’s been a member of the Edenwald family since 1995, but officially joined Edenwald in 2007. Kenny has worked on all health care units at Edenwald including a specialized assisted living dementia unit and long-term care unit, but really found his home on Southerly Place. Southerly Place is a social-model assisted living unit where the residents have a high degree of independence, but may be medically fragile or need additional emotional support. Kenny has been the nurse they turn to the most for the past four years. He has a natural ability to put the residents at ease and displays a genuine compassion for their concerns. Kenny’s years of experience as a nurse assist him to identify areas of concern for the residents and communicate those concerns effectively to the physicians. He is regularly complimented by residents, families, coworkers, physicians, and

outside vendors for his calm and pleasant demeanor. Kenny can balance a variety of issues without becoming flustered and maintains his clinical focus on tending to the residents’ physical needs and is very compassionate to their emotional needs, as well. He is a rare mix of strong clinical skills, compassion, strength, and caring. Kenny has also been awarded annual scholarships through the Resident Scholarship Fund at Edenwald to further his education to obtain his Registered Nursing license. Words that residents, families, and doctors use to describe Kenny: ‘my angel,’ superstar, phenomenal, kind, thoughtful, endearing, wonderful, amazing, patient, understanding, good listener, helpful, and the one I hear the most ‘My Kenny.’ It is a delight and honor to have Kenny on our team and Edenwald is blessed to call him a part of our nursing family.”

The Remedi “Nurse of the Month” exemplifies excellence in nursing practice. Email your Nurse of the Month nomination(s) to Rebecca.Ogden@RemediRx.com. Nurses Rock!!

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actually conducting and performing the assessment.

A new twist on monitoring: Pharmacogenomics is the study of how genes affect a person’s response to drugs. While the science of pharmacogenomics is not new, the clinical applications associated with it have increased significantly over the past few years. Briefly, a blood or saliva sample is tested, and the results are then used by a prescriber to dose certain medications. Much attention has been paid to the potential benefits of pharmacogenomics in the management of residents receiving warfarin. And companies that offer pharmacogenomic testing have recently increased their marketing efforts to long-term care facilities. In a broad sense, this type of genetic testing could certainly be considered monitoring in the context of F329. Since this testing is relatively new to long-term care, nursing staff should be educated on its use and application to a resident’s clinical management. A facility’s Medical Director and Consultant Pharmacist should collaborate on how pharmacogenomic testing will be utilized

in their facilities. Lastly, facilities should recognize that surveyors may not be familiar with pharmacogenomics which can result in increased scrutiny of residents who undergo such tests.

Note: Bill was a surveyor with the Maryland State Survey Agency from 1988 until 2001. He became Chief Nurse of the agency in 2001 and remained in that position until joining Remedi SeniorCare in 2013.