The Transition

4th Year Pharmacy Students Entering the Real World of Pharmacy

The Transition, Volume II, Issue III April 2015

Special points of Interest:

- Preceptor Highlight
- Rotation Highlight
- Clinical Pearls
- Remember the Math?
- After Graduation
- Upcoming Events
- Just for Fun

Inside this issue:

Preceptor Highlight

Dr. Matthew Phillips graduated from the University of Georgia College of Pharmacy in 2011. He initially gained pharmacy experience as an intern at Kroger pharmacy and had every intention of continuing his career as a retail pharmacist. However, upon starting his APPE's, he became passionate about patient-centered care in the hospital setting. Dr. Phillips realized the importance of a clinical pharmacist serving as a member of the multidisciplinary team, and he describes his interactions with physicians as his favorite aspect of rotations.

After graduation, Dr. Phillips took a position with Wellstar Paulding hospital, as the full-time pharmacist in the emergency room and cash-only retail pharmacy. His responsibilities included performing medication reconciliation, responding to codes and traumas, and participating in direct patient care. In 2012, Dr. Phillips transitioned into a resource pharmacist position at Wellstar, which was a clinical pharmacist position with staffing responsibilities. He currently continues to practice at Wellstar Paulding as a clinical pharmacist.

Dr. Matthew Phillips, Pharm.D.

Dr. Phillips became a first-time preceptor this year. He strongly believes that a preceptor help students gain experience and lead them to finding their passion in the way he did. His particular style would be considered as demonstrative, or a very hands-on approach. This style allows the students to strengthen their critical thinking skills and actively learn.

Dr. Phillips recently became a first-time father, and he enjoys spending time with his wife, son, and two dogs. He also enjoys following his Georgia Bulldogs.

Written by: Neda Javan (Atlanta)
Edited by: Kathryn Maples (Augusta)

Georgia War Veterans Nursing Home

When we received our rotation schedule last March, I was a ball of nervousness, curiosity, and excitement. As I perused the list, I stopped at my 5th rotation: Outpatient Geriatrics – GA War Veterans Nursing Home. "Surely this is a mistake! I never ranked anything remotely close to geriatrics! Someone told me they still use paper charts. Who still uses paper charts? I don't know if I'm going to like this rotation," my mind thought as October 13th fast approached.

My apprehension about the rotation quickly vanished after the first few days. My preceptor, Patricia Knowles guided and mentored us throughout the five weeks and gave me a better understanding of the nuances of geriatric care. At the beginning of the rotation, we were given a list of patients and the dates of their previous month's mediation review. For the drug regimen review, we looked through the patient's progress notes written by the other healthcare professionals including physicians, nurses, physical therapists, dieticians, occupational therapists, and social workers. We checked their labs for any changes, and then based our medication therapy recommendations on all of the gathered information. Because GA War, or the "Blue Goose" as it is affectionately called, was so small, we were able to work closely with the entire staff and discuss any recommendations with the residents and the medical director. We were also tasked with meeting and talking to our patients, not only to talk about their medications, but also to get face-time with the veterans. Weekly topic discussions gave us more knowledge about specific disease states affecting the geriatric population such as Alzheimer's disease, depression, and sundowning.

Because of this rotation, I have become more confident in providing medication recommendations to the interdisciplinary team, and I have grown to enjoy geriatric care. I have encouraged rising P4s to request this rotation because I found it so beneficial and rewarding.

Written by: Kyley Makanani
Edited by: Julianne Jones
Pharm.D. Candidates 2015 (Augusta)

Dose-Dependent Morbidity & Mortality Benefits in Heart Failure

Heart failure is classified as either reduced ejection fraction (HF_rEF), "systolic heart failure", or preserved ejection fraction (HF_pEF), "diastolic heart failure". Reduced ejection fraction heart failure is defined as an ejection fraction ≤ 40%. In addition, the American College of Cardiology/American Heart Association staging classifies heart failure by structural heart changes and the presence or absence of symptoms. Class A includes patients at risk for HF but have no structural heart disease or symptoms. Class B involves structural heart disease without signs or symptoms. Patients with a class C heart failure diagnosis have structural heart disease with prior or current symptoms. Finally, class D encompasses patients with refractory HF.

It is in the HFrEF Class C patients that angiotensin-converting enzyme inhibitors (ACE inhibitors), angiotensin II receptor blockers (ARBs), beta-blockers, and aldosterone antagonists have proven morbidity and mortality benefit. These agents prevent cardiac remodeling, include symptomatic benefit, and reduce hospitalizations. In the controlled clinical trials that evaluated survival, the dose of these agents was not determined by therapeutic response, but was increased to a predetermined target dose. Therefore, the heart failure guidelines recommend titrating to the doses that have been shown to reduce cardiovascular events. This dose-dependent morbidity and mortality benefit can help direct therapy because before adding additional agents to control blood pressure, one strategy would be to ensure the patient is at the targeted therapy dose for these agents. Simply having a patient on a low dose of lisinopril may not reduce cardiovascular morbidity and mortality. This concept opposes what we often implement in our diabetic patients because even a low-dose ACE inhibitor provides kidney protection in diabetes. Therefore, when managing heart failure, the goal is to start with a low dose and titrate these agents to the target dose for mortality benefit, as tolerated by the patient based on hemodynamics, labs, and clinical condition. Currently, there is no recommended titrating schedule for these agents. However, in clinical trials, the doses of ACE inhibitors and beta-blockers were increased at one to two week intervals if the patient did not become hypotensive[1,2,3,4]. In addition, eplerenone was increased after 4 weeks, and spironolactone was titrated after weight weeks if no hyperkalemia or hypotension[5,6].

Medication	Maximum/Goal Dose
Lisinopril	20-40 mg once daily
Ramipril	10 mg once daily
Enalapril	10-20 mg twice daily
Losartan	50-150 mg once daily
Candesartan	32 mg once daily
Valsartan	160 mg twice daily
Spironolactone	25 mg once or twice daily
Eplerenone	50 mg once daily
Bisoprolol	10 mg once daily
Carvedilol	50 mg twice daily
Metoprolol succinate (ER)	200 mg once daily

Written by: Kathryn Maples (Augusta)
Edited by: Sarah Peake (Athens)
Pharm.D. Candidates, 2015
Approved by:
Jeff Langford, Pharm.D., BCPS

Continued on page 4.

Corrected Calcium Calculation

Reference on page 4.

Practice Problem:

You have been consulted about electrolyte management in a patient with decreased renal function. Their relevant laboratory values are as follows: calcium 6.4 mg/dL, phosphorous 4.6 mg/dL, and albumin 3.2 mg/dL. Should this patient receive calcium replacement?

See Answer on Page 4

Hypocalcemia is defined as a total calcium of <8.5 mg/dL and is common in patients with decreased renal function due to both impaired phosphate excretion and decreased production of vitamin D3. Replacement should be considered when values are <7.5 mg/dL or if the patient is symptomatic. Common symptoms include paresthesias, tetany, lethargy, confusion, seizures, and QT prolongation. "Total" calcium represents both ionized and protein bound (mainly albumin) forms with only the ionized form being physiologically active. In patients with low albumin levels (<4.0 mg/dl), total calcium values will be decreased without influencing the physiologically active ionized form. This creates a need to calculate a "corrected" value that should be between the normal calcium parameters of 8.5-10.2 mg/dL.

Before replacement, another factor to consider is the product of the phosphorous and calcium values. A Ca x P value of >55mg/dL places a patient at an increased risk of calcium phosphate precipitation in the cornea, lung, kidney, cardiac conduction system, and blood vessels. Typically, treatment of severe hypocalcemia is accomplished by intravenous formulations of calcium gluconate. Oral calcium supplements are reserved for less severe and asymptomatic patients. One to two grams of IV calcium gluconate given over 10-20 minutes is recommended to replace calcium values with a goal level of 8.0 mg/dl after replacement.

Written by: Rebecca Howell (Atlanta)
Edited by Maggie Guinta (Savannah)
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Approved by: Irine Attika, Pharm.D.

Financial Side of Pharmacy: What's Next?

The first step to financial independence is to create a strong foundation to build your financial future on. This foundation helps protect you financially from unexpected events. Included to the right are three tips to help you get started.

Written by: Peter Bourg, Registered Representative and Financial Advisor of Park Avenue Securities LLC (PAS)
Edited by: John Devine (Augusta) & Kristin Bradley (Savannah)
Pharm.D. Candidates 2015

1. Don't Fret Over Debt! Not all debt is created equal. While we prefer no debt, there is a difference between good debt and bad debt. Student Loans, Mortgages, Business Loans are all debt vehicles that allow you to gain leverage for a future opportunity. Have a plan to pay it off, keep your credit score high, and look to refinance if it makes sense. If your career as a pharmacist will be in retail, it might be more beneficial to refinance. If you are going to work as a hospital pharmacist, look into public service loan

2. Protect Yourself, Don't Wreck Yourself! The purpose of insurance to protect yourself from financially devastating events that are difficult to recover from: being sued, getting hurt and being unable to work, passing away unexpectedly, and the ups and downs of the market.

3. Only the Brave will Save! Everyone needs an emergency fund, whether you are an individual, a family or a business owner. Make sure this is set aside for emergencies – and is separate from your regular savings. Save because no one else will do it for you. It's a good idea to develop a relationship with a Financial Advisor about what your goals are so you can create a strategy that will fit your needs both now and in the future.

Upcoming Events

Friday, May 1st 7:30am - 3:00pm
A Review of Pharmacy 2015
College of Pharmacy
Pharmacy South 101

Friday, May 1st 3:00 pm
Class Meeting
College of Pharmacy
Pharmacy South 101

Friday, May 1st 6:30 pm
Senior Banquet
University of Georgia
Tate Grand Hall

Saturday, May 2nd, 2:00 pm
College of Pharmacy Graduation Ceremony
UGA Performing Arts Center,
Hugh Hodgson Hal

June 6th-10th
ASHP Summer Meeting
Denver, Colorado

Thursday, June 11th, 8:00 am
Georgia Board of Pharmacy Pharmacist Practical Examination
University of Georgia
College of Pharmacy

July 9th-12th
GPhA Convention
Amelia Island, Florida

July 17th-19th
GSHP Summer Meeting
Amelia Island, Florida

Written by: Kristin Horton, Atlanta
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Spring is Upon Us

Augusta, Georgia is nestled along the banks of the Savannah River and also happens to be the third largest and oldest city in Georgia. This city is also known for being rich in southern charm and providing a family-friendly environment.

Augusta is home for those of us who enjoy many outdoor activities like kayaking, canoeing, hiking, and running. If you feel like taking a stroll by the river, go no further than the Augusta Riverwalk, which is located directly on the beautiful Savannah River. It is also the famed home of the Masters Golf Tournament that occurs during the first week of April every year. It is an event-filled time when people from all over the United States come and enjoy not only the Masters, but also everything that Augusta has to offer.

There is never any worry about finding great restaurants because there is always something around the corner. Augusta is the home to many authentic restaurants that are sure to whet anyone's appetite. Local favorites include, Finch & Fifth, The Bee's Knees, and Frog Hollow Tavern. If there was any doubt that this city has nothing to offer, think again!

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PRACTICE PROBLEM ANSWER (SEE PAGE 2)

Answer:
Corrected Calcium = 7.04 mg/dL [0.8 (4-3.2) + 6.4 mg/dL = 7.04 mg/dL]
Calcium X Phosphorous = 7.04 mg/dL X 4.6 mg/dL = 32.38 mg^2/dL^2

Yes; this patient has severe hypocalcemia (< 7.5mg/dL), and the calcium X phosphorous is < 55 mg/dL. These findings indicated that it is safe to correct the patient's calcium without an elevated risk of calcification.

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A Pathophysiologic Approach, 7th ed. New York: McGraw-Hill, 2008: 780.

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