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AN AWARD-WINNING, STUDENT-OPERATED NEWSLETTER BY THE ST. JOHN'S UNIVERSITY COLLEGE OF PHARMACY AND HEALTH SCIENCES' RHO CHI BETA DELTA CHAPTER

Inside This Issue

When Technology and Medicine Unite

By: Tyler Valente, PharmD Candidate c/o 2016

A growing trend within our progressive society is the advancement of technology. Over the past few years, inventions that were mere fantasies just a decade or two ago have become a reality. Within the medical field, progress can be seen particularly in the development of medical devices. According to the Food and Drug Administration (FDA), medical devices "range from simple tongue depressors and bedpans to complex programmable pacemakers…" and can be defined in part as "an instrument, apparatus, implement, machine or…related article…which is…intended for use in the diagnosis…or in the cure, mitigation, treatment, or prevention of disease in man…"[1] One of the most remarkable technological developments amongst medical devices is the revolution of the glucometer.

In treating diabetes, the two most common ways of monitoring blood glucose is with a blood glucose meter or a continuous glucose monitor (CGM). Before the FDA approved MiniMed as the first CGM in 1999, one had no choice but to carry a testing kit and frequently prick their finger in order to draw blood into the glucometer. Although these are still very commonly used among diabetics, standard glucometers are inconvenient and present burdens to patients – inspiring the invention of CGMs.

A CGM is a device that is worn externally and continuously displays an estimate of blood glucose levels via a small, wire-like sensor inserted just under the skin.[2] When used in conjunction with a blood glucose meter, a CGM is beneficial because it requires less frequent finger pricks while providing an extensive data set of glucose levels over time. Just earlier this year, the FDA "allowed marketing of the first set of mobile medical apps that allow people with diabetes to automatically and securely share [medical data]."[2]

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Single Line Stories

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NEWS

Treatment Options for Restless Legs Syndrome

By: Svetlana Akbasheva, Staff Editor

Restless Legs Syndrome (RLS or Willis-Ekbom disease) is a condition that affects an estimated 2 to 3% of adults in the United States.[1] Patients with RLS experience a strong urge to move the legs, which is more prevalent at rest and is usually alleviated by physical movement. Symptoms commonly occur in the evening, although patients with more severe disease may experience daytime symptoms as well.[2] RLS has been seen in all age groups and it appears to affect women more than men.[1]

RLS can be primary or secondary in nature. Primary, or idiopathic, RLS has no known cause or comorbidities that may be contributing to the patient's symptoms. On the other hand, secondary RLS is linked to certain medical conditions, such as iron deficiency, pregnancy, or chronic renal failure.[3] Over half of RLS patients have a family history of the condition, which suggests a genetic basis in some cases. Although it is hypothesized that transmission may be autosomal dominant, the genetics are very complex and a clear mode of inheritance has not yet been established.[2] The definite pathology of RLS is unclear but is thought to involve the dopaminergic system as well as CNS iron levels.[3] Recent research has also shown the possibility of a link between RLS and vitamin D deficiency, and there was a case in which correcting vitamin B12 deficiency in an elderly patient led to complete relief from RLS symptoms.[3,4]

All patients experiencing RLS symptoms should be screened for iron deficiency, and those who exhibit low ferritin levels should be treated with oral or parenteral iron supplementation. Oral iron replacement consists of 50 to 60 mg of elemental iron (as a ferrous salt) twice daily, administered with vitamin C to increase absorption.[2] However, unpleasant gastrointestinal side effects of oral supplementation, including nausea, constipation, and abdominal pain, are a limitation of this route.[2] If parenteral iron replacement is chosen instead, the lower molecular weight formulation of iron dextran should be chosen to avoid hypersensitivity reactions.[5]

Up to 25% of pregnant women may experience symptoms of RLS, particularly in the third trimester, but these symptoms should abate soon after delivery.[6] Chronic renal failure patients on dialysis have also been shown to be more likely to develop RLS. The ideal way to treat RLS in these cases is through a kidney transplant; however, until this is feasible, patients are treated similarly to primary RLS patients.[2]

There are also certain medications that can cause or exacerbate RLS. The major class is the antidepressants, including tricyclic antidepressants, SSRIs, and SNRIs.[2] Physicians whose patients are experiencing RLS symptoms are encouraged to discontinue these medications and try bupropion instead, which has not been associated with RLS.[2] Other medications to avoid include dopamine antagonists such as metoclopramide, as the dopaminergic system is implicated in the pathology of RLS.[2] Antihistamines and antiemetics have also been shown to contribute to RLS and should be avoided.[5]

Patients presenting with RLS should be screened for the presence of secondary causes, including medication-induced RLS.[2] Patients with minimal intermittent symptoms may be controlled with non-pharmacologic therapy alone. Mild RLS may be alleviated with physical activity, since symptoms typically appear at rest.[5] There is limited evidence that avoiding alcohol, nicotine, and caffeine may help as well.[5]

For patients with moderate to severe primary RLS, the first line of treatment is usually a dopamine agonist. The three dopamine agonists that are currently FDA-approved for RLS are pramipexole, ropinirole, and rotigotine.[2] Factors to consider when choosing between pramipexole and ropinirole are differences in half-lives and metabolism. Pramipexole has a shorter duration of action, with a half-life of 6 hours compared to up to 12 hours for ropinirole. In addition, pramipexole is renally eliminated, while ropinirole undergoes hepatic metabolism.[5] Rotigotine is unique in that it comes as a 24-hour transdermal patch that delivers a constant plasma level of the

medication.[7] Thus, it is especially beneficial for patients who experience daytime or unpredictable RLS symptoms. As expected, the most common adverse effect with the patch is application-site reactions.[7] Adverse effects for with all of the dopaminergic agents are daytime drowsiness and behaviors associated with the loss of impulse control, such as gambling and hypersexuality.[2]

A report from the International Restless Legs Syndrome Study Group stated that there was evidence for the efficacy of the dopamine agonists, lasting for six months, in RLS.[8] In addition, pramipexole and ropinirole are probably effective for up to one year, while rotigotine may be efficacious for up to five years.[8] However, a major problem with the dopamine agonists is the development of augmentation with chronic use. Augmentation is a phenomenon that was first observed with the use of levodopa for Parkinson's disease and which has since become associated with dopamine agonists as a class. After long-term use of these agents, not only do the medications lose efficacy, but patients' symptoms can actually become more severe than they were prior to dopamine agonist therapy.[7] To avoid or at least delay this phenomenon, dopamine agonists should be used at the lowest effective dose.[7]

Another class of medications that is considered first-line therapy for RLS is the alpha-2-delta ligands, which include gabapentin, gabapentin enacarbil, and pregabalin. Of the three, only gabapentin enacarbil (Horizant®) is FDA-approved for RLS.[2] A disadvantage of gabapentin is its unpredictable kinetics; the active drug has saturable absorption and levels of the drug transporter are inconsistent among the population, which causes the same dose to exhibit different plasma levels among individuals.[1] To remedy this issue, the prodrug gabapentin enacarbil was developed, which is well absorbed and produces consistent plasma gabapentin levels. It is important to note that due to these pharmacokinetic differences, gabapentin and gabapentin enacarbil are not interchangeable, as the same dose of each may not produce equivalent plasma levels.[1]

The increased popularity of pregabalin for RLS may be due to its efficacy in improving sleep in RLS patients. A major complaint among RLS patients is the inability to sleep well at night, which can impinge on other aspects of their lives as well.[9] A double-blinded, randomized crossover study comparing the effects of pregabalin versus pramipexole on sleep length and quality in RLS patients found that although the occurrence of periodic limb movements (PLM) was reduced with pramipexole, this did not necessarily translate to improved sleep quality, as patients experienced greater subjective total sleep time and fewer awakenings with pregabalin than pramipexole.[9] Pramipexole and pregabalin also differ in their side effect profile, which can influence treatment decisions. Pramipexole is associated with more headache, nausea, and vomiting, while pregabalin may cause somnolence, weight gain, and suicidal ideation.[10]

When one agent is not effective, a combination of a dopaminergic agent and an alpha-2-delta ligand may be used.[5] Additional medications are also an option for patients refractive to the first-line therapies or who need add-on agents for their symptoms. Opioid compounds can be used as needed for breakthrough symptoms throughout the day; however, these medications are not routinely used due to the risk of addiction.[2,5] Clonazepam may also be useful for patients who have trouble sleeping.[2] However, its long half-life may lead to next-day sedation; shorter-acting zolpidem or eszopiclone may be a better option.[5]

It is important to remember that Restless Legs Syndrome is a condition that has a profound impact on patients' quality of life. When the 36-Item Short Form health survey (SF-36) was used to assess the subjective impact of RLS, these patients' scores were significantly worse than the general population's in the assessment of general health, physical functioning, and bodily pain; mental health scores were also lower.[6] Despite the currently available therapies, not all patients experience relief and there is still ongoing research into the best treatment options for these patients. Newer therapies may be available in the coming years as the underlying cause of RLS is better understood.

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When Technology and Medicine Unite

By: Tyler Valente, PharmD Candidate c/o 2016

The Dexcom G4® Platinum Receiver with *Share*™ is a CGM with Bluetooth capabilities, allowing caretakers to view a diabetic patient's blood glucose levels in real-time via an app called Dexcom Follow. This technology is particularly useful for young children and elderly patients who need assistance in the management their diabetes. With the ability to access a patient's glucose levels via the Dexcom Follow app, caretakers can play a larger role in monitoring the patient's levels, leading to decreased hypoglycemic events and increased medication adherence.[3] A possible downside to this technology is that caretakers only have access to levels that the patient chooses to send to the app. Also, although the caretaker can *see* this information, there is nothing that can be *done* remotely. The caretaker still has to contact the patient to tell them to either consume something with sugar or inject a rapid acting insulin dose, depending on the levels shown on the app.

Dexcom G4® Platinum Receiver with *Share*™ is a monumental first step into the world of medical apps. However in today's society, one can expect it to be just that, a *step*. Dexcom's next product, which will be submitted for FDA approval in Spring 2015, promises to automatically transmit all glucose data directly from the sensor worn on the body to the iPhone app.

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Illegal Sale of Drugs Online

By: Benedette Cuffari, BS Toxicology Candidate, '16

"*Initial Prescription Free*," "*FDA Approved*," "*Save Thousands!*" and "*Our Generic Drugs are Identical to Those Sold in the U.S.*," are some of the many advertising tools that thousands of websites around the world have been using to lure customers into buying illegal pharmaceuticals online.

The U.S. Food and Drug Administration, along with other federal and international agencies, took action against these illegal websites during the week of May 13th-20th 2014. This week marked the seventh annual International Internet Week of Action (IIWA), also known as Operation Pangea VII, which is a program sponsored by Interpol. Launched in 2008, Operation Pangea is a weeklong initiative that targets illegal websites selling counterfeit and illicit medicines, in order to internationally protect consumers from potentially harmful products.[1]

In 2014 alone, Operation Pangea detained 19,618 packages in Australia, the United Kingdom, New Zealand, and Canada, all of which contained unapproved or suspected counterfeit drugs from countries such as India, Taiwan, Mexico, Laos, and Malaysia.[2] The value of the seized illegal products was estimated at over $32 million, with medicines including weight loss pills, cancer medication, erectile dysfunction pills, cough and cold medication, antimalarial drugs, cholesterol medication, and nutritional products.[3] In general, some of the most common drugs that are being sold illegally online include insulin, estrogen, bimatoprost, human chorionic gonadotropin, tramadol, tadalafil, and sildenafil citrate. [2]

The main concern with illegal websites selling these counterfeit prescriptions is that consumers have no way of knowing whether they are receiving a counterfeit, or even whether the correct active agent is present within the drug product and given in the right dosages. There is a threat to the security of the consumer as well, as buying from these illegal sites also introduces risks of credit card fraud, identity theft, or computer viruses. Furthermore, consumers are left with little or no legal recourse if they experience an adverse reaction to these unregulated medications, or in cases where no apparent therapeutic benefit was experienced. [2]

Despite the growing awareness of existing websites selling illegal pharmaceutics, consumers still fall under the trap in the hope of buying cheap prescription medicines. To counteract these measures, the FDA works to warn consumers of the numerous ploys websites use to entice customers, and has also provided a list of banned online pharmacies on its website. The FDA offers additional information and guidance on how to recognize safe online websites through a program called BeSafeRx: Know Your Online Pharmacy.[2] This campaign is committed to raising national awareness of the dangers of buying prescription drugs from illegal websites, and provides numerous resources to help consumers decipher safe websites from those that are fraudulent. Some major warning signs to look for when considering online pharmacies include sites that allow you to buy drugs without a prescription from your doctor, discounts or cheap prices that seem too good to be true, and websites that are located or licensed outside of the United States. [3]

The continuation of programs such as the International Week of Action provide direct and immediate resolutions in order to preserve the health and sustainability of the public. In order to enhance the results of these efforts by the FDA, it is also important for healthcare providers to communicate with their patients about the reality of these online pharmaceutical scams.

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CLINICAL

A Link Between Genetics and the Treatment Prognosis of Depression

By: Jacqueline Meaney, PharmD [PGY-1 Resident at Gainesville VAMC in Florida]

Major depressive disorder (MDD) is a psychiatric disorder that is characterized by feelings of worthlessness, helplessness, and an inability to experience pleasure in activities that were enjoyable in the past.[1] Major depressive disorder is one of the most prevalent mental disorders among adults in the United States, with a lifetime prevalence of 16.2%. Of the people affected by major depressive disorder, 38% experience severe depression, and 12.9% experience very severe depression.[1-3] MDD has a significant impact on all aspects of a patient's life, including sleeping habits, eating habits, personal relationships, ability to concentrate, and general well-being.[4] In addition, MDD has been associated with increased morbidity and has been shown to complicate recovery from myocardial infarctions and other serious illnesses. MDD has a high rate of recurrence and can lead to suicide if left untreated.[5,6]

Current treatment guidelines for MDD recommend starting with antidepressants as monotherapy, typically with a selective serotonin reuptake inhibitor (SSRI) or serotonin-norepinephrine reuptake inhibitor (SNRI), depending on patient parameters.[7-9] However, studies have shown that some patients require supplementation with l-methylfolate in order to benefit from either SSRIs or SNRIs.[10,11] In addition, other studies have shown that patients treated with l-methylfolate in addition to an SSRI or SNRI had a more significant reduction in measures of depression than did patients receiving monotherapy with an SSRI or SNRI.[5,11]

L-methylfolate (levomefolic acid) is the active form of folic acid (vitamin B9). Folic acid is converted to l-methylfolate by the enzyme methylenetetrahydrofolate reductase (MTHFR), which is encoded by the *MTHFR* gene. Polymorphisms in the *MTHFR* gene lead to a reduced ability to convert dietary folic acid to l-methylfolate, which is needed by the body in order to regulate homocysteine levels.[12] Specifically, l-methylfolate allows for the conversion of homocysteine to methionine. Elevated concentrations of homocysteine in the blood is known as hyperhomocysteinemia, and has been associated with increased risk for depression.[13] People with *MTHFR* polymorphisms may not be able to benefit from regular folic acid supplementation and may require supplementation with l-methylfolate due to their inability to convert sufficient amounts folic acid to l-methylfolate in the body.[14] Folate status has been associated with the efficacy of selective serotonin reuptake inhibitors (SSRIs) in treating major depressive disorder, and studies have shown that patients often require supplementation with l-methylfolate in order to see any benefit from SSRIs[10] and SNRIs.[5]

At gene position 677, the presence of a cytosine leads to the transcription and production of an alanine, resulting in the normal form of *MTHFR*. The presence of the 677T allele leads to the substitution of alanine for valine, which results in a thermolabile form of MTHFR that has reduced levels of activity.[15,16] People with the 677CC genotype have the normal genotype, and people with the 677TT genotype are homozygous for the thermolabile mutant form of MTHFR. People with the 677TT genotype tend to have mild MTHFR deficiency, which predisposes them to hyperhomocysteinemia due to a lack of l-methylfolate to be used to convert homocysteine to methionine.[17] Multiple studies have linked the 677TT genotype to high levels of homocysteine in the blood. High levels of homocysteine may increase the risk of depression if it is left untreated.[14, 15, 18-21]

The prevalence of the 677TT genotype is estimated at 10% of Caucasians and Asians. These people have 70% lower activity of MTHFR, resulting in re-

duced amounts of folic acid being converted to l-methylfolate.[12] For this reason, individuals with the 677TT genotype are more likely to be affected by low folate intake.[17] It is estimated that 40% of the population has the 677CT heterozygous genotype for *MTHFR*, and may also have a reduced ability to convert folic acid to its active form. Therefore, people with the 677TT and 677CT genotypes may benefit from supplementation with l-methylfolate (marketed as levomefolate calcium under the brand name Deplin®), because they may not be able to fully benefit from supplementation of folic acid.[18]

A second MTHFR polymorphism can be found at position 1298 on the *MTHFR* gene, where the presence of an adenine results in the normal allele, and the presence of a cytosine results in the mutant allele. People with the 1298AA genotype have the normal genotype and people with 1298CC are homozygous for the mutant allele. MTHFR enzymes encoded by 1298A have been shown to have the same functionality as the MTHFR enzymes encoded by 1298C. However, it is suggested that the presence of the 1298CC genotype can magnify the effects of the 677CT (heterozygous) genotype.[15, 18, 22-24]

Overall, multiple studies have shown that MTHFR genotype abnormalities can be associated with MDD prognosis. This information could be used to help clinicians identify patients at risk of a poor prognosis, who may require early interventions.[15] In addition, multiple studies have proven that l-methylfolate may be effective for the adjunctive treatment of MDD when combined with an SSRI or SNRI. These studies report little to no adverse effects from l-methylfolate, with the greatest barrier to patient adherence being an inability to afford the medication.[2, 3] It is important to be aware of the link between genetics and depression, because some cases of depression may be caused by a treatable deficiency.

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CLINICAL

OPINIONS

Pharmaceutical Fellowship Tips

By: Sean Caltabiano, Ramya Mathew & Praneeta Nagraj

Timeline Overview

5th Year: Start thinking about recommendations

- Your preceptors on rotations and faculty you have worked with are great people to ask for letters of recommendation

July–October (or sooner): Research

- Start thinking about areas that you would be interested in pursuing (e.g., Regulatory Affairs, Medical Affairs, Clinical Development, Marketing, Health Economics Outcomes Research, Pharmacovigilance, etc.)

September: Register early for Personal Placement Services (PPS) to save money

October: PPS opens

- Start reaching out to your recommenders for your recommendation letters so they will be ready to submit by the 2nd week of December

November: Fellowship Information Day (FIND

- Takes place at Rutgers University

December: ASHP Midyear Conference (2015 New Orleans!)

January: On-site interviews

Research

- Start thinking if a fellowship/job in pharmaceutical industry is right for you. Try to get a rotation at an industry site if possible. If you already know which area you are interested in, try to get a rotation in that area. If you don't know which area you are interested in, try to get any experience you can. Depending on the rotation site you get, definitely try to set up one-on-one meetings with people (PharmD's if you can) in different departments. It is good to just talk with them and ask how they got to the position they currently hold (school, fellowships if any, Medical Science Liaison (MSL) position, etc.).
- Get involved in as many projects that your preceptor allows you to. The more experience you get at these rotations, the more you will be able to talk about during your interviews and the better you will look as a candidate.
- If possible, consider doing a summer internship at an industry site. Many big pharma companies take summer interns – It is worth a shot to even ask if you can set up a shadow day even just to gain a better understanding.
- The next best option is to conduct some Google searches to find out about positions available and what their overall job is responsible for.
- Go through the brochures of each company that you're interested in – it gives you a great description of the responsibilities of each fellow and the company in general.
- There are many programs that offer fellowships – some are within industry, some are half industry and half with a university/hospital, and there are others that are Association Management. Look into all of your options and then narrow it down from there.
- While on any rotations, start to think about who you would like to write a letter of recommendation for you. Most programs require three, but it is a good idea to ask four people to ensure you will have at least three when applications need to be submitted. The last day of the rotation is a good opportunity to ask your preceptor if they would consider writing a letter of recommendation for you in the future. If you had the rotation months before you need the recommendation letter, try to maintain some contact with the preceptor.

Personal Placement Services

- You must register for PPS and pay a fee ($75 in 2014). If you register before PPS opens it is cheaper. Once it opens, the price more than doubles!
- Definitely register early and be ready the day it opens. Interviews are usually on a first come first serve basis, so to ensure you interview with the company you like for the position you want to pursue, act fast to submit that request.
- To complete your profile you will need to upload a CV and you have the option to upload a picture, and compose a career objective.
- Inside PPS you are able to search fellowship positions that have been posted across the country
- Through this service, students schedule interviews taking place at the Midyear Conference. To schedule an interview, you submit a request to the fellowship program.
- St. John's and Rutgers Fellowships will be posted here as well, but this is only to provide you information on the fellowships they are offering. You have to email the contact for the St. John's Fellowship Program and set up an interview with them.

- You can only schedule interviews for Rutgers programs in person at Midyear. Other fellowship programs, for the most part, will allow you to set up through PPS and email – take advantage of this opportunity!

Fellowship Information Day (FIND) – *Specific to the Rutgers Fellowship Program*

- This takes place at Rutgers about a month before Midyear. Rutgers has the largest fellowship program in the country with 17 partner companies. This event is free and it usually starts in the afternoon through the evening. They give a presentation on the Rutgers program and then some of the Rutgers Fellows give short presentations on the various positions available.
- After the presentations, there is a two-hour meet and greet with the companies. Speak with the companies you are interested in and ask them any and all questions. Try to make that first impression count before you hopefully have a chance to meet with the company at the Midyear Conference. Leaving a lasting impression helps with interviews later on. Be sure to also follow up with any Fellows you meet and programs you find interesting.

Midyear Conference

- **Things to bring to Midyear**: CVs, thank you cards, business cards (optional), padfolio (or professional folder of some sort), suits, comfortable (but professional) shoes, water bottle, and snacks (you are busy and don't always have time for a decent meal)!
- At the conference, PPS (a huge room in the convention center) opens for interviews on Sunday and runs until Tuesday. If you are interested in any Rutgers programs, people start getting in line VERY EARLY Saturday morning. You cannot schedule any interviews with the Rutgers programs until Saturday morning.
- I (Sean) flew in Friday evening. Rutgers opened officially at 12 pm Saturday morning, but the line started forming very early (4 am). I arrived at 7 am and was the 220th person in line. I was still able to sign up for all of the interviews I wanted, however some of my friends who arrived at 8 am did not secure interviews with all of the companies they wanted. Do not rely on these times; use this experience to make your own plans.
- Rutgers has some interviews beginning on Saturday from about 2-5 pm, which continue Sunday – Tuesday, 8-5pm. When you are scheduling your interviews, it may be beneficial to have an interview with a company you are not as interested in just to get the pre-interview jitters out of your system
- **Personal Business Cards-** It can be good to give business cards out at FIND or Networking events, but when you are interviewing at Midyear, the interviewee is usually the one to ask for the business card because the interviewer already has your CV with every contact you have.
- **Bring snacks and water**- Midyear is hectic and your days will consist of interviewing and prepping for those interviews. Many people don't find the time to eat an actual meal during the day so it is highly advised to bring snacks so you can last through the day without crashing. Granola bars, nuts, or anything that's quick and easy. Also make sure to drink water since you will be doing a lot of talking throughout the day.

Interviews

- Make sure you are organized with your schedule. Keep track of the interviews you have and arrive at least 15 minutes before you are scheduled. It is in your best interest not to schedule interviews back to back because it can take a little while to get from one booth to another. Keep this in mind when scheduling interviews and leave at least 30 minutes between each interview.
- You want to make sure you have a CV to give each of your interviewers for each round. People told me to bring 50 CV's printed on (32 lb.) resume paper.
- The interviews are generally 30 minutes with 1 or 2 interviewers. For Rutgers and many other programs, there are 2-3 rounds of Interviewing before potentially getting a reception invite.
- Before interviewing, it's a good idea to read through the brochure for the specific fellowship you are applying for.
- Get familiar with the current fellows and preceptors for the programs.

Tips on preparing for the interview:

- Before I interviewed with the companies, I created an index card to review before the interview. On the card, I included the preceptor/fellows, the mission of the company, and some of their current products or main therapeutic areas the work with.

BACK TO COVER

- Lastly, look on the website to research the company pipeline or trials they are conducting. Know some of the key points so you are prepared to tell them what you know about their company or why you chose to apply to their specific fellowship if they ask. If they don't ask you to tell them about their company, when they ask if you have any questions at the end, you can ask them a specific question about their pipeline or any trials to show that you are interested and you have done your research.
- Be sure to *always* ask questions at the end and make sure they are relevant as well. For example, if a Fellow is interviewing you, you may ask about a project that has been most exciting for them to work on or one they are proud to have worked on so they can share what they have done and you have an idea of what you can be a part of.
- **Thank you notes**- At the end of the interview, you should ask for your interview's business card to write a thank you note. You can either drop the thank you note off at the table later in the day or the next day. Use the business card to make sure you spell your interviewer's name correctly. I like to write thank you notes generally, so I purchased some nice correspondence note cards (Original Crown Mill) to give out. I think it is just a good habit to get into.
- *A note to all:* The interview process can be stressful, but try to enjoy yourself. It is important to understand that interviews are a two-way process. You are also seeing if the program you are interviewing for will be right for you too – think about that as you ask your questions too.

Interview Questions

- The interviews generally ask behavioral questions to gain a sense of your past experiences and what you will be able to offer to the company.
- Read up on the STAR method (Situation, Task, Action, and Result). This basically provides a way to answer questions in an organized way.
- I made a 1 page interview review sheet to glance over right before my interviews which included:
- Strengths; weaknesses; major characteristics about me; what makes you different/unique
- Key stories/answers to questions an interviewer might ask including:
- A time you had worked on a project and it ended up going in another direction (I was asked this during several interviews)
- Something you failed at
- A time you had to make a split second decision
- An ethical dilemma you faced
- A time you had a challenging boss/advisor
- A time you had a group project and the role you played
- A time you had to represent a group of people's opinion
- A conflict with a coworker
- A time you had to conform to a policy you didn't want to
- A problem you had and how you solved it
- A difficult decision you had to make
- A process you had to improve

- Also be prepared to answer questions such as, "Why this specific program/role? Why do you want to pursue a career in the Pharmaceutical Industry?"
- You can look up residency/fellowship/behavioral questions to see a broader list.
- If you are asked a question and you don't know the answer right away, you could ask them to repeat it or rephrase it. Before answering, breathe, gather your thoughts, and then answer.

- Know your CV well! You are the expert on it! You should be prepared to talk about anything that is on your CV. This includes presentations, rotation experiences, publications, research, journal club presentations listed, etc. Do not be afraid to include interesting skills that you have on your CV whether it is computer programming or martial arts; these are things that set you apart. Just be sure to organize it properly. Some people bring copies of one or two of their presentations and/or publications to their interviews.

- **Be yourself**- You don't want to sound like a robot that has practiced and memorized their answers to certain types of questions. Try to make the interview more like an easy-flowing conversation. It's definitely easier said than done, but try not to let your nerves get to you and show them your personality while remaining professional. This goes a long way! Generally the people you interview with are the ones who you will be working with throughout the Fellowship.

Receptions

- After 2-3 rounds of interviews, top candidates will be invited to receptions. Some companies (not all) will have their own receptions, while others will invite their candidates to the general Rutgers reception on Tuesday night (for Rutgers Fellowships only). These receptions are **INVITE ONLY** and are the best way to gauge how you're doing.
- The general consensus is that if a company does NOT give you an invitation to their reception (if they have one), then you are probably not one of their top candidates; apply at your own discretion.

Navigating the Receptions

- Kudos for getting this far! The companies are interested in you and this is your chance to show them who you are and a little about your personality.
- Attire: Cocktail, Business Casual
- Men – suits; Women – cocktail dress, suit dress
- Before the receptions, try to get something small to eat so you are at ease at the reception.
- There will be food and drinks at the receptions. This is an informal networking setting. It is okay to have an alcoholic drink at the reception, but it would not be advisable to go back for more as you will have to continue speaking to multiple people. Do not feel pressured to have alcohol – water is acceptable.
- Rule of thumb: Keep one hand free at all times so that you can shake hands with the people you meet.

Company sponsored reception: (Monday before Rutgers reception – typically)

- There is a possibility you will have more than just one reception invite, and if you do that's great! Be sure to manage your time wisely based on the time of each reception. If two programs are at the same time, then go to the one that interests you more first and then the other second if you still have time. If you get an invite and do not make an appearance, it may show the company you are not interested.
- When at company-specific receptions, do your best to meet and speak with the current Fellows, Preceptors and Program Directors.

Rutgers Reception (about 7:30-10pm)

- This is the big one! Every company and program at Rutgers will be represented here. After a short presentation, you will be on your own to navigate the room and meet with all the programs you are interested in applying to.
- At this point, you should have an idea of what companies are interested in you and also which companies you are definitely interested in applying to. Be sure to make time to meet with all of the programs you will be applying for. It can only help you at this point.
- If you are unsure which company to meet with first, try starting with a company you feel you did not get to spend as much time with at a company sponsored reception (if they had one).
- In general, navigate the room and meet as many people associated with the partner program/ company (companies) you are interested in. This is your last opportunity to leave a lasting impression of yourself before Midyear ends.
- Enjoy the event, and just like you did with the interviews – be yourself!

On-Site Interviews

- If you have made it to this stage - congratulations! After Midyear, starting as early as the following week, companies will start reaching out to candidates to set up on-site interviews after application material has been submitted.
- In order to get an on-site interview for Rutgers, you MUST have your CV, letter of intent, and at least ONE letter of recommendation uploaded to the Rutgers Portal.
- As far as on-site interviews, every company does it a little different, but all will most likely include a presentation component. From my experience, I have had presentation topics assigned by the company and I also had one that told me to choose a topic of my choice, as long as it's relevant to the position. The presentations are a way to gauge how you are as a presenter (style, voice, eye contact, etc.) and will also include a Q&A after. This is the fun part of the interview, and a way for you to seal the deal with your program of choice and meet your potential future colleagues and Preceptors.
- After your on-site interview, be sure to email a follow up thank you to anyone you met during your on-site interview, the Preceptor, and current Fellows. Following up and saying thank you is good etiquette to follow and also reaffirms your interest to the partner company.

PUZZLES

Matching Column:

LOOK ALIKE SOUND ALIKE

By: Sang Hyo Kim
Section Editor

Can **YOU** match the fact with the correct medication?

1. Nonselective beta-adrenergic receptor blocking agent possessing no other ANS activity	A. Inderal
2. Member of the dihydropyridine class of calcium channel antagonists	B. Adderall
3. For angina pectoris	C. Indinavir
4. Combination of amphetamine and dextroamphetamine	D. Denavir
5. Given as an infusion for treating auto-immune diseases such as ankylosing spon-dylitis and ulcerative colitis	E. Infliximab
6. To prevent infections that are proven or strongly suspected to be caused by susceptible bacteria	F. Rituximab
7. Morphine sulfate	G. Invanz
8. For Non-Hodgkin's Lymphoma (NHL)	H. Avinza
9. Crixivan®	I. Isordil
10. Used for cold sores	J. Plendil

Answers

on next page

Lexi-Comp Online®, Lexi-Drugs Online®, Hudson, Ohio: Lexi-Comp, Inc.; May 31, 2015.

How Did You Do???

Answers to Look Alike and Sound Alike

1) A 2) J 3) I 4) B 5) E 6) G 7) H 8) F 9) C 10) D

Quote of Month

By: Nicollette Pacheco, Staff Editor [Graphics-focused]

Do you enjoy our puzzle?

Send us a suggestion for a brainteaser at

RhoChiPost@gmail.com

RHO CHI POST: TEAM MEMBERS

EDITORS

@ Tasnima Nabi ***(6th Year, STJ; Editor-in-Chief)***
Writing has always been my greatest outlet for experience and knowledge, through which I hope to keep you engaged and informed. It is imperative to keep up with our changing profession and community, and I look forward to bringing pertinent information to the newsletter.

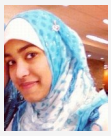
@ Katharine Cimmino ***(PharmD; Graduate Copy Editor [Content-Focused])***
I have always been an avid reader and writer. As a member of the Rho Chi Post I am able to merge my passions with the professionalism that comes with aspiring to be a healthcare provider. I am eager to be a part of a publication that promotes my interests and vocation.

@ Bharat Kirthivasan ***(PhD; Graduate Copy Editor [Content-Focused])***
I received my doctorate in Industrial Pharmacy researching nanoparticles for delivery to the brain. The only thing I enjoy more than reading a well-written piece of work is writing it. I am glad to work for the Rho Chi Post, and I encourage others to do the same.

@ Hayeon Na ***(PharmD; Graduate Copy Editor [Content-Focused])***
Hello! My name is Hayeon Na. I am one of the Graduate Copy Editors for the Rho Chi Post. I hope the information I present will be helpful, or at least interesting. If you have any comments regarding my contribution, feel free to contact me at any time!

@ Melissa Roy ***(PharmD; Graduate Copy Editor [Graphics-Focused])***
We as future healthcare professionals owe it to our patients and ourselves to be aware and current on the events affecting our profession. The Rho Chi Post is our way to learn new things and stay in touch with the pharmacy world, on- and off-campus. Feel free to reach out to me with suggestions and comments.

@ Davidta Brown ***(5th Year, STJ; Copy Editor [Content-Focused])***
My two great loves are innovative science and quality writing, and the Rho Chi Post is an insightful combination of both. As an editor, I look forward to bringing relevant information and fresh perspectives to the student and faculty of St. John's University, as well as to making the Rho Chi Post a newsletter that offers something new to every reader.



@ Fatema Elias ***(6th Year, STJ; Copy Editor [Content-Focused])***
I am honored to be a part of the Rho Chi Post team. In this age of technology and the continuously changing healthcare profession, I hope to engage like-minded students and professionals. Writing is something that I hold dear to my heart and I hope with this newsletter we can all stay well informed, interested, and educated.

@ Tamara Yunusova ***(5th Year, STJ; Section Editor: Clinical)***
My name is Tamara Yunusova, and I am a 5th year Pharm D candidate at St. John's University. I enjoy articulating information in a captivating and insightful way. I hope to make this publication more informative, student-friendly, and innovative.

@ Sang Hyo Kim ***(4th Year, STJ; Section Editor: Puzzles)***
Advancements of technology and developments of new medicines, prolonging the lifespan and improving the quality of life, have increased the geriatric population. In years to come, pharmaceutical industries and healthcare systems will persistently work to find solutions to changing demands and new problems of the society. Through the Rho Chi Post, I wish to learn, educate, and prepare myself and others for the future.

RHO CHI POST: TEAM MEMBERS

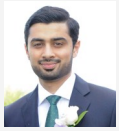
@ Azia Tariq ***(5th Year, STJ; Section Editor: News)***
The Rho Chi Post is a prominent and highly esteemed resource for pharmacy students and professionals. I am privileged to be a part of the team and hope to contribute informative and engaging pieces to the newsletter.

@ Nicollette Pacheco ***(5th Year, STJ; Staff Editor [Graphics-Focused])***
As a new member of the Rho Chi Post team, I have a vast appreciation of what it means to be a future pharmacist in the rapidly evolving world of healthcare. I am looking forward to being on the team as a graphics-focused staff editor, and I hope to bring my passion for science and creativity to the Rho Chi Post.

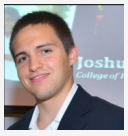
@ Svetlana Akbasheva ***(6th Year, STJ; Staff Editor [Content-Focused])***
I am very excited and honored to be part of the Rho Chi Post! In a profession that is constantly evolving with new developments, it is so important to remain informed and current. The Rho Chi Post helps do just that, and I look forward to contributing to this unique publication.

@ Andrew Leong ***(6th Year, STJ; Staff Writer)***
Students have to do more than what is required of us in classes to truly learn about our profession. That's why I joined the Rho Chi Post. This publication represents a channel by which our team members, faculty, and readership can share information - something I believe is important in this ever-changing pharmacy world.

@ Sylva Ohanian ***(5th Year, STJ; Staff Writer)***
The Rho Chi Post is a refreshing outlook on our profession. I am thrilled and grateful to be able to work with the other members in continuing its success, and hopefully to bring greater attention to it, which it deserves.



@ Fawad Piracha ***(6th Year, STJ; Finance and Outreach Manager)***
I am delighted to join the editorial team. I have the firm intention of broadening readership and facilitating growth of the Rho Chi Post.



@ Joshua Bliss ***(6th Year, STJ; Social Media Manager)***
By providing student-organized, reliable healthcare information, the Rho Chi Post helps us all in fulfilling our education both in and out of the classroom. Education is the tool we use to set paths for our futures, and every chance to expand our education is a chance at building a better future. I am honored to be a part of the Rho Chi Post & look forward to the future!

@ *You!*
We are always looking for creative and motivated students to join our team!
If you are interested in becoming a Rho Chi Post editorial team member, please visit:
http://rhochistj.org/RhoChiPost/Application

EDITORS

RHO CHI

The Rho Chi Society encourages and recognizes excellence in intellectual achievement and advocates critical inquiry in all aspects of Pharmacy.

The Society further encourages high standards of conduct and character and fosters fellowship among its members.

The Society seeks universal recognition of its members as lifelong intellectual leaders in Pharmacy, and as a community of scholars, to instill the desire to pursue intellectual excellence and critical inquiry to advance the profession.

THE RHO CHI POST

MISSION

The Rho Chi Post is an award-winning, monthly, electronic, student-operated, faculty-approved publication that aims to promote the pharmacy profession through creativity and effective communication. Our publication is a profound platform for integrating ideas, opinions, and innovations from students, faculty, and administrators.

VISION

The Rho Chi Post aims to become the most exciting and creative student-operated newsletter within St. John's University College of Pharmacy and Health Sciences. Our newsletter continues to be known for its relatable and useful content. Our editorial team continues to be known for its excellence and professionalism. The Rho Chi Post essentially sets the stage for the future of student-operated publications in pharmacy.

VALUES

Opportunity, Teamwork, Respect, Excellence

GOALS

1. To provide the highest quality student-operated newsletter with accurate information
2. To maintain a healthy, respectful, challenging, and rewarding environment for student editors
3. To cultivate sound relationships with other organizations and individuals who are like-minded and involved in like pursuits
4. To have a strong, positive impact on fellow students, faculty, and administrators
5. To contribute ideas and innovations to the Pharmacy profession

CURRENT EXECUTIVE BOARD

Michael, Lina, Julia, Jessica, Davidta, Zachary at the 2015 Induction Ceremony

President: Michael Bosco
Vice President: Lina Lin
Secretary: Jessica Langton
Treasurer: Julia Kamuda
Historian: Davidta Brown
Media Relations Coordinator: Zachary Piracha
Chapter Advisor: S. William Zito, PhD

UPCOMING EVENTS

June 29-July 2: APHA Childhood Diabetes Conference
San Diego, CA