RHO PX CHI POST

VOLUME 1, ISSUE 6

MARCH 1ST 2012

RHOCHISTJ.ORG

A student-operated newsletter by the St. John's University College of Pharmacy and Allied Health Professions Beta Delta chapter

SINGLE-LINE STORIES

- ASHP National Ranking System opened on 2/20/12 and will close on 3/9/2012 at 11:59 PM EST
- Rho Chi and APhA-ASP team up to support Blood Drives
- ASHP Match results to be released on 3/21/12
- SGI Professor of the Year Nominations due 3/21/12
- Next year's Co-Editors in Chief announced: Ebey Soman and Neal Shah

FACULTY SPOTLIGHT: DR. TRAN BY: SHANNON TELLIER

Dr. Tran is an assistant clinical professor at St. John's University College of Pharmacy and Allied Health Professions, and a clinical pharmacy manager in Internal Medicine at NewYork-Presbyterian: Columbia University Medical Center. She received her BS in Public Health and Doctor of Pharmacy from the University of North Carolina at Chapel Hill and attended a pharmacy practice residency at the University of Illinois Chicago. Dr. Tran worked as a clinical pharmacist in cardiology and critical care at NorthShore University Health Systems in affiliation with Northwestern University and University of Chicago medical schools. After her time in Chicago, she accepted a position as a tenure-track faculty member at St. John's University College of Pharmacy and Allied Health Professions. Dr. Tran is greatly involved with the New York City Society of Health-Systems Pharmacists (NYCSHP).

In January, I had my first Advanced Pharmacy Practice Experience (APPE) rotation with Dr. Tran, and was able to interview her about her journey in pharmacy.

Q: What were the most challenging aspects and best memories during your residency?

A: UIC was one of the few residency programs that offered overnight hospital on-call that alternated among 12 residents to cover any/all pharmacy related issues. These issues included pediatric pharmacokinetics for vancomycin troughs insensitively drawn at 2am in the morning, preventative antiviral regimens for accidental employee sticks, and adult and pediatric cardiac arrest – examples that serve as an aperitif to the abundant variety of cases we dealt with.

The number of hours spent at the hospital was excruciatingly tremendous. I was on overnight call every 4th night in the beginning and, at the very best, every 8th night. Although we were provided, as the medical residents proclaimed, with the best on-call room according to size, location,

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and amenities (a 15-inch television), it was disturbing to have realized a couple of things. I had spent 365 days in Chicago and could not describe the view from the John Hancock tower, the historical facts described on the Architecture boat tour of lake Michigan, how soft the sand on North Avenue Beach is, or the taste of a hotdog from Wrigley Field with any personal or firsthand experience. Those absences were a bit of a challenge.

On-call involved arriving to the hospital at 8am in the morning and staying until noon the next day; most of us broke the rules, and went to our office well into the evening to complete the rest of our projects. We took advantage of the loophole that 30 hours only pertained to direct patient care. I spent nearly 40 out of 48 hours within the confines of the same hospital walls, among the same 12 co-residents, in the same scrubs nonetheless.

However, those rough, arduous times are also the most memorable and ingratiating. Delirium from minimal sleep can incite understanding of the significance in the value of comradery, trust among residents, and hilarity of difficult situations as a precautionary net to maintain normalcy with the demanding pressures and stresses of a residency. I would never trade the aforementioned 365 days of my life – it is times of ultimate obstacles when you realize your capabilities and appreciate the fact that you can handle the unknown, which are enabling factors that guide you to seek the most in your career and life.

Q: What advice would you give to current students about preparing and choosing a residency program?

A: Do not let location be a limiting factor in your residency selections. Diversifying your regional experience exposes you to the realities of how pharmacy is practiced throughout the nation, broadens your professional network, and offers you the most opportunities for residencies and future career options. CDTM, which just passed in New York, was a mainstay in NC and IL. Had I not seen its successes firsthand, I would have been one of the first to point out its potential flaws and resistant to its implementation. I can now be proud to have taught a coresident from small town in Ohio – the first person I have ever met who has never seen a fresh cherry – that maraschino cherries are not how cherries are naturally found; in exchange, she taught me how to make peppermint bark.

For that and many similar instances, I now have friends to visit in cities all over the United States. I remain close with residents from Chicago, Seattle, Cincinnati, and Boston. I do not think that I would have had the same experience if I chose a smaller residency program in NC, which may recruit candidates from mostly within the state.

A good way to prepare for a residency involves speaking with current residents at national conferences (it is mandatory for them to attend) and asking them about their experiences at the places that you are considering. Residents will filter-out and provide you with the most important details and avoid you from having to read pages and pages of informational material (which may not answer your questions). You can learn a lot from an initial reaction to your question, "how was your interview at this hospital?" than you may not get from reading a pamphlet.

Good questions to ask are: do you require your residents to publish (a plus in my opinion), are residents involved in the P&T process, do they perform CE-accredited presentations, what percentage of their duties involve verifying orders, and where have your residents from the previous year gone?

Q: What made you move to New York and become a faculty member at St. John's University College of Pharmacy and Allied Health Professions?

A: Pursuing academia has always been a goal of mine, and discovering the opportunity to become a faculty at St. John's University College of Phar-

macy and Allied Health Professions dispelled any fears of moving to New York City. It also removed any hesitancy to leave my friends and family. This past year teaching has only further solidified the belief that I made the right decision. I love working with students because I feel that I grow as they grow. Teaching has brought me the most satisfaction in my career thus far; surrounding myself with students renews my desire to learn more and to remain updated on the newest technological advances in medicine and teaching methods.

Q: Since you are a preceptor for the five-month NewYork-Presbyterian rotation, could you please explain how this program is beneficial to students aspiring to apply to a residency?

A: The five-month program is like a "mini-residency" process. It involves submitting an application, undergoing a review process, and receiving an acceptance notification to perform five of your APPE rotations with New York Presbyterian (NYP) Columbia or Cornell. The preceptors at NYP then know you as "bundle students," and Marc Roth helps you obtain your badge, username/password, and three elective rotations.

The program is represented by a student advisory committee, which discusses any issues or concerns voiced by the students or preceptors to optimize the experience. The organization of the program provides a platform for students to request activities that they wish to pursue. It also serves as a resourceful outlet for problems that students may experience.

The five-month program allows students to focus more of their time on learning, particularly by minimizing the time required to familiarize themselves with new hospital operations and computer systems. Students also maintain consistency with the protocol and guidelines of one institution. The rotation program also encourages longitudinal projects, since the student will be at the same organization for five months and allow preceptors the opportunity to have more "face time" with the same student(s). Projects spanning over one month are more aligned with the typical undertakings that students will be exposed to as residents, and these may better prepare them for a residency (should they pursue this route).

Q: Can you please explain what NYCSHP is? How can students become more involved in this organization?

A: NYCSHP is the Manhattan chapter of the New York State Council of Health-system Pharmacists (NYSCHP). It is a great organization to join because it allows members to meet other active pharmacy professionals and leaders. The organization provides its members with a variety of educational programs, philanthropic activities, and network experiences to encourage professional growth.

NYCSHP gears several programs towards student development. Of course, student participation at all of the events is always welcome.

Q: You have experienced a lot during your pharmacy career after graduating. Is there an inspirational person and/or quote that helped you get to where you are now?

A: I am extraordinarily fortunate for my exposure to so many inspirational and amazing mentors. My professors at UNC Chapel Hill set strong examples of the success that you can achieve through hard work and setting high goals. The pharmacy directors at institutions, like Swedish Memorial in Seattle and Northeastern Memorial Hospital, are visionaries that affirm the growth of pharmacy and the role of pharmacists as ideal, integral members of the healthcare process. My residency director made me realize there are many different ways to accomplish the same goal and that sometimes thinking outside the box makes you more valuable than conforming to how things "have always been done." My mentor at NorthShore hospital is the current president of ASHP, and, even with his busy schedule, found

time to encourage my involvement in professional pharmacy organizations so that I have a voice in the future of pharmacy.

The common thread among all the influential people in my career is not the wealth of accolades or achievements but the positive attitude, openness to change, and ability to adjust that was rudiment to their success. These are all the characteristics that I hope to embody along my professional career.

Q: What is your best piece of advice for current pharmacy students?

A: Ask questions. Even if you know what you want to do and how to proceed in getting it done, the information you garner when you ask questions is amazing. It may winnow away the undesirables and redirect you to a more suitable path or more compatible future.

I was happy with my job in Chicago and the friends I had. I serendipitously asked a colleague about what her friends in pharmacy do in NY. This lead to a conversation about how happy she was for a newly-engaged friend leaving for Boston who works as a professor at St. John's University College of Pharmacy and Allied Health Professions (right out of residency from CA). I decided to apply for the position, and, now, I am even happier than I was in Chicago with the trajectory of my career and the city in which I live (winters were way too long in Chicago).

I wish students Good Luck along their own journeys, and hope that my advice and own experiences provided a little bit of insight.

If you have any further questions, you may contact Dr. Tran at trant1@stjohns.edu or tht9016@nyp.org

JENTADUETO® APPROVED BY FDA FOR TYPE II DIABETES BY: EBEY SOMAN

The FDA recently approved a combination tablet of linagliptin with metformin hydrochloride (Jentadueto®) for the treatment of type 2 diabetes. Developed by Boehringer Ingelheim and Eli Lilly, the new combination tablet provides a twice-daily treatment option for healthcare providers looking for greater flexibility in treating diabetes.

Prescribers may add a sulfonylurea to linagliptin/metformin for greater glycemic control. Placebo-controlled trials demonstrated that the drug lowers hemoglobin A1C levels by 1.7%. The most common side effects (≥5%) were nasopharyngitis and diarrhea. Linagliptin/metformin did not cause any weight gain, unlike other treatment options (such as thiazolidinediones and certain insulins). Hypoglycemia is still a risk factor for patients treated with linagliptin/metformin and sulfonylurea. As with other "gliptins," pancreatitis is still a possible adverse effect. The drug also carries a Black Box Warning for the risk of lactic acidosis, particularly because of the metformin component.

There are no studies regarding the safety profile of the drug when used in conjunction with insulin. Clinical trials demonstrating the efficacy of linagliptin/metformin examined separate administrations of linagliptin and metformin. Researchers determined bioequivalence by co-administrating separate linagliptin and metformin tablets. It would be interesting to see more safety and efficacy trials for this drug based upon the combination tablet, and not the co-administration of linagliptin and metformin.

Jentadueto® will be available in pharmacies by this summer.

SOURCES:

1. Jentadueto [linagliptin and metformin hydrochloride] package insert.
2. Formulary staff. FDA approves tablets for adult patients with type 2 diabetes. Website. Available online: http://tinyurl.com/89sgy9b. 2012 Feb. Last accessed Feb 29, 2012.

VOLUME 1, ISSUE 6

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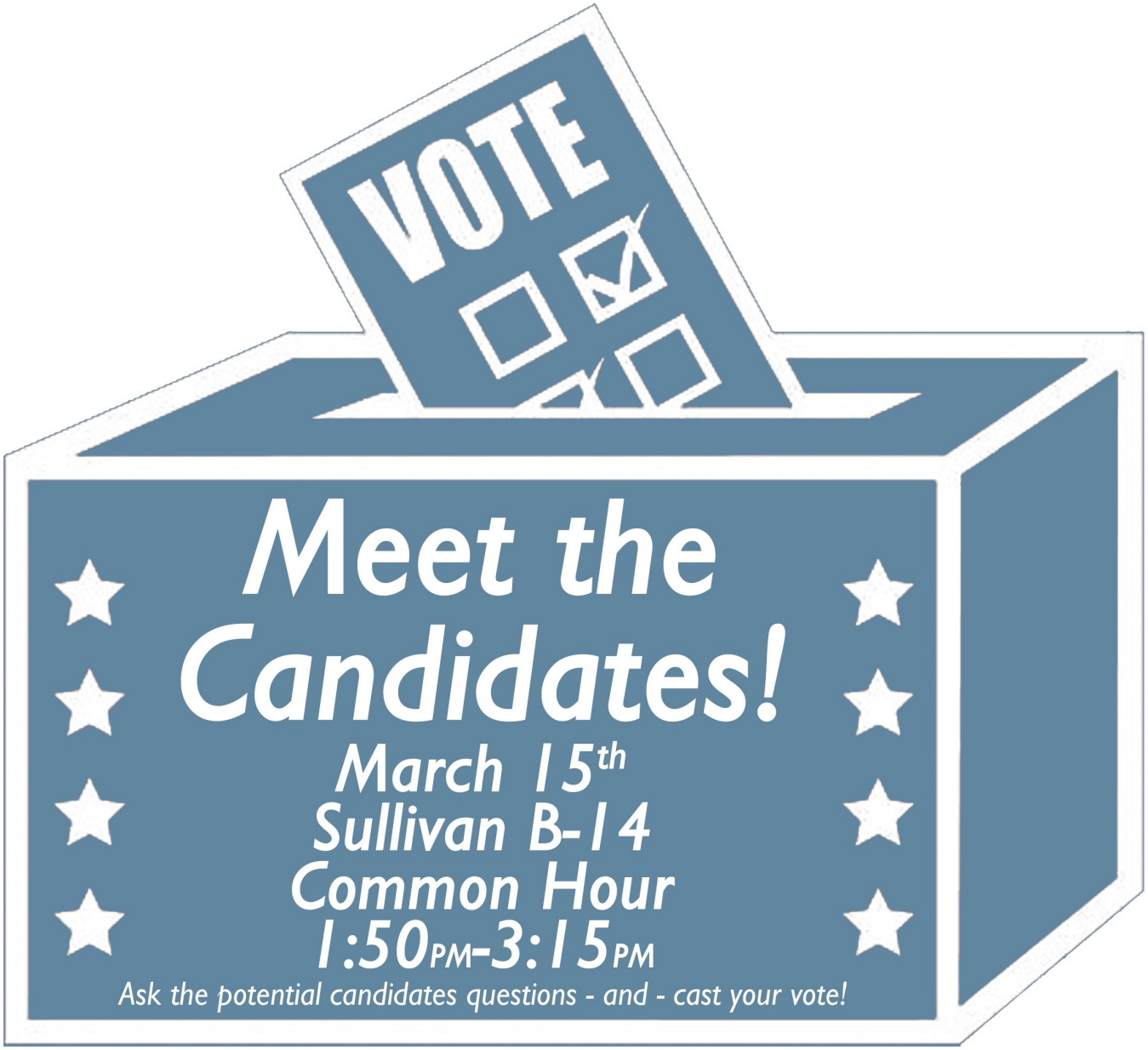

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FDA MAKES LABEL CHANGES TO STATINS BY: MOHAMED DUNGERSI

On February 28, the U.S. Food and Drug Administration (FDA) approved important safety label changes for the class of cholesterol-lowering drugs known as statins. Aligned with the FDA's goal to provide the public with more information for the safe and effective use of statins, the agency made several modifications to the sections on liver enzyme monitoring, adverse events, and drug interactions.

Previously, when patients were prescribed statin medications, their liver enzymes required routine monitoring (for instance, every three months). The FDA revised the label to remove the need for this monitoring. The labels now recommend that prescribers should perform liver enzyme tests before starting statin therapy and "as clinically indicated thereafter." If serious liver injury with clinical symptoms and/or hyperbilirubinemia or jaundice occurs during treatment, prescribed should interrupt the therapy. If there is no alternate etiology for these symptoms, prescribers should not restart the statin medication.

The rationale behind the abovementioned change, based on the FDA's conclusion, is that serious liver injury with statins is rare and unpredictable in individual patients. The routine periodic monitoring of liver enzymes did not appear to be effective in detecting or preventing serious liver injury.

The FDA also revised information about the potential for generally non-serious and reversible cognitive side effects, such as memory loss, confusion, forgetfulness, and amnesia. It also added increased blood sugar and glycosylated hemoglobin (HbA1c) levels in the revised labels. These reported symptoms are generally not serious, and are reversible upon statin discontinuation. They have variable times to symptom onset (1 day to years) and symptom resolution (median of 3 weeks). The FDA also states that the cardiovascular benefits of statins outweigh these small increased risks.

The third major change was to the lovastatin drug label. The FDA updated the label with new contraindications and dose limitations. For instance, when patients take lovastatin with certain medicines, the combination can increase the risk for myopathy/rhabdomyolysis (see following table).

Lovastatin Dose Limitations

Previous lovastatin label	New lovastatin label
Avoid lovastatin with: • Itraconazole, Ketoconazole • Erythromycin, Clarithromycin, Telithromycin • HIV protease inhibitors • Nefazodone	Contraindicated with lovastatin: • Itraconazole, Ketoconazole, Posaconazole • Erythromycin, Clarithromycin, Telithromycin • HIV protease inhibitors • Boceprevir, Telaprevir • Nefazodone
Do not exceed 20 mg lovastatin daily with: • Gemfibrozil • Other fibrates • Lipid-lowering doses (≥1 g/day) of niacin • Cyclosporine • Danazol	Avoid with lovastatin: • Cyclosporine • Gemfibrozil
	Do not exceed 20 mg lovastatin daily with: • Danazol • Diltiazem • Verapamil
Do not exceed 40 mg lovastatin daily with: • Amiodarone • Verapamil	Do not exceed 40 mg lovastatin daily with: • Amiodarone
Avoid large quantities of grapefruit juice (>1 quart daily)	Avoid large quantities of grapefruit juice (>1 quart daily)

SOURCES:

1. FDA. FDA Drug Safety Communication: Important safety label changes to cholesterol-lowering statin drugs. Website. Available online: http://www.fda.gov/Drugs/DrugSafety/ucm293101.htm#dose. 2012 Feb. Accessed on Feb 29, 2012.

FDA SUCCESSFULLY ALLEVIATES CHEMOTHERAPY SHORTAGE BY: MAHDIEH DANESH YAZDI

As previously reported, there is currently great concern in the medical community because of the growing number of drug shortages. Many of these are drugs that are critical to patient care, such as chemotherapy agents and antibiotics. Last October, President Obama issued an executive order in an attempt to curb the ever-increasing number of drugs that are in dwindling supply. Part of the executive order addressed the FDA, which asked the agency to intervene (whenever possible) to avert a shortage. In compliance with the executive order, the FDA recently announced a successful attempt to stop the shortage of two major chemotherapy agents: methotrexate and doxorubicin.

Methotrexate is an antimetabolite drug often used in the treatment of cancers and certain autoimmune disorders. It works by inhibiting purine synthesis by interfering in the folate pathway. Methotrexate can treat various cancers including but not limited to acute lymphocytic leukemia (ALL), breast cancer, head and neck cancer, psoriasis, and rheumatoid arthritis. Doxorubicin is an anthracycline antibiotic that works by intercalating the DNA and preventing replication. It can treat AIDS-related Kaposi sarcoma, multiple myeloma, leukemia, and Hodgkin's lymphoma.

Both of these drugs are critical for cancer treatment, but have been in short supply for some time. For methotrexate, the shortage was due to the shutdown of one manufacturer (out of four that supply it) amid concerns over its manufacturing quality. To alleviate the shortage, the FDA came to an agreement with the other three manufacturers to increase their drug production. The FDA also approved APP Pharmaceuticals' application to produce a preservative-free version of the drug, which should be widely available by March. There are also reports of agreements with foreign manufacturers to compensate for the shortage of the drug. It was especially critical that the supply of methotrexate did not diminish further, as it is part of the treatment of choice for ALL (a leukemia commonly found in children). Not using it would compromise the care received by pediatric patients and jeopardize their chances of remission.

On the other hand, doxorubicin has been in short supply for several years. The FDA is allowing the importation of another formulation of doxorubicin, LipoDox, produced by Sun Pharma Global FZE. The FDA is confident about the quality of the manufacturing firm; it oversees production of other drugs by the same company (Ault).

With these steps, thousands of people who rely on methotrexate and/or doxorubicin as their fundamental treatment may now receive them in a timely manner. It is important to note that, despite these efforts, drug shortages continue to be a crippling problem within the medical world. To prevent future incidents and alleviate current shortages, it is imperative for us to address the problem at a fundamental level.

For a list of all current drug shortages, please visit:
http://www.fda.gov/Drugs/DrugSafety/DrugShortages/ucm050792.htm
- OR -
http://www.ashp.org/DrugShortages/Current/

SOURCES:

1. Ault, Alicia. "FDA Acts to Curb Doxorubicin, Methotrexate Shortages." 21 February 2012. Internal Medicine News. 25 February 2012 <http://www.internalmedicinenews.com/views/observation-unit/blog/fda-acts-to-curb-doxorubicin-methotrexate-shortages/766f825674.html>.
2. Lexi-Comp OnlineTM , Lexi-Drugs OnlineTM , Hudson, Ohio: Lexi-Comp, Inc.; February 25, 2012.
3. Nelson, Roxanne. "Stopgaps Avert Methotrexate and Doxil Shortages--For Now." 21 February 2012. Medscape. 25 February 2012 <http://www.medscape.com/viewarticle/758954>.

What are your thoughts on the topic?

Write to our editors at rhochis@gmail.com and we will feature your response in our next edition!

A LETTER FROM THE RHO CHI POST EDITORIAL TEAM

Dear Readers,

We are always looking to engage with each of you. If you are a talented cartoonist or have a passion for art, feel free to contact one of the editors. We are looking to start a comic piece for each issue. It is a great way to express yourself and earn a spotlight for your artistic skills while drawing attention to an aspect of pharmacy profession.

Can't draw? No problem, take pictures instead! We need photographers who can attend campus events and seminars that are related to healthcare or pharmacy profession. Please feel free to send us the pictures with one or two paragraphs explaining the event and we will feature you in our newsletter.

Perhaps you have a passion for writing; if so, feel free to write to us in response to an article you read. We love to see knowledgeable and insightful "Letters to the Editor." Even if it is just a question or a few comments on an article, email us!

Don't like what you see in the newsletter? Then let us know! Tell us what you would like to see in the newsletter, what topics you are interested in, and/or if you wish to read more about a specific topic. The newsletter is for you; so, your feedback is very important to us. We love to hear from faculty and staff as well.

This is a commitment-free way to stay involved with pharmacy profession. Contributing to our newsletter does not obligate you to contribute to every issue. We are more than happy to have guest authors and talented students work with us whenever they are available or free to do so. Of course, not all submissions will be accepted; we will only publish content that is deemed relevant for our newsletter.

If you have any questions, comments, and/or concerns, feel free to email us at rhochis@gmail.com or contact a specific editor.

With much thanks,

The Rho Chi Post Editorial Team

NEW MEDICATIONS FOR THE TREATMENT OF COPD BY: SHANNON TELLIER

Chronic obstructive pulmonary disease (COPD) is a lung disease that currently has no cure. However, lifestyle changes and medications can help patients remain active, minimize symptoms, and slow the progression of the disease. For patients who smoke, smoking cessation should be the first and most important intervention in the treatment of COPD. Currently, only a few medications adjust the long-term decline in lung function; they decrease the symptoms and complications associated with the disease. Selecting a specific medication in each class depends on availability, cost, and patient's response. Each medication regimen should be patient-specific, as there are differences in the severity of symptoms and exacerbations. Patients with frequent exacerbations of COPD have increased mortality and experience a rapid decline in pulmonary function. Therefore, it is important to treat COPD patients with medications that may reduce acute exacerbations, which include long acting beta agonists (LABA), inhaled corticosteroids (IHCS), combinations of IHCS and LABAs, anticholinergics, or phosphodiesterase inhibitors. These medications do not eliminate exacerbations, but provide an overall improvement of symptoms. Recently, there have been a couple of new drug discoveries for the treatment of COPD.

Instead of developing new treatments, researchers are currently improving the efficacy of preexisting drug molecules. Salmeterol (Serevent®) and formoterol (Foradil®) are the two LABAs available on the market. Recently, there emerged a new beta-2 adrenergic class called ultra-LABAs. In January 2012, indacaterol (Arcapta®) was the first ultra-LABA approved. Indacaterol has a long duration of action (24 hours), but even though it has a fast onset (of 5 minutes), it should not be used as a rescue medication. The main advantage of indacaterol is its once daily dosing, but it is only for the management of COPD, while salmeterol and formoterol are for the management of both, asthma and COPD. The combination of indacaterol's fast onset and long duration of action aids in patients' adherence to the medication. Rapid relief of COPD symptoms provides patients with reassurance and the likeliness to become adherent with their inhalers. Currently, there are no clinically significant advantages of indacaterol over other bronchodilators used for COPD, leaving indacaterol's only advantage to be its once daily dosing.

The combination of IHCS-LABA inhalers are the drugs of choice for COPD maintenance therapy. They reduce inflammation and open the lung passages. Currently, salmeterol/fluticasone (Advair®) and formoterol/budesonide (Symbicort®) are the combination inhalers available for symptomatic treatment of COPD. Two pharmaceutical companies, GlaxoSmithKline and Theravance, are in the process of developing a new IHCS-LABA, vilanterol/fluticasone (Relovair®). This new LABA completed Phase III clinical trials, and the companies plan to submit vilanterol/fluticasone for regulatory approval in the U.S and Europe in mid-2012. They hope that it will reach the market in 2013. The advantage of vilanterol/fluticasone is once daily dosing, as compared to twice daily with salmeterol/fluticasone and formoterol/budesonide. The patent for Advair® expires in both, the U.S and Canada, within the next few years; GlaxoSmithKline, the maker of Advair®, hopes that Relovair® will become the replacement combination inhaler for the treatment of COPD.

Anticholinergic agents provide another option for the treatment of COPD. In the U.S. market, there are short and long acting medications (ipratropium and tiotropium, respectively). These anticholinergic agents cause bronchodilation by blocking the action of acetylcholine in the bronchial smooth muscle. Ipratropium is a non-selective muscarinic-receptor antagonist that blocks M1-M5 receptors. Tiotropium possesses

selectivity for the M1, M2, and M3 receptors, all found in human lung tissue. Since tiotropium has more selectivity for the M3 receptors, it carries less of a risk for the cardiac effects caused by M2 receptor blockade. Another advantage of tiotropium is its once daily dosing, particular due to its slow dissociation from M3 receptors (as compared to ipratropium's four times daily administration). Last month, the U.S. FDA's Pulmonary-Allergy Drugs Advisory Committee voted in favor of approving aclidinum bromide, another M3 selective anticholinergic, for the treatment of bronchospasm associated with COPD. Unlike tiotropium, which requires manipulation to prepare a dose, aclidinum bromide (Genuair®) is a dry powder inhaler pre-loaded with a one-month supply of powder. Before any FDA approval, the manufacturer must conduct large studies that include patients with pre-existing cardiovascular disease.

Another therapeutic option for COPD treatment is phosphodiesterase-4 (PDE-4) inhibitors. These medications are for severe cases of COPD, as they carry increased risks of adverse effects compared to inhaled medications. In the past, prescribers used theophylline, a non-selective PDE inhibitor, to treat asthma and COPD, but it has a very narrow therapeutic index, drug interactions, and life-threatening adverse events. In February 2011, the FDA approved roflumilast (Daliresp®), a PDE4 inhibitor, as add-on bronchodilator therapy in the maintenance of COPD associated with chronic bronchitis. PDE4 inhibitors have specificity for cyclic adenosine 3',5'-monophosphate (cAMP), which helps to down-regulate the underlying inflammation associated with COPD. Roflumilast is not a bronchodilator and is not for treating patients with acute bronchospasms. It is available as a 500 mcg oral tablet given once daily. No dosage adjustments are required in elderly patients or patients with renal impairment. The most common side effects of roflumilast are diarrhea, weight loss, and nausea. Since roflumilast, like theophylline, is a major inhibitor of CYP3A4, there is a potential for many drug interactions. As indicated previously, roflumilast is for patients with severe COPD associated with chronic bronchitis and a history of exacerbations with symptoms uncontrolled by inhaled bronchodilators.

Even though there are no available medications that prevent the long-term decline in lung function, current medications are capable of reducing symptoms, preventing acute exacerbations and slowing the progression of COPD. Modifications of available LABAs and IHCS-LABAs have resulted in once daily medications, such as indacaterol and vilanterol/fluticasone, which help to increase patient adherence. The recommendation of aclidinium by the FDA panel allows for another option of a selective anticholinergic inhaler (but with less cardiac effects than ipratropium, the non-selective muscarinic antagonist). The approval of roflumilast provides patients with severe COPD an additional option in treatment. These new medications only help patients with symptom management; perhaps, in the near future, there will be medications to prevent the long-term decline in lung function.

SOURCES:

1. PL Detail-Document, New Drug Arcapta (Indacaterol).*Pharmacist's Letter/Prescriber's Letter*. January 2012.
2. Hanania N, Feldman G, et al. The Efficacy and Safety of the Novel Long-Acting β2 Agonist Vilanterol in COPD Patients: a Randomized Placebo-Controlled Trial. *Chest*. 2012.
3. Field, S. Roflumilast, a Novel Phosphodiesterase 4 Inhibitor, for COPD Patients with a History of Exacerbations. *Clin Med Insights CircRespirPulm Med*. 2011;5: 57-70.
4. Brown, T. *Medscape*. FDA Panel Recommends Twice-Daily Aclidinium for COPD. Accessed February 27, 2012. http://www.medscape.com/viewarticle/759174
5. The *Global Strategy for the Diagnosis, Management and Prevention of COPD*, Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2011. Available from: http://www.goldcopd.org/.

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I-STOP: THE NEW FRONT AGAINST PRESCRIPTION DRUG ABUSE BY: MAHDIEH DANESH YAZDI

As previously reported, the recent rise in violence against pharmacies (by people in search of narcotic medications) has riled the New York State legislature into action. The attorney general has also joined the fray in the fight against prescription drug abuse. Last June, Attorney General Eric T. Schneiderman, proposed setting up a new program known as "I-STOP"- Internet System for Tracking Over Prescribing - to combat the wave of prescription drug abuse. U.S. Senator Kirsten Gillibrand (D-NY) and various experts have recently endorsed this program. The program is still in its initial phase of development, and the passing of new legislation and regulations are required to make this idea operational.

The concept of I-STOP is to establish an online database that would track controlled substance prescriptions for each individual. This would constitute a prescription-monitoring program (PMP). Under current laws in New York State, all pharmacies must provide information on all controlled substances that they dispense to the Bureau of Narcotic Enforcement (BNE), which operates under the state's Department of Health (DOH), on the 15th day of the following month after dispensing the drug. The problem arises from the fact that despite this data, many providers cannot or do not access the data. In addition, patients are only "flagged" if they meet certain criteria, such as filling two prescriptions for controlled substances from two different prescribers or at two different pharmacies. Furthermore, doctors do not provide any information on prescriptions they have written by hand. These limitations render the current prescription-monitoring program in New York rather inefficient. Under these conditions, the need for a program like I-STOP has risen.

I-STOP would require the Department of Health to set up an online database that would track all controlled substances. This program would require prescribers to review a patient's profile for controlled medications and put in any prescriptions they write for controlled substances as soon as they give the prescription to the patient. It would also require pharmacists to review the patients' controlled medication profiles prior to dispensing and to report the dispensing of any controlled medications at the time of dispensing. The program would ensure the privacy of the individual by prohibiting the disclosure of the information by any of the parties with access to the information. It imposes new penalties for those who disclose the information not acting in "good faith" as part of their duties. Unfortunately, there is no plan as of yet to integrate this system or create a national system where controlled medications may be monitored across state lines. Forty-three other states already have prescription monitoring programs. Sharing this information would discourage abusers from crossing state lines in order to get prescriptions for controlled substances.

I-STOP is currently is under legislative review. Sen. Andrew Lanza (R-Staten Island) is sponsoring it in the State Senate and Assemblyman Michael Cusick (D-Staten Island) in the State Assembly. Both versions of the bill are currently in the health committees of the respective chambers of the New York State Legislature. The bill has support in both houses with 33 Senate members and 48 Assembly members co-sponsoring the bill.

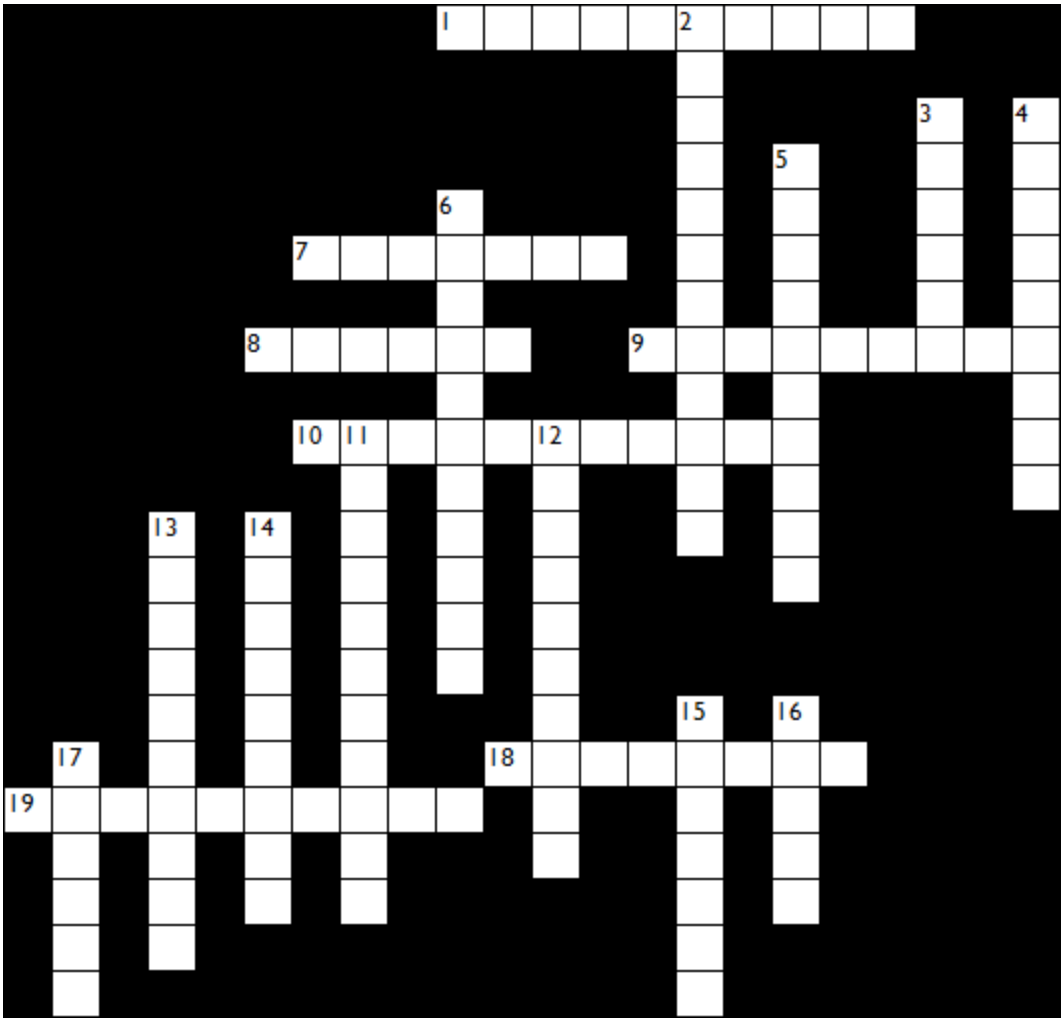
The attorney general's office has set up a website where people can share their stories in dealing with the drug abuse epidemic currently plaguing the state. This new website puts a "human face" to the problem in order to spur other members of the community and legislature into supporting the bill. It is available at http://www.ag.ny.gov/online_forms/istop.jsp.

For more information about the I-STOP program, please visit:
http://www.ag.ny.gov/media_center/2012/jan/ISTOP%20REPORT%20FINAL%201.10.12.pdf

What is your input on this situation?

Write to our editors at rhochis@gmail.com and we will feature your response in our next edition!

PUZZLE: CROSSWORD BY: MAHDIEH DANESH YAZDI



Across

1. Tornalate
7. DPI available as a twisthaler
8. Recombinant DNA-derived humanized monoclonal antibody indicated for moderate to severe asthma
9. Preferred agent for rescue therapy in asthma
10. As a nasal spray it is known as Omnaris
18. Mast cell stabilizer marketed as a sodium salt
19. Glucocorticoid that was recalled in 2004 amid fears it did not deliver a full dose

Down

2. Dimethylxanthine
3. =Salmeterol+Fluticasone
4. Leukotriene receptor antagonist administered once daily
5. Beta 2 agonist available as an autohaler
6. Leukotriene receptor antagonist administered twice daily
11. Anticholinergic used in the treatment of asthma and COPD
12. LABA available as a diskus
13. LABA available as aerosolized capsule an inhalation solution
14. =Budesonide+Formoterol
15. R-enantiomer of albuterol
16. 5-Lipoxygenase inhibitor used in asthma
17. =Formoterol+Mometasone

THE CHANGING ROLE OF COMMUNITY PHARMACY BY: CHARLES GEORGE, PHARM.D.

Charles George, Pharm.D. is a recent graduate from the University of Florida in 2011. He currently works as a community pharmacist for Walgreens Pharmacy in the Central Florida area. Since graduation, his daily interaction with patients revealed the need for pharmacists to adapt to the evolving role of community pharmacy.

Disclaimer: We have altered the scenario and name in this article to protect patient privacy. The scenario is based on true events.

It is 6:30 pm in the community pharmacy. The usual after-work rush is winding down. You can just feel the sense of relief in the air. The pharmacy technician takes a deep breath and slowly exhales. She looks out to make sure there is no one else waiting, but she soon hears footsteps coming closer. The technician hopes that it is someone just walking by or shopping for some vitamins. However, it is a woman maybe in her 40's in disheveled clothing. The woman approaches the pharmacy counter carrying something in a white shopping bag. Releasing a big sigh of relief as she glares into the eyes of the technician, the woman states, "I hope you can help." Watching and listening, the pharmacist, just three few weeks removed from licensure, takes a small gulp, murmurs under his breath, "Lord, I hope I did not miss-fill a prescription." The white shopping bag contains about 10 medication bottles, and some have their labels fading and are barely readable. The woman at the counter, in a very tiresome voice, asks, "What are these medications?"

While community pharmacists are the most accessible health professionals, their presence is frequently invisible to patients. May be as far as six years ago, the pharmacist was "The Wizard" in the back, appearing to the window only if "summoned." Today, it is common to see pharmacists engaging with every patient, and empowering patients to take control of their own health needs. Pharmacists are administering vaccines, providing health tests, and counseling on over-the-counter products. However, we still do not fully realize the community pharmacists' best assets. Pharmacists are medication experts, and have profound abilities to communicate with patients about their medications and disease states. Yes, medication therapy management (MTM) would be the best word to describe the new role of pharmacists.

As the above incident unfolds, the pharmacist steps in to help, and invites the woman to sit down in the pharmacy's break room. The woman is the sole caretaker of her mother (the patient), who has Alzheimer's disease. Until few months ago, a home nurse cared for the patient; however, the patient's symptoms progressed and she moved in with her daughter. During the conversation, the pharmacist explains the medications' indications and writes down the important counseling points. He also provides the woman with a pill organizer. The pharmacist discovers a few undertreated diseases, duplications of therapy, and symptoms of potential drug-induced adverse events. He also provides information about the disease states. Even then, there is something quite not right about the situation: the woman's appearance. The pharmacist reaches his hand over her shoulder, and asks, "How are you doing Ms. Jame?" Her eyes swell with tears as she lifts her head up. She looks at the pharmacist sitting in front of her, and proclaims in a broken voice, "I am trying to be strong."

MTM is an overlooked and valuable service that pharmacists provide. In the patient-centered healthcare model, MTM reduces healthcare costs. However, due to the lack of reimbursement for the time and other factors, many pharmacies and pharmacists are shying away from this important service. Ms. James, who walked into the pharma-

cy six years ago, may not have gotten a chance to see the pharmacist. The technician simply could have taken the bottles to the pharmacist and written their indications on the labels.

Medication and disease state knowledge are always involved in MTM. However, asking open-ended questions, being empathetic, finding the best way to communicate, and confirming patients' understandings are the principles that bring everything together. When Ms. Jame arrived to the counter, I was able to utilize the lessons that my professors and preceptors repeatedly drilled me on. I have had several encounters with Ms. James, and I am glad that I can provide her with information about support groups for Alzheimer's patients. Nowadays, she is in better spirits; we consolidated and explained her mother's medications to her.

I believe that if you are ready to show your value as a pharmacist, the recognition will follow.

INHALED CAFFEINE UNDER INVESTIGATION BY: MAHDIEH DANESH YAZDI

A few months ago, a new product called AeroShot Pure Energy hit the markets in New York and Massachusetts. AeroShot is a new inhaler that gives the user bursts of caffeine. Each inhaler contains an estimated 100mg of caffeine, approximately the same amount as a large cup of coffee. It also contains B-vitamins, sweeteners, natural lime flavor, citric acid, and sodium bicarbonate. It was developed by Harvard professor of biomedical engineering, David Edwards, the same individual responsible for the chocolate inhaler, LeWhif (indeed, chocolate also is available as an inhalation). Breathable Foods Inc. is currently marketing the product.

Each inhaler contains about 4-6 puffs, and each puff translates into roughly 15-25 mg of caffeine. The packaging of the product recommends that use be limited to three puffs daily. The manufacturer boasts that AeroShot offers the benefits of caffeine in a convenient and calorie-free manner. The FDA has not approved the product as it is as a "dietary supplement."

Recently, Sen. Chuck Schumer (D-NY) has asked the FDA to conduct an investigation into the safety of AeroShot. The commissioner of the FDA, Dr. Margaret Hamburg, has agreed to do the investigation and the manufacturer has promised to fully cooperate with the FDA. Sen. Schumer expressed concern over the possibility that consumers may abuse the product, using dangerously high levels to stay awake as long as possible. These fears are similar to those expressed over alcoholic drinks that were also caffeinated. These drinks, such as Four Loko, have since been banned. The senator also stated that the packaging of the product claims that is safe for ages 12 and up, but that the American Academy of Pediatrics has previously reported variable and dose-dependent effects of caffeine on children. The manufacturer claims that it does not recommend the use of the product in those under 18 and does not market it to children.

We have yet to see if the FDA's investigations will lead to any serious consequences for the marketing of AeroShot.

SOURCES:

1. Breathable Foods, Inc. AeroShot Energy. 2012. 26 February 2012 <http://www.aeroshots.com/?>.
2. WKBW News. Schumer Calls for Review of Caffeine Inhaler. 19 February 2012. 26 February 2012 <http://www.msnbc.msn.com/id/46449719/ns/local_news-buffalo_ny/t/schumer-calls-review-caffeine-inhaler/#.T1DhHofOU1M>

IMAGE SOURCE:

http://www.greatist.com/cms/wp-content/uploads/2012/01/AeroShot_2.jpg

PHARMACISTS IN ALBERTA ALLOWED TO RENEW PRESCRIPTIONS BY: MOHAMED DUNGERSI

Starting July 1, 2012, Albertans will be able to have their prescriptions renewed at their local pharmacies and pharmacists will receive reimbursements for the service. Patients will be able to renew medications for blood pressure, birth control, and asthma (particularly, inhalers) without waiting weeks to get into their family doctor's office. This allows primary healthcare professionals to be more accessible and convenient.

Pharmacists will earn $20 each time they renew a prescription as the government brings in a new compensation model that aims to save people money and improve access to care. The move will cost Alberta Health and Wellness $20 million this year, but will save the province money, in part because pharmacists will be paid $20 for each renewal compared to the $35 currently paid to doctors for the same task. This will allow physicians to have more time to spend with other patients.

In 2007, pharmacists in Alberta obtained the ability to renew, adjust, and write new prescriptions (with special training and an application process). There is now a model that compensates them for their extra work. All 4,200 pharmacists in Alberta will be able to renew all prescriptions, except narcotics. Of course, pharmacists will only renew a prescription if they have a complete patient history and an up-to-date snapshot of a patient's health. It will be up to their discretion to renew the prescription, considering the patients' best interests.

Pharmacists greeted the move with a sense of approval, as it represented continued growth of the role of the pharmacist. Last year, 83,000 Albertans received their flu shots from pharmacists. This was 50,000 more than the year before. We have yet to determine if other states in Canada or the United States will adopt a similar model, especially as healthcare costs continue to soar in both nations.

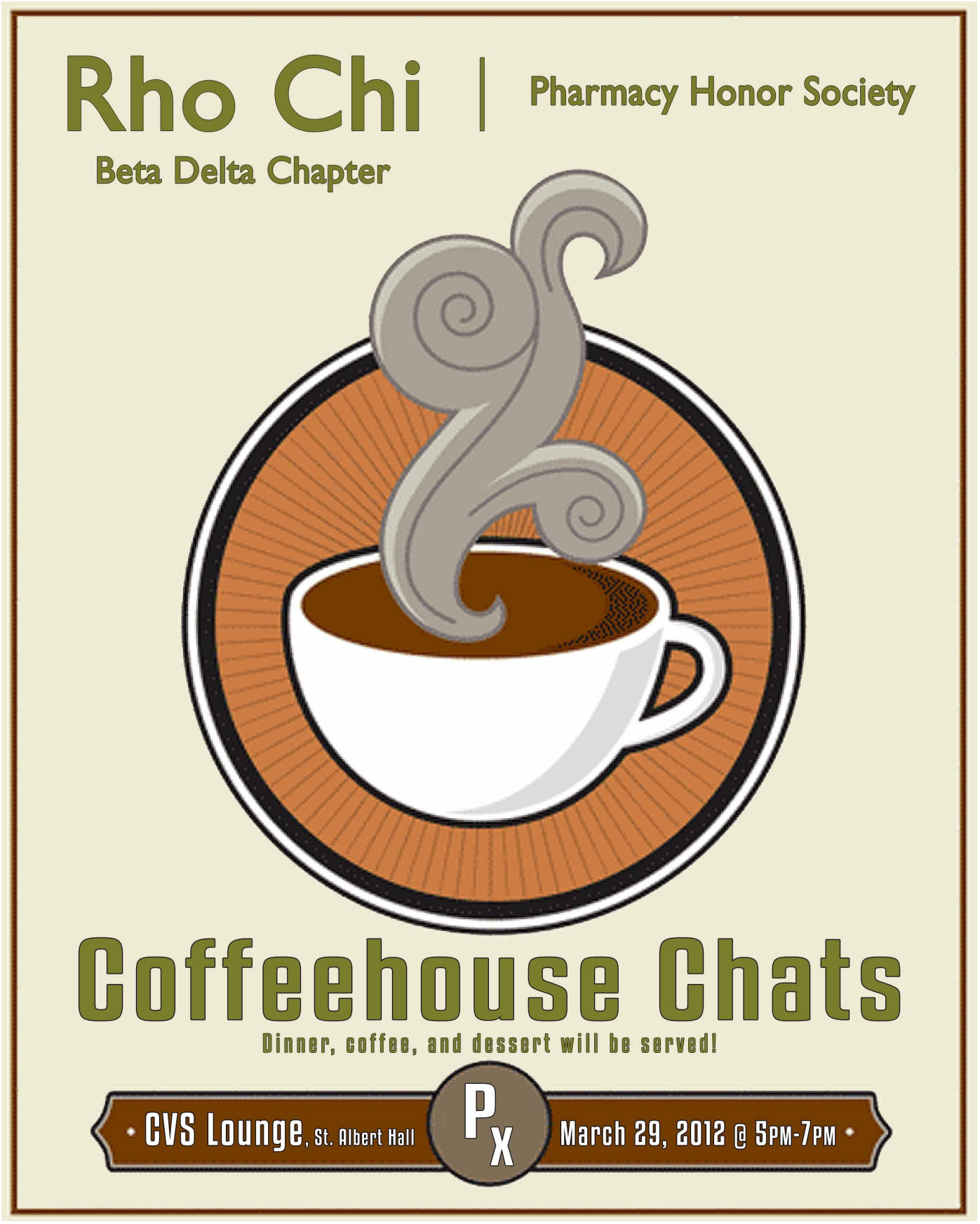
Regardless, this move serves as a key point for the worlds of pharmacy and healthcare. If this service reimbursement model is successful in the coming years, more states will look keenly at the model that Alberta has employed and consider applying a similar one in the future.

SOURCES:

1. Sinnema, J. New fee schedule gives pharmacists $20 for Rx renewals. Website. Available online: http://www.edmontonjournal.com/health/schedule+gives+pharmacists+renewals/6146977/story.html. 2012 Feb 14. Last accessed Feb 25, 2012.
2. Prescription Renewal made easier. Website. Available online: http://calgary.ctv.ca/servlet/an/local/CTVNews/20120213/CGY_pharmacy_renewal_120213/20120213/?hub=CalgaryHome. 2012 Feb 13. Last accessed Feb 25, 2012.
3. CBC News. Alberta pharmacists to renew prescriptions. Website. Available online: http://www.cbc.ca/news/canada/edmonton/story/2012/02/13/edmonton-alberta-pharmacy-prescriptions.html. 2012 Feb 13. Last accessed Feb 25, 2012.

What are your thoughts?

Write to our editors at rhochis@gmail.com and we will feature your response in our next edition!


Rho Chi | Pharmacy Honor Society
Beta Delta Chapter
Coffeehouse Chats
Dinner, coffee, and dessert will be served!
CVS Lounge, St. Albert Hall
Px
March 29, 2012 @ 5PM-7PM

CHF: A RARE BUT SERIOUS PRESENTATION OF GRAVES' DISEASE

BY: JAMES SCHURR, PHARM.D. CANDIDATE C/O 2014

Graves' disease is an autoimmune disorder that results in a state of thyrotoxicosis, or a cause of hyperthyroidism, due to the Immunoglobulin G -mediated agonism of thyroid stimulating hormone (TSH) receptors located on the thyroid. Stimulation of TSH receptors causes an increase in circulating thyroxine (T_4) and triiodothyronine (T_3) levels, leading to a hyperthyroid state.[1] This can lead to many adverse effects in the Graves' disease patient, including but not limited to cardiac complications. While not a common cause of congestive heart failure (CHF), Graves' disease can lead to CHF secondary to thyrotoxicosis.[2-5]

As defined in the American College of Cardiology / American Heart Association Practice Guidelines, CHF is "a complex clinical syndrome that can result from any structural or functional cardiac disorder that impairs the ability of the ventricle to fill with or eject blood."[6] The pathophysiological mechanism underlying the relationship between Graves' disease and CHF is increased cardiac function associated with a hyperthyroid state.[4] This includes an increased heart rate, cardiac output, cardiac contractility, and peripheral oxygen consumption.[4] Additional cardiac complications could be due to activation of the renin-angiotensin-aldosterone system (RAAS), as a result of increased circulating T_3 levels.[4] Primary treatment of Graves' disease consists of either antithyroid drugs, surgery, or radioactive iodine; adjunctive treatments include iodides, β-blockers, calcium channel blockers, and corticosteroids.[7]

Thyroid hormone has profound effects on the cardiovascular system, particularly the myocardium and hemodynamics. The autoimmune nature of Graves' disease is an interesting factor in the pathogenesis of this disorder, and allows for a multifaceted approach in its treatment (from immunologic, endocrinologic, and cardiologic perspectives). The immune mechanism in Graves' disease involves the activation of thyroid-specific T helper cells, which recognize the endogenous TSH receptor. This leads to the stimulation of autoreactive B cells and anti-TSH receptor immunoglobulins. The anti-TSH receptor immunoglobulins cause an activation of adenylyl cyclase in the thyrocyte. This leads to an increase in cyclic-adenosine monophosphate (cAMP) levels in the cell, and causes increased thyroid hormone secretion.[1] T_3 is the active cellular form of thyroid hormone, and is the key player in altering cardiac function in hyperthyroid states. The direct effects of T_3 include increased tissue thermogenesis, decreased systemic vascular resistance (leading to a cascade of decreased effective arterial filling volume), increased renal sodium reabsorption, and increased blood volume. All of these culminate to increase cardiac inotropy and chronotropy, as well as cardiac output.[4] Overall, the increase in heart rate and cardiac output, as well as widened pulse pressure, resemble an increased adrenergic state, which helps explain why thyrotoxicosis can lead to CHF.[8]

Patients with Graves' disease generally present with diffuse goiter, hyperthyroidism, exophthalmos, and dermopathy. The onset of symptoms is gradual, beginning with nonspecific findings (including nervousness, emotional lability, and weight loss) and progressing to cardiac complications (such as tachycardia and exacerbation of cardiac complications in patients with preexisting heart disease).[1] Heart failure is generally a rare occurrence (6%) in thyrotoxicosis patients, but requires attention because it can lead to death.[2]

Graves' disease is the most prevalent autoimmune disease in the United States. It affects women 7-10 times more than men, and generally, in the third and fourth decades of life.[1] James Magner and colleagues described the significance of the rare complication of CHF in young women with Graves' disease. A 34-year-old woman diagnosed with Graves' disease presented with tremulousness, nervousness, heat intolerance, and diffuse headaches. The patient had no history of heart disease, but physical examination and laboratory diagnostics confirmed a small goiter and

immune-mediated hyperthyroidism consistent with Graves' disease. Upon cardiac examination, she had a jugular venous pulse with prominent ventricular waves and 10-centimeter elevation, pedal edema, cardiomegaly on chest x-ray, pleural effusion, and ventricular hypertrophy. Her presentation was consistent with CHF. Shortly after the patient died, an autopsy revealed a dilated heart with evidence of a chronic congestive cardiomyopathy.[5] The findings were a prime example of how detrimental CHF can be, even in a young, otherwise healthy Graves' disease patient.

The initial treatment for Graves' disease involves one of three routes determined by patients and their providers, consisting of radioactive ^{131}I therapy, antithyroid pharmacotherapy, or thyroidectomy.[9] For treatment with antithyroid drugs, the thioamides (methimazole and propylthiouracil) are the drugs of choice.[10] The American Thyroid Association and American Association of Clinical Endocrinologists recommend using methimazole when initiating antithyroid therapy in a Graves' disease patient, except for patients in their first trimester of pregnancy (where propylthiouracil is preferred). Methimazole is continued for 12-18 months; then, it is tapered off or discontinued if TSH levels return to normal.[9] Methimazole and propylthiouracil are associated with toxicities in $\geq$12% of treated patients. These toxicities include gastrointestinal distress, a maculopapular pruritic rash, hepatitis (more common with propylthiouracil), cholestatic jaundice (more common with methimazole), and agranulocytosis.[10] Agranulocytosis is a rare but potentially fatal adverse effect of thioamides; therefore, prior to initiation of therapy, it is important to obtain baseline white blood cell counts with a white cell differential.[9] ^{131}I (radioactive iodine) is the sole isotope available for treatment of Graves' disease. Patients take it as an oral solution, and it is rapidly absorbed and concentrated in the thyroid. β radiation emissions destroy the parenchyma, and abate the thyrotoxicosis.[10] Treatment recommendations also include considering a β-adrenoceptor blocker (such as metoprolol or atenolol) for patients with symptomatic thyrotoxicosis.[9] Propranolol is preferred because it reduces T_3 levels by 20% when given at doses of $\geq$160mg daily.[10] This therapeutic option overlaps treatment of CHF in patients who are not in acute decompensation, and therefore would appear to be a good choice of therapy.

Cardiovascular effects of Graves' disease subside after appropriate management of thyrotoxicosis.[11] Therefore, it is imperative to treat the underlying autoimmune disorder in these patients and initiate appropriate CHF treatment based on patients' presentations.

SOURCES:

1. Rubin, R. Rubin's Pathology: Clincopathic Foundations of Medicine. 5th Edition. Lipincott Williams & Wilkins. Philadelphia PA. 2008
2. Hong JY, Park DG, Yoo JJ, *et al*. The Correlation Between Left Ventricular Failure and Right Ventricular Systolic Dysfunction Occuring in Thytotoxicosis. *Korean Circ J*. 2010;40:266-271
3. Berlin T, Lubina A, Levy Y, Shoenfeld Y. Graves' disease Presenting as Right Heart Failure. *IMAJ*. 2008;7:217-218
4. Epstein FH, Klein I, Ojamaa K. Thyroid Hormone and the Cardiovascular System. *N Engl J Med*. 2001; 344,7:501-509
5. Magner JA, Clark W, Allenby P. Congestive Heart Failure and Sudden Death in a Young Woman with Thyrotoxicosis. *West J Med*. 1988; 149: 86-91
6. Hunt SA, et al. ACC/AHA guidelines in the evaluation and management of chronic heart failure in the adult: a report of the American College of Cardiology/ American Heart Association Task Force on Practice Guidelines. *Circulation*. 2001; 104: 2996
7. Koda-Kimble MA. Applied Therapeutics: The Clinical use of Drugs. 9th edition. Lipincott Williams & Wilkins. Philadelphia PA. 2009
8. Levey GS, Klein I. Catecholamine-thyroid hormone interactions and the cardiovascular manifestations of hyperthyroidism. *Am J Med*. 1990; 88: 642-6
9. Bahn, RS, Burch HB, Cooper, DS, *et al*. Hyperthyoidism and other causes of thyrotoxicosis: management guidelines of the American Thyroid Association and American Association of Clinical Endocrinologists
10. Katzung BG, Masters SB, Trevor AJ. Basic and Clinical Pharmacology. 11th edition. McGraw-Hill. New York NY. 2009
11. Nakchbandi IA, Wirth JA, Inzucchi SE. Pulmonary hypertension caused Graves' thyrotoxicosis: normal pulmonary hemodynamics restored by 1311 treatment. *Chest*. 1999; 116: 1483-5

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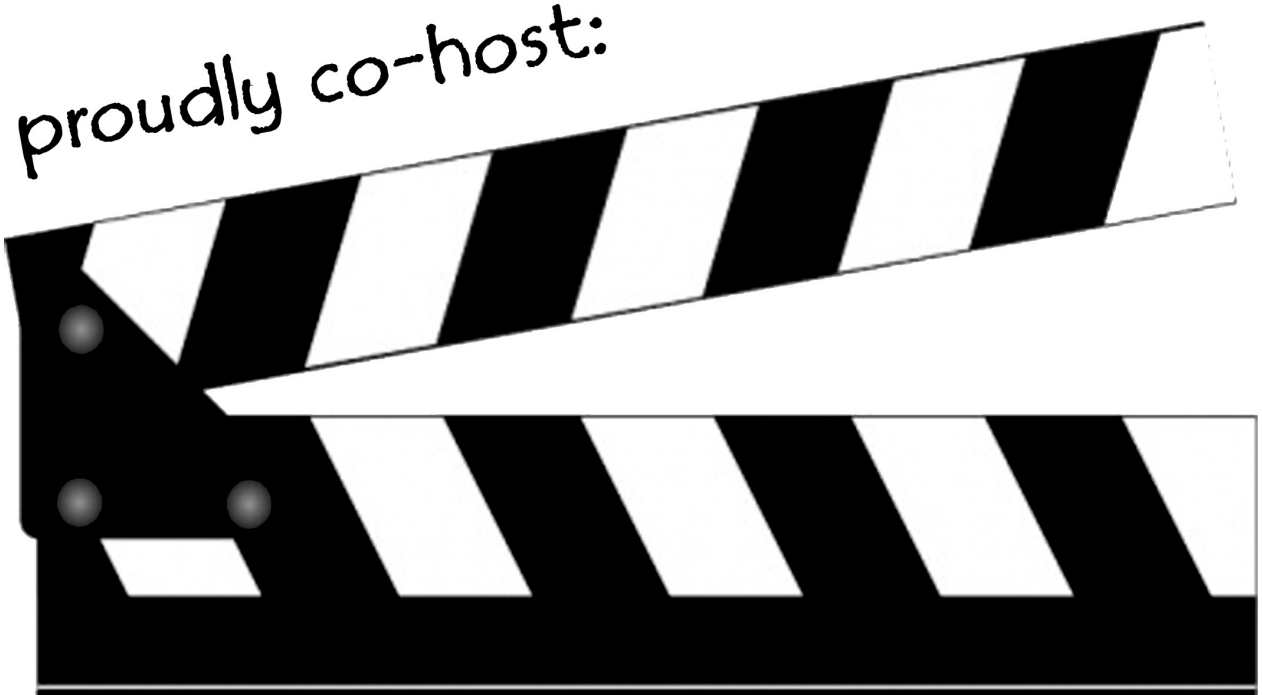


Movie Night Social

CVS Lounge
March 22, 6PM-9PM

DIAGNOSIS AND MANAGEMENT OF BIPOLAR DISORDER IN CHILDREN AND ADOLESCENTS BY: MARIE HUANG

The amphitheater at Nassau University Medical Center fills up slowly as Dr. Alan Jay Cohen, a psychiatrist from Oakland, California, makes his way up to the podium to lead a talk about bipolar disorder, specifically differentiating between its presentations in adults versus in developing children.

Among nonprofessionals, bipolar disorder is simply a psychiatric disorder characterized by drastic changes of the mood or "mood swings." The infamous symptoms of rapid cycling between mania and depression, when viewed in an adult, automatically give physicians and the layperson alike the impression that the patient is bipolar. Oftentimes, this becomes the final diagnosis, and the patient takes a mood stabilizer, like lithium, to modify the reuptake of certain neurotransmitters (causing this constant flux in personality).

However, despite popular belief, bipolar disorder is not as easy to diagnose and treat. Other comorbidities often exist alongside, and, like any other disorder or disease, need to meet criteria for diagnosis. It is important to note that the disorder even shares many of the same features as attention-deficit/hyperactivity disorder (ADHD); so, it is essential that psychiatrists perform a differential diagnosis to rule out, or in, alternative personality disorders.

With the publication of the text revision for DSM-IV in 2000, one would expect it to include clear-cut criteria for the diagnosis of mania in children and adolescents. Come DSM-V (expected release is later this year), it is likely that the criteria will still not be included. So, could we apply same adult criteria to children?

Dr. Cohen comments that the characteristics of manic episodes seen in adults may vary widely and even be absent in children and adolescents.

In adults, the disorder has conveniently numbered subtypes, known as Bipolar Disorder I, Bipolar Disorder II, and Bipolar Disorder Not Otherwise Specified (NOS). "Bipolar Disorder I" is known to contain a flux of mixed and manic episodes, where depression may be absent. Bipolar Disorder II presents with a constant cycling between hypomania and depression, where mania may be absent. Bipolar Disorder NOS is a category in which most pediatric patients fall in because they may not always present with the same symptoms that make it easy to categorize them into the other subtypes (more suitable for adults). This subtype is a "subthreshold bipolar disorder," and requires further mood monitoring.

As mentioned, without formal criteria for mania in children, pediatric psychiatrists utilize the same benchmarks for adults. They somehow tweak these for their young patients. For adults, a manic episode, by definition, is a distinct period of abnormality, where the patient is in "a persistently elevated or irritable mood that *lasts at least a week* or any duration if hospitalization is necessary." This elevated mood is "silly" because the patient will appear very jubilant, despite bad news and incidents (which do not typically call for excitement or happiness). If the patient meets three of more of the following symptoms, a diagnosis for mania is proper: inflated self-esteem/grandiosity, decreased need for sleep, distractibility, pressure to keep talking, racing thoughts, excessive involvement in pleasurable activity, and/or increased goal-directed productivity.

One should not confuse manic episodes with those of hypomania, which happens to share many of the same characteristics but with decreased severity. In hypomania, the criteria for adults focus mainly on the duration of the episode and not so much on its mood. It is a distinct period of persistently elevated or irritable mood *lasting at least 4 days*. Symptoms are very similar to those of a manic episode, but are not "serious enough" to require hospital admission. Here, the

euphoric mood does not necessarily interfere with daily performance or productivity. In fact, it may drastically increase goal-directed productivity and focus, which the patient will most likely see as a benefit. As time goes on and the patient is continually hypomanic, hypomania may transform into mania, where racing thoughts suddenly become too much to handle.

On the opposite side of the spectrum lies the major depressive episodes, specifically defined as distinct periods of depression where the patient is "down in the dumps" most of the day and nearly every day. A firm diagnosis of this episode in adults must meet five or more symptoms listed in DSM-IV over a two-week period. These symptoms are, of course, popularly associated with major depressive disorder, and include fatigue, significant weight loss (due to loss of appetite), feelings of guilt and worthlessness, insomnia, loss of interest in pastimes, and suicidal ideations.

Dr. Cohen mentions that many children may not display the common signs of depression, but, instead, exhibit heavily irritable moods with no cause. It is vital not to jump to conclusions to categorize mood episodes, especially the major depressive. Always ask the patient what exactly provoked them to determine whether the child/adolescent (or adult) has a legitimate reason to be dwelling in that mood. Do not assume that the patient has bipolar disorder because he/she has apparent mood swings. Always access the flipside, determine what type of episode the patient cycles between, and determine whether there is a reason for the changes. Doing so may prevent erroneous diagnoses and unnecessary treatment.

In children, causeless, frequent mood changes are the "pediatric bipolar pattern." Although youngsters who exhibit this pattern have bipolar disorder, they do not exactly meet the criteria for manic/hypomanic/depressive episodes, and do not present with distinct mood swings. Therefore, many are under the Bipolar Disorder NOS subtype. As previously mentioned, it is important that the psychiatrist check for other possible comorbidities and clearly differentiate between symptoms of ADHD and bipolar disorder. Both, ADHD and bipolar patients may display irritability, hyperactivity, and distractibility.

To diagnose bipolar disorder, there are two sets of cardinal symptoms to note. Cardinal symptoms I include extreme mood liability, grandiose behaviors, and mania. Parents often feel as if they are "tiptoeing around their own house" or "walking on egg shells" when it comes to trying not to set off the belligerent and irritable moods of their children. Cardinal symptoms II include sleep disturbances and often-dangerous thrill-seeking behavior.

In order to differentiate between the subtypes and ADHD, parents ought to keep a diary to chart the moods of their child. Tools that also aid in diagnosis involve clinical assessment components. These include patient/parent interviews, school observations, and mood rating scales. The acronym, FIND, which stands for Frequency (How often?), Intensity (How strongly?), Number (How much?), and Duration (How long?), will allow the psychiatrist to obtain a more complete picture of the disorder as it pertains to the child. Like every disease, family history may play a significant role and needs consideration.

Mainstay treatments of bipolar disorder usually include one or two mood stabilizers and a second-generation antipsychotic (with or without the presence of psychosis). Briefly, useful mood stabilizers include lithium, topiramate, lamotrigine, gabapentin, and oxcarbazepine. Atypical antipsychotics, with some evidence in the management of the disorder, include olanzapine, risperidone, and clozapine. Although antipsychotics decrease aggressiveness and agitation, they have sedating properties and may cognitively impair the patient, which proves to be a huge disadvantage in children. There have been no placebo-controlled trials to determine an optimal treatment plan, most likely due to ethical violations

that are associated with simply giving a placebo to a child who is quite literally "out of his mind." Despite promising results, it is common to witness the relapse of bipolar symptoms in a patient who had once been mood stabilized by medication. The fast physiological development of children and adolescents explains these high rates of relapse. Regardless, family support has a positive effect on the child's condition while these medications take four to eight months to show maximum effect.

Although DSM-IV does not paint a full picture of bipolar disorder in children and adolescents, many psychiatrists utilize other criteria that have been put together to set a suitable benchmark for diagnosis in youngsters.

In conclusion, as with everything else in the medical field, bipolar disorder requires case-by-case assessment. It may present itself very differently in children as opposed to adults, and by close mood monitoring and an eye for key symptoms, one can properly diagnose this disorder in children. This leads to proper management and treatment of, what is undoubtedly, a very complicated disease state.

SOURCES:

1. American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders: DSM-IV-TR. Washington, DC: Author.
2. Leibenluft, Ellen. (2008). Pediatric Bipolar Disorder. FOCUS: The Journal of Lifelong Learning in Psychiatry, Volume 6, 331-347.
3. The Balanced Mind Foundation. (Updated July 18, 2011). About Pediatric Bipolar Disorder. Retrieved March 10, 2012, from http://www.thebalancedmind.org/learn/library/about-pediatric-bipolar-disorder.

Image Source: http://i.ehow.co.uk/images/a04/qa/9h/name-comedy-tragedy-masks-800X800.jpg

sixth year pharmacy

Formal

Chelsea Piers
Sunset Terrace

May 8th

8pm - 12am

appetizers, buffet,
& open bar

Meet Jason, Khilna, Mohammad

tickets @ cvs lounge:

3/16 @ 1:50 pm
3/19 @ 10:40 am
3/20 @ 1:50 pm
3/22 @ 12:10 pm

Primary contact: jasonmlee88@gmail.com

$90 per person

cash -or- checks made
out to "cash"

STUDENT PHARMACIST STAR OF THE MONTH: PRANEETA NAGRAJ BY: MARIE HUANG

Each month, the Rho Chi Post has the wonderful opportunity to sit down with an inspiring leader among the student pharmacists here at St. John's University College of Pharmacy and Allied Health Professions – someone who is not afraid to stand apart from the crowd and can be the change he or she wants to see in the world. This March, Praneeta Nagraj, a 3rd year PharmD candidate and current captain of the Raaz dance team, speaks to us about APhA-ASP events, her extracurricular activities, and experiences in Rome.

Q: Surprisingly, this is the first time that we sit down with a *current* executive board member of our APhA-ASP chapter! There have been a good number of students uncertain of what APhA-ASP is out to accomplish. Please tell us, what are the organization's plans? What is your involvement? How can students benefit by joining?

A: This year, APhA-ASP is working towards catering to and refocusing on the students' needs. At our first general body meeting of the semester, we received excellent feedback from our members about what they wished to see. This semester, we do have a lot in store for the students! Let me give you a quick update on all things APhA-ASP: On Thursday, March 15, we have our "Meet the Candidates" session; it is an even to elect next year's APhA-ASP executive board. Around the end of March and the beginning of April, we will again collaborate with the debate team to put forth a discussion on a particularly pressing issue (for student pharmacists, pharmacists, and the general public), so keep a look out for an invitation! As we speak, I am working on the finer details. In April, for the first time ever, in support of the American Heart Association, we are expanding our Operation Heart project to a "5K walk" on campus. Moreover, just for the students to take a break from classes, we plan to host a movie night event with Rho Chi for a screening of "Limitless."

Students frequently ask about the benefits of joining APhA-ASP. Being a part of APhA-ASP helps you prepare yourself on a professional level to enter the real world of pharmacy. I find that the most tangible benefits are in participating in the patient care projects (on- and off-campus), attending conferences, networking, interacting with the faculty on a personal level, getting a 20% discount on select textbooks, and being a part of something much greater. In fact, there is a student chapter at every single college of pharmacy in the nation, and many practicing pharmacists are active members. As a member of APhA-ASP, you are also supporting your profession as a whole, especially as APhA's Political Action Committee (PAC) fights to maintain the recognized and evolved roles we have as healthcare professionals. Pharmacists can immunize, perform MTM, and can work with physicians and patients to provide CDTM.

This year, I am serving as APhA-ASP's Student Political Advocacy Network (SPAN) liaison. I keep students updated and informed, as I am the link between the national APhA and our chapter. Since this year is an election year, it provides us greater reasons for looking forward to this semester's debate

Q: I heard Albany Day is now on May 15 (for those who are interested in lobbying for bills, like the extension of the immunization clause)! For someone who became involved in a good variety of clubs/ organizations earlier than others did, what can you say about the importance of building your curriculum vitae (CV)? What other extracurricular activities are you participating in, on- and off-campus?

A: Yes, Albany Day is now officially on May 15! It is a GREAT way for all student pharmacists get involved and be the voices supporting our profession. I think that it is important and essential for everyone to be involved in an activity. When you build your CV by joining honor societies, community service, professional associations, rotation/ externship experience, or even work experience, you are also developing yourself. For me, it honestly is not strictly about building my CV, but about developing myself professionally and expanding my abilities so that I continue to grow, learn, and open all kinds of doors for my future.

Some organizations and extracurricular activities that I have been involved in are APhA-ASP (SPAN Liaison), Raaz (Captain/President of the dance team), Women in Leadership, the Curriculum and Educational Policy in our College of Pharmacy and Allied Health Professions (student representative / committee member), ISSO, SGI (general member), and Student Ambassadors. I also volunteer my time for various community service activities.

Q: It certainly is not easy making your way from, say, a general member to holding a top position of leadership of an organization. Some students may find that leap intimidating, and sometimes feel as if they do not have "what it takes" to direct the group or cannot find that time apart from studying. As Captain of the Raaz dance team, how do you manage your time, as well as actually find the courage to take that jump to assume a completely new set of responsibilities?

A: I definitely hear that a lot! What it comes down to is managing your time well, planning ahead of the game, and staying organized. The process involves learning and growing. Things flow easier as you understand what works best for you, how you work, and how you envision your future role(s). I have definitely learned how to better prioritize! [*Laughs*]

Q: What do you hope to achieve in the future? What are your short-term and long-term goals, both career-related and non-career-related?

A: Ah, that is such a hard question to answer! I feel like the future has so many undiscovered opportunities and experiences, but I hope to make a difference somewhere and in a life of another. I do not exactly know the field of pharmacy that I see myself in yet and am keeping my options very much open. This summer, for one month, I hope to work at a pharmacy in Africa. I will also continue working at a local CVS/Pharmacy.

Q: Wow, you are working in a pharmacy over the summer in Africa… How did you manage to hear about this opportunity, and what do you expect to learn from it?

A: I randomly stumbled upon this volunteer internship, and I am keeping my fingers crossed so that I can actually go! (I totally have my fingers crossed right now). If things do work out and I am able to go, I hope to obtain a greater understanding of how healthcare works in Ghana, as well as the healthcare needs of people in that area. I would like to interact with many patients to improve some of my skills (as a part of my ongoing quest to become a better future pharmacist and healthcare practitioner).

Q: Within the last five years, what makes you most proud?

A: Five years ago, I was a sophomore in high school, involved in various extracurricular activities like basketball, theatre, and volunteer service. If you asked me back then where I would be in five years, I would have no idea. My proudest achievement has been gaining the necessary experiences that have helped me to invest in my future.

Q: I am aware that you participated in last year's study abroad program for second year students! If you were to teleport to one city abroad right now, where would it

be? Why would you go there? Do you have any amazing experiences to share with freshmen?

A: Right now, it would have to be Roma! I love the people, and the weather is awesome over there right now. I totally recommend going abroad, if you can! The whole experience is amazing because you learn so much more than you can possibly imagine from the experience. It is just indescribable. I am so glad that our college fits it into our program. Definitely take advantage of it!

Q: Thank you so much for taking the time to have this interview! Do you have any last words or tidbits of advice for your fellow student pharmacists?

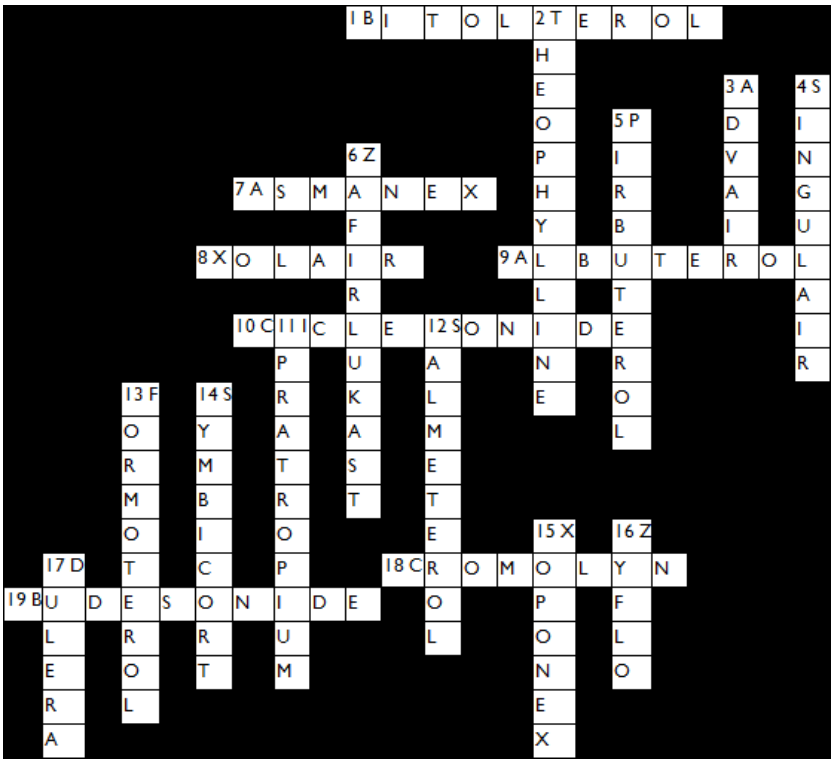
A: Thanks so much for taking the time out to interview me! Here is a challenge: Take yourself out of your comfort zone, at least once this week. You will learn something new about yourself. As for advice, pharmacy school is difficult, but hang-in there when the going gets tough. What is it that makes it all okay at the end of the day? What excites you most about becoming a future pharmacist? Stay involved with the pharmacy profession in some way or another, and keep using it as a motivator throughout school, especially as you enter the tough courses ahead! Find your passion and go after it!

If you have any additional questions for Ms. Nagraj, you may contact her at
praneeta.nagraj09@stjohns.edu

Do you know an influential colleague with extraordinary accomplishments?

Tell us at rhochis@gmail.com!

PUZZLE: CROSSWORD (SOLUTION) BY: MAHDIEH DANESH YAZDI



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Rho Chi & Phi Lambda Sigma

2012

st. john's university

friday, april 13 2012

PUZZLE: WORD SEARCH BY: MARIE HUANG

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FIND THE FOLLOWING WORDS:

GABAPENTIN
HALOPERIDOL
FLUOXETINE
BUSPIRONE
LITHIUM
OLANZAPINE
LORAZEPAM
DONEPEZIL
CARBIDOPA
LAMOTRIGINE

NOTICE A THEME?

THE RHO CHI POST EDITORIAL TEAM

My name is Mohammad A. Rattu, and I am a 6th year PharmD candidate. I have had profound experiences with media-related positions in pharmacy organizations at our university, and continue to support the utilization of technology to further our profession. As the current Editor-in-Chief of Rho Chi Post, I hope to instill motivation and leadership in our student body. Feel free to get in touch with me at: mohammad.rattu06@stjohns.edu

My name is Mahdieh Danesh Yazdi, and I am a 5th year PharmD candidate. I like to stay current with all the changes in our profession, both legal and clinical. I hope to keep you informed with all that I learn. Please enjoy Rho Chi Post, and provide us detailed feedback so that we may improve our newsletter. If you have any questions or concerns, you can reach me at: mahdieh.daneshyazdi07@stjohns.edu

My name is Marie Huang, and I am a 5th year PharmD candidate. I am in a continuous process of self-definition, and constantly testing the boundaries of this world. I enjoy channeling my inspiration through words and photographs. As a student editor and a witness to an evolving profession, I look forward to keeping you updated! Who knows where we will be tomorrow? You can reach me at: mary.huang07@stjohns.edu

My name is Ebey P. Soman, and I am a 5th year PharmD candidate. I enjoy writing very opinionated articles, and am excited to be an editor of Rho Chi Post. I encourage all readers of our newsletter (students, faculty, professionals) to respond with their own literary pieces. I look forward to hearing from you, and welcome your comments and constructive criticisms: ebey.soman07@stjohns.edu

My name is Neal Shah, and I am a 5th year PharmD candidate. I frequently assist several professors on campus with their research. My goal is to provide my fellow students with research-based information that correlates with clinical pharmacotherapy. If you have any topics of interest or comments on currently-published articles, please do not hesitate to email me at: neal.shah07@stjohns.edu

My name is Shannon Tellier and I'm a 5th year PharmD candidate. I believe it is extremely important for pharmacy students and everyone else in the profession to stay informed about current pharmacy events. The Rho Chi Post is a great way to stay informed and to continue learning about pharmacy information that is pertinent to our campus and the nation. Feel free to contact me at: shannon.tellier07@stjohns.edu

My name is Mohamed Dungersi, and I am a 5th year PharmD candidate. I am excited to continue the hard work put into this newsletter, especially since its inception during my term as president last year. I am enthusiastic about promoting the pharmacy profession; what better way to do this than by being a part of the Rho Chi Post? Should you have any comments or concerns, feel free to contact me at: mohamedjameel.dungersi07@stjohns.edu

? Attention!

We are looking for creative and motivated students in the 4th and 5th years of pharmacy school. If you are interested in becoming a full-time student editor or would like more information about the responsibilities that the position entails, please contact us via email: **rhochis@gmail.com**

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.

CURRENT EXECUTIVE BOARD

Bethsy, Albana, Yining, Elizabeth, and Aleena at the 2012 Induction Ceremony

President: **Yining Shao**
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Media Relations Coordinator: **Mohammad A. Rattu**
Faculty Advisor: **S. William Zito, PhD**

THE RHO CHI POST

MISSION

The Rho Chi Post 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 is the most exciting and creative student-operated newsletter within the St. John's University College of Pharmacy and Allied Health Professions. Our newsletter is known for its relatable and useful content. Our editorial team members are recognized for their excellence and professionalism. The Rho Chi Post sets the stage for the future of student-run 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

UPCOMING EVENTS

Mar. 8th: NYCSHP Pharmacy Student Roundtable Session
(NYU, 6pm-8:30pm)

Mar. 9th-12th: APhA2012 Annual Meeting and Exposition
(New Orleans, LA)

Mar. 15th: Rho Chi & APhA-ASP Supporting: Community Blood Drive
(DAC, 10am-7pm)

Mar. 15th: Meet the Candidates: APhA-ASP Elections
(SUL B-14, 1:50pm-3:15pm)

Mar. 15th: Phi Lambda Sigma General Body Meeting
(St. Al. B75 1:50pm-3:15pm)

Mar. 19th: Sixth Year Students Only: Town Hall Meeting
(MAR AUD, 1:50pm-3:15pm)

Mar. 22nd: Alumni Insider View
(HERC, 1:50pm-3:15pm)

Mar. 22nd: Movie Night Social
(CVS Lounge, 6pm-9pm)

Mar. 29th: Pharmacy Career Day
(Carnesecca Arena, 10am-3pm)

Mar. 29th: The Coffeehouse Chats
(CVS Lounge, 5pm-7pm)

Promote your event through us!

Submit the name, location, date, and time of your venue to our editors at: rhochis@gmail.com

We welcome all pharmacy-related advertisements