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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

RHO Rx CHI post

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RHO CHI POST: TEAM MEMBERS

@ 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. 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.

@ Davidta Brown

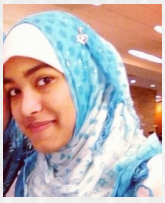
5th Year, STJ; Copy Editor [Content-Focused]

My two great loves are innovative science and quality writing; 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.

@ Tamara Yunusova

5th Year, STJ; Copy Editor [Content-Focused]

I enjoy articulating information in a captivating and insightful way. I hope to make this publication more informative, student-friendly, and innovative.



@ 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.

@ Sang Hyo Kim

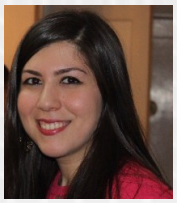
4th Year, STJ; Section Editor: Puzzles

Advancing technology and medicine, as well as prolonging the lifespan and improving quality of life, have increased the geriatric population. Pharmaceutical industries and healthcare systems persistently work to find solutions to changing demands and new problems of the society. I wish to learn, educate, and prepare myself and others for the future.

@ 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.



@ Svetlana Akbasheva

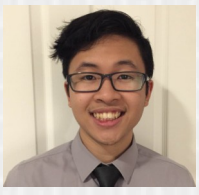
6th Year, STJ; Section Editor: Clinical

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.

@ 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.



@ 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

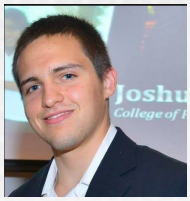
The Rho Chi Post is a refreshing outlook on our profession. I am thrilled and grateful to be able to work with the other members in continuing its success, and hopefully to bring greater attention to it, which it deserves.

RHO CHI POST: TEAM MEMBERS

@ 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!

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, visit:

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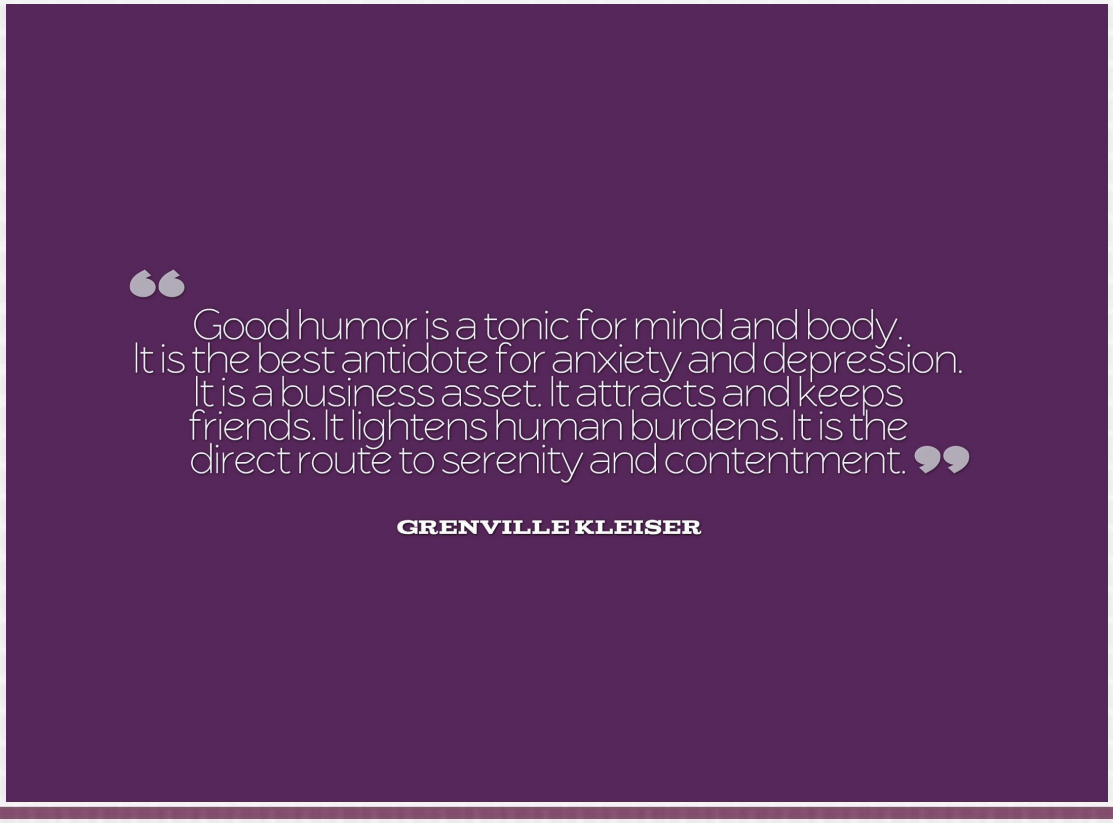
By: Nicollette Pacheco, Staff Editor [Graphics-focused]



Antipsychotic-Induced Obsessive-Compulsive Disorder

By: Cyril Collantes, PharmD Candidate c/o 2016

Obsessive-Compulsive Disorder (OCD) is characterized by two predominant psychiatric components: obsession and compulsion. Obsession refers to the uncontrolled and recurrent thoughts, impulses, or images that can provoke significant anxiety, whereas compulsions are repetitive behaviors or rituals in response to the obsessive thought(s). OCD is clinically significant if the obsessive-compulsive drive becomes time consuming (i.e. the patient is wasting about an hour a day with obsessive-compulsive thoughts). Unlike in schizophrenia, OCD patients have a relatively better insight into the nature of their obsessions and they are able to distinguish the obsessions / compulsions as unreasonable and excessive. However, the anxious feeling to succumb to the obsessive behavior may become unbearable until the patient replies with a compulsive action. One of the proposed mechanisms-of-disease includes the role of neurotransmitters (e.g. serotonin, dopamine). OCD is hypothesized to involve a dysfunction in the neuronal loop from the frontal cortex (which contains most of the dopamine-sensitive neurons) to the thalamus (involved in relaying sensory and motor signals) and back, thus inhibiting a sense of erroneous perception in a specific situation. In addition, serotonin agonists and dopamine antagonists have been hypothesized to exacerbate OCD symptom severity.[1,2]

OCD usually arises during childhood or teen years, and symptoms may be intermittent. Epidemiologic studies have estimated a prevalence of 2% in the general population, and some data suggests that OCD may be genetic.[3,4] However, in a general psychiatric inpatient setting, up to 4% of patients exhibited obsessive-compulsive symptoms (OCS). Further evaluation implied that it might have been drug-induced, perhaps by antipsychotic medication.[5]

Antipsychotics are first-line agents for a variety of psychiatric disorders, including schizophrenia. As antipsychotic medications are primarily dopamine receptor antagonists, they may exacerbate OCD. Although typical (or first-generation) antipsychotics have higher dopamine receptor selectivity, antipsychotic-induced OCD is more commonly seen in patients taking atypical (second-generation) antipsychotics (e.g. clozapine, olanzapine, risperidone).[2] In one study, clozapine-treated schizophrenia patients had an estimated de novo OCD incidence of 20 to 28% nationwide. Exacerbations of existing OCD symptoms occurred in 18% of the population.[6] The prevalence of olanzapine-induced OCD ranged from 11 to 20%. Risperidone had a 3.4% de novo OCD prevalence; however, it accounted for about 33% of antipsychotic-induced OCD in a separate study.[7] Studies of quetiapine, ziprasidone, and aripiprazole have yet to find a meaningful connection to OCD.[2,8]

Initially, OCS were difficult to differentiate from a patient's positive schizophrenic symptoms (e.g. delusions). At times, as patients may exaggerate their need to comply with their compulsive response, it may be interpreted as responding to a delusional schizophrenic belief. As a result, OCD was neither screened for nor discovered in patients. Despite the similarities between schizophrenic delusions and obsessive-compulsive behaviors, they can be differentiated based on their degree of conviction, thought content, and perceived thought origin. Generally, patients with OCD have some insight into their obsessions and know that they have an internal issue. These patients are also more likely to admit that their thoughts are rather exaggerated (though realistic). However, delusional patients believe their impulses have an external origin, and these patients are highly convinced that their illness is not responsible for their bizarre thoughts.[2] In DSM-IV, using a strict definition of OCD, there was an incidence of 3%, but when the criteria was relaxed to OCS, the incidence in patients with schizophrenia treated with atypical antipsychotics increased to about 21% (and 12.4% were considered antipsychotic-related).[9,10]

A study was conducted to compare antipsychotic-induced OCS in schizophrenia and OCD symptoms. Drug-induced OCS patients (n=51) were compared with OCD patients (n=130) for symptom frequencies for the 13 non-miscellaneous OCD symptoms of the Yale-Brown Obsessive-Compulsive Scale Symptom Checklist (Y-BOCS). The symptom categories accounted for 70.7% of the total variance in symptom structure between drug-induced and not drug-induced OCS. The most commonly seen factors

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were those of "forbidden thoughts" (e.g. aggression, sexual, religious, somatic obsessions; checking compulsions), which accounted for most of the variance (19.4%) and demonstrated statistical significance (in terms of intra-class correlation). Symptom prevalence of sexual thoughts, cleaning, and hoarding were most similar between the two groups. The need for symmetry, ordering, repeating, and counting was also rather common between the two groups. The similar symptomatic frequencies between antipsychotic-induced OCD and OCS suggested that the two diseases had a very similar, if not identical, underlying pathological mechanism.[11]

A possible mechanism of clozapine-induced OCD has been proposed, linking the second-generation antipsychotic's activity on dopamine and serotonin receptors to the onset of OCD. MacCabe et al. suggested that the high serotonin (5-HT2A) and dopamine (D2) receptor affinities of second-generation antipsychotics alter the balance between dopaminergic activation and serotonergic inhibition.[12] Normally, serotonergic neurons (mediated by 5-HT2A receptors) inhibit the firing of dopaminergic neurons. If this serotonin-induced inhibition of dopamine becomes overactive, then OCS may arise. Theoretically, dopamine-selective first-generation antipsychotics would have higher potential for drug-induced OCD, but the authors proposed that patients who take first-generation antipsychotics might have relatively higher dopamine receptor upregulation.[12]

As serotonin agonists and dopamine antagonists may exacerbate OCS, treatment would involve removing (or at least tapering down) the dopamine antagonist. This theory is supported by data suggesting a relationship between antipsychotic dose and OCD incidence. Case reports and series from 1990 to 2002 found a de novo incidence of OCS in 76.7% of patients who received clozapine and 69.2% in those who received risperidone. Clozapine-induced OCD has occurred with doses ranging from 125 to 800 mg/day, with slightly higher rates as the dose increased. Only eight patients in the study were taking olanzapine, but OCS were exacerbated at doses as low as 5 mg/day in a 42-year-old male patient with a prior history of OCD.[13] In six cases involving risperidone, symptoms emerged shortly after initiation of 3 mg/day or higher dosing, but the issues faded as doses were lowered or discontinued.[14] In all cases where the offending antipsychotic was removed or the dose was reduced, patients experienced a gradual remission of OCS. Other suggested solutions involved switching to an antipsychotic unassociated with OCS, but there was a lack of data to support the use of specific drugs (aside from using second-generation antipsychotics with lower incidences of OCS).[2,13] A 40-year-old female who developed de novo symptoms of OCS was switched from risperidone to olanzapine, but she did not have any symptomatic improvement until sertraline 100 mg/day was added to her regimen.[14]

Alternative OCD management is to lower intracellular serotonin concentration with an antidepressant (an established first-line treatment for OCD). Commonly used antidepressants include selective serotonin reuptake inhibitors (SSRIs; e.g. fluoxetine, sertraline, paroxetine, fluvoxamine) and tricyclic antidepressants (e.g. clomipramine). Fluoxetine was the most studied drug with mostly positive outcomes, but there are a few cases where it lacked effectiveness until the antipsychotic was discontinued.[13,17] Paroxetine showed little promise; when it was used in paranoid schizophrenic patients with olanzapine-induced OCS, obsessive-compulsive behaviors persisted despite paroxetine treatment.[18] Studies of various doses of sertraline showed preferable outcomes of OCS reduction in clozapine-, risperidone-, and olanzapine-induced OCD.[2,13,16]

As with several other psychiatric disorders, cognitive behavioral therapy (CBT) is recommended at every level of OCD therapy, either alone or as adjunct to pharmacotherapy. Benefits of CBT were first explored in a 50-year-old male who developed de novo OCD about one year after clozapine initiation. The behavioral therapy helped to attenuate the patient's symptoms over four months and it continued to maintain symptom repression at an 11-month follow-up. In another trial, six patients were initiated on CBT as an adjunct to SSRIs and all of them improved on every measure of the Y-BOCS.[15,16] Despite the small sample sizes of the studies evaluating CBT, the therapy is inexpensive with "virtually no downsides."

Antipsychotic-induced OCD is a rising concern with atypical antipsychotics. OCS can negatively affect a patient's recovery by compromising benefits, affecting compliance, and diminishing clinical prognosis overall. Although these symptoms can be reversed by lowering the dose or removing the antipsychotic, this is not always possible, as the patient's underlying psychiatric problem will reemerge without treatment. In select cases, it may be appropriate to add SSRIs to alleviate OCS. Sertraline has the most success in drug-induced OCD, albeit small sample sizes were studied. In addition, CBT is appropriate at all stages to maximize benefit and repress obsessive-compulsive urges.

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Novel Anticoagulant Approved For Use in Embolism Prevention

By: Maryam Ahmed and Lyudmila Krivovyaz, Pharm.D Candidates, c/o 2016

Each year, more than 795,000 Americans suffer from a stroke, with almost 130,000 of those resulting in death.[1] Traditionally, warfarin sodium (Coumadin®) has always been the drug of choice for treatment and prevention of clot formation. Over the last couple of years, however, newer agents have been developed that minimize some of the patient burden in regards to lab testing and dietary restrictions. Edoxaban (Savaysa®), approved January 2015, is the newest anti-coagulant indicated to reduce the risk of stroke and systemic embolism in patients with nonvalvular atrial fibrillation (NVAF), as well as for the treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE) following 5 to 10 days of initial therapy with a parenteral anticoagulant.[2]

Edoxaban is a selective factor Xa inhibitor, which is involved in the clotting cascade, and causes a reduction in thrombin generation and thrombus formation.[3] Factor Xa inhibitors have gained popularity over the conventional anti-coagulant Coumadin®, which is considered first line therapy, due to the lack of mandatory blood work required to monitor the drug's safety and efficacy. Edoxaban does not have a narrow therapeutic index like war-

farin; therefore, routine blood monitoring is not necessary. Converting from warfarin to edoxaban is simple, and can be initiated once the INR <2.5.[3]

ENGAGE AF-TIMI 48 is phase III multicenter, randomized, double-blind, double-dummy trial funded by Daiichi Sankyo Pharma, which enrolled 21,105 patients at 1,393 hospitals from 46 countries. Eligible patients were 21 years of age or older and had documented atrial fibrillation within the year prior to randomization for the study, a score of 2 or higher on the CHADS2 risk assessment, and were already going to be placed on anticoagulation therapy. The primary efficacy end point was a composite of stroke (ischemic or hemorrhagic) and systemic embolic events (SEE). This was the largest novel anti-coagulant trial conducted at the time, and it found that treatment with a high dose of edoxaban (60mg) was actually superior to treatment with Coumadin® in terms of bleeding risk and non-inferior in preventing strokes and systemic embolism events. Hemorrhagic strokes were lower in both doses (30mg and 60mg), as well as cardiovascular death being lower with edoxaban as well.[2] After a median follow-up of 2.8 years, the annual rate of primary outcome (stroke and/or SEE) for patients in the high-dose edoxaban group was 1.18% (hazard ratio [HR] 0.79, 97.5% CI 0.63–0.99; P<0.001 for noninferiority, P=0.02 for superiority), and for patients in the low-dose edoxaban group was 1.61% (HR 1.07, 97.5% CI 0.87–1.31; P=0.005 for noninferiority, P=0.44 for superiority).

For NVAF, the recommended dose of edoxaban is 60 mg once daily in patients with a creatinine clearance (CrCl) of 50 to 95 mL/min, and for a CrCl of 15 to 50 mL/min, the dose should be reduced to 30 mg daily. For the treatment of DVT and PE, the recommended dose is 60mg once daily, and for CrCl of 15 to 50 mL/min or body weight less than or equal to 60 kg, it should again be reduced to 30mg and one can refer to adult dosing for the geriatric population.[3]

Several other agents share the same mechanism and indications with edoxaban, but what distinguishes it from the others is the benefit it offers for patients with poor renal function. Both apixaban and rivaroxaban, also novel Xa inhibitors, are not indicated for a CrCl below 30 mL/min, whereas edoxaban has a dosing adjustment particularly for renal patients needing anticoagulation.4 The only caveat to the dosing of edoxaban is that it holds a black box warning against usage in NVAF patients with a CrCl greater than 95 mL/min, in which case other agents should be chosen. Premature discontinuation (without alternative anti-coagulation) is also contraindicated, as it increases the chance of ischemic events.

The most common side effect of edoxaban is hemorrhage, therefore it should not be used in patients with active pathological bleeding.[3,5] There is no antidote for edoxaban or any of the other novel anticoagulants in its class. This, of course, is the major advantage warfarin has over the Factor Xa inhibitors, as vitamin K, warfarin's antidote, is readily available in emergencies to reverse warfarin's blood thinning effects. Edoxaban is definitely a great addition to selective factor Xa inhibitors as it offers a huge benefit to clinicians, namely in safely treating renal patients needing anticoagulation. Being that it is brand new, it will be interesting to see how frequently physicians choose Savaysa® and what other benefits it may provide.

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Dabigatran Antidote Provides New Option for Targeted Anticoagulant Reversal

By: Svetlana Akbasheva, Staff Editor

Dabigatran etexilate mesylate (Pradaxa®) is an oral anticoagulant that functions as a direct thrombin inhibitor. Like other anticoagulants, this medication carries the risk of serious bleeding and must be stopped temporarily before any surgical procedures, with the length of time depending on a patient's creatinine clearance and invasiveness of the surgery.[1] Until recently, there was no specific reversal agent for patients who experienced bleeding or needed emergency surgery while on dabigatran therapy. Now, Boehringer Ingelheim Pharmaceuticals, the manufacturer of Pradaxa®, has created an antidote that is capable of neutralizing the anticoagulant effect of dabigatran. A humanized monoclonal antibody fragment that exclusively binds dabigatran, idarucizumab was granted Orphan Drug and Breakthrough Therapy Designation by the FDA.[2] Preliminary results from a Phase III trial published in June 2015 help elucidate the safety and efficacy of this antidote.[3]

The study of the Reversal Effects of Idarucizumab on Active Dabigatran (RE-VERSE AD) is an international, multicenter, prospective cohort study assessing the safety and efficacy of idarucizumab in patients on dabigatran who present with severe bleeding or require emergency surgery. This is an ongoing study that began in June 2014 and plans to ultimately recruit up to 300 patients. Recently, the interim data for the first 90 enrolled patients was published. The patients were divided into two groups, group A (n=51) for patients who presented with serious bleeding and group B (n=39) for those who required emergency surgery. Patients were administered a 5 gram dose of idarucizumab intravenously as 2 separate bolus infusions of 2.5 grams/50 mL no more than 15 minutes apart. The baseline patient characteristics of the study sample included a median age of 76.5, predominantly white race, and a median creatinine clearance of 58 mL/min (range 11-187 mL/min). 96% of study subjects were taking dabigatran for atrial fibrillation, and the median time since the last intake of dabigatran was 15.4 hours. The primary endpoint of the study was the maximal percentage reversal of dabigatran's anticoagulant effect within 4 hours of antidote administration. Only patients with a baseline elevated dilute thrombin time (76%) or ecarin clotting time (90%) were included in the primary efficacy analysis. Secondary endpoints that were studied included restoration of hemostasis as well as general clinical outcomes as judged by clinicians.[3]

The results of the interim data showed a median maximal percentage reversal of anticoagulation in both groups to be 100%. In group A, the dilute thrombin time normalized in 98% and ecarin clotting time normalized in 89% of patients. In group B, these numbers were 93% and 88%, respectively. Out of 35 patients in Group A in whom time to bleeding cessation could be assessed, the median time to this secondary endpoint was 11.4 hours. In Group B, intraoperative hemostasis was achieved in 92% of patients. Although there were eighteen deaths in the study population during the one-month follow-up, these deaths were not attributed to the antidote but rather to the index event or the patient's existing comorbidities. Thrombotic events also occurred in five patients, with the occurrence ranging from 2 to 26 days after idarucizumab administration; however, it is notable that the patients were not receiving anticoagulant therapy at the time of these events.[3] As this study was designed to mirror real-life clinical practice, there was no set protocol for reinitiating anticoagulant therapy in patients, so it is difficult to assess whether these patients should have been receiving anticoagulant therapy at the time of these events.

On October 16, 2015, the FDA approved idarucizumab under the brand name Praxbind®, making this the first approved reversal agent for a novel oral anticoagulant.[4] Meanwhile, Portola Pharmaceuticals is currently in the testing phase of andexanet alfa, an antidote for the factor Xa inhibitors rivaroxaban (Xarelto®) and apixaban (Eliquis®).[5] Ultimately, the development of antidotes for potentially dangerous drugs such as the anticoagulants enhances their safety profiles and is favorable for both patients and providers.

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States Expand Access to Naloxone

By: Svetlana Akbasheva, Staff Editor

Naloxone (Narcan®) is a rapid-acting, potentially life-saving drug for acute opioid overdose. An opioid antagonist, naloxone displaces opioids from their receptors and helps reverse their effects, the most dangerous of which is respiratory depression.[1] According to the Centers for Disease Control and Prevention, over 22,000 deaths in the United States were associated with overdoses of prescription opioids or heroin in 2013.[2] Although naloxone has been used for over 40 years by EMS personnel, only recently have several states expanded access to naloxone by allowing distribution by pharmacies to at-risk patients or their families.[1]

Several laws are making naloxone more easily available outside of the health care setting. Currently, 34 states (including New York) allow for community-based overdose prevention programs to distribute naloxone. In addition, 26 states (including NY) have a Good Samaritan law which protects bystanders, who administer naloxone to someone experiencing an overdose, from criminal liability.[3] While all pharmacies may fill prescriptions for naloxone, a handful of states (CA, OK, MA, WA, RI) also allow pharmacists to prescribe naloxone on their own to at-risk patients, usually along with a specific training or continuing education requirement.[4] Certain states that allow pharmacists to have collaborative practice agreements with physicians may also allow pharmacists to prescribe naloxone if it is included in the contract, though these vary on a case by case basis.[5]

Most insurance plans, including Medicaid and Medicare, will reimburse pharmacies for dispensing naloxone kits. Pharmacies are now able to order two formulations of naloxone for dispensing – the intranasal spray and the intramuscular injection. The intranasal spray kit contains two naloxone 2 mg/2 ml prefilled syringes, along with two atomizers. In an overdose situation, one half of the syringe should be sprayed into each nostril. Similarly, the intramuscular injection kit contains two naloxone 0.4 mg/ml vials and two intramuscular syringes. One milliliter of solution should be injected as one dose into a large muscle such as the upper arms, upper thighs, or outer buttocks.[6]

It is very important to counsel a patient's family members or friends who may be present during an opioid overdose on the proper steps to take in such an emergency situation. If the person in question is found barely breathing and unresponsive, the first thing to do is call 911 right away. Additional signs of an opioid overdose to look for include a very slow heartbeat, blue-tinged fingertips or lips, a pale or clammy face, and a limp body. Before administering naloxone, the most important thing to do is to support the person's breathing, ideally by ventilating with 100% oxygen if available or rescue breathing if it is not. Naloxone administration without proper ventilation could cause acute lung injury. Once the person is ventilated, either intranasal or intramuscular naloxone should be administered. The antagonist should begin working within three to five minutes, with the person developing spontaneous breathing. If the first dose of naloxone is not effective, a second dose may be administered after two to three minutes. If there is still no response, then it is likely that the person's condition is not attributable to an opioid overdose but rather to another medical condition or overdose of a non-opioid substance.

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It is also important to note that naloxone may not be effective for overdoses of buprenorphine, due to the partial agonist's high opioid receptor affinity.[1]

In patients who are opioid-dependent, higher doses of naloxone can precipitate a withdrawal syndrome, which can be extremely uncomfortable but is ultimately not life-threatening. Withdrawal symptoms generally include tachycardia, piloerection, nausea/vomiting, diarrhea, abdominal cramps, irritability, and trembling. The antagonist effect of naloxone usually lasts for 30 to 90 minutes, which will hopefully be enough time to get an overdosing patient to a healthcare facility for further care.[1] With opioid-related deaths a major problem nationwide, it is hoped that the increased availability of naloxone will allow bystanders to treat overdosing patients before it becomes too late and minimize the death toll associated with opioid overdose.

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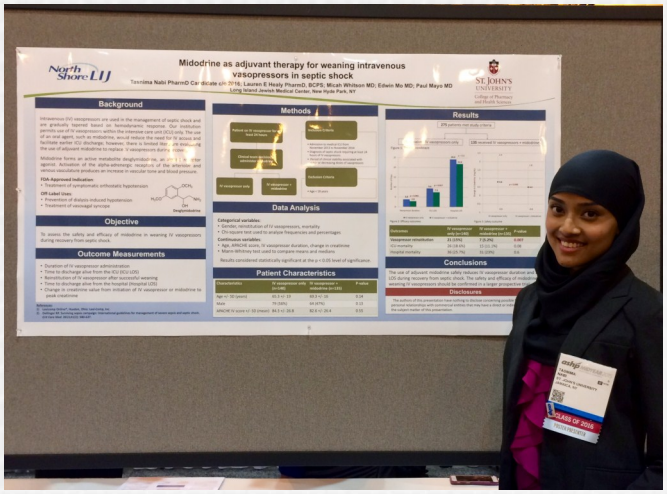
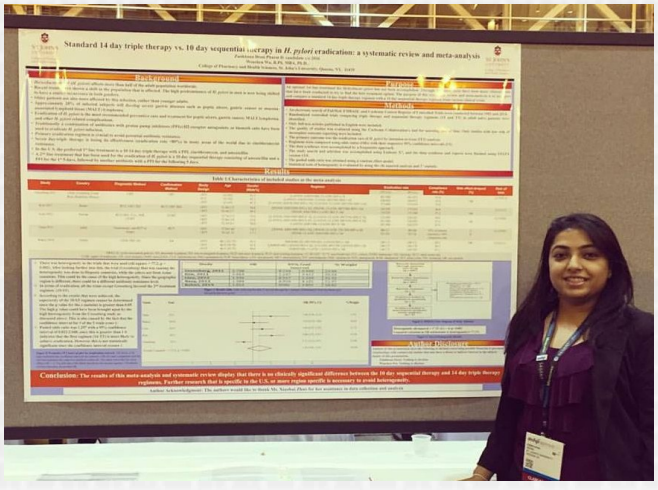


Tasnima Nabi: Midodrine as adjuvant therapy for weaning intravenous vasopressors in septic shock



Zankhana Desai: Standard 14 day triple therapy vs. 10 day sequential therapy in *H. pylori* eradication: a systematic review and meta-analysis

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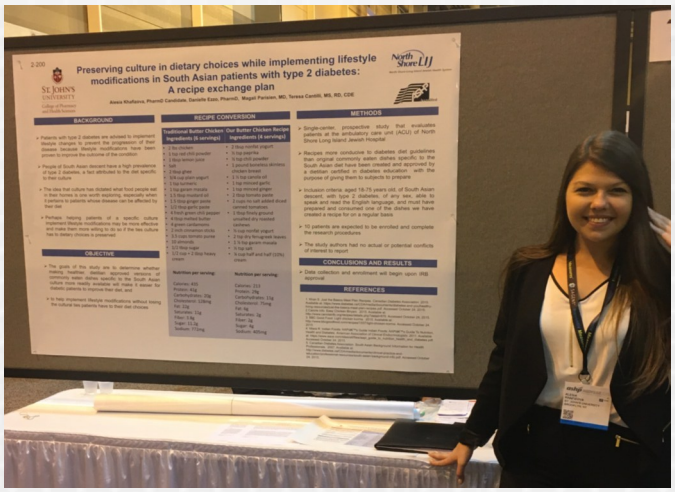
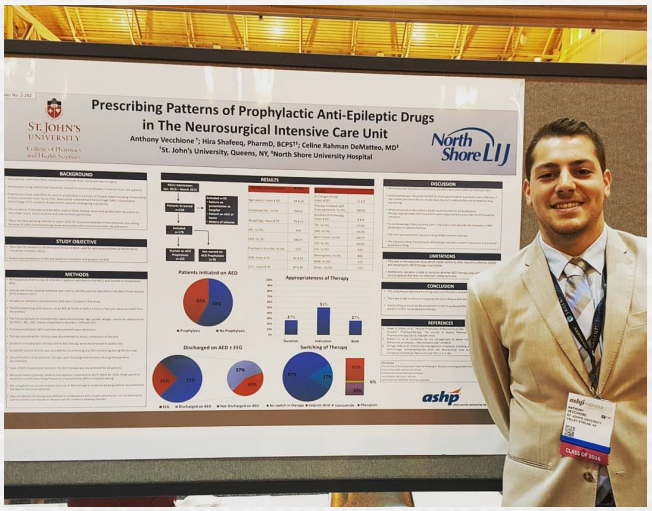
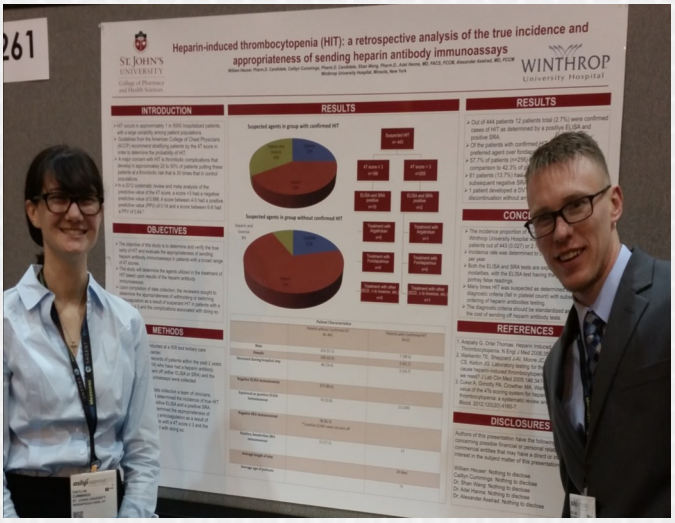


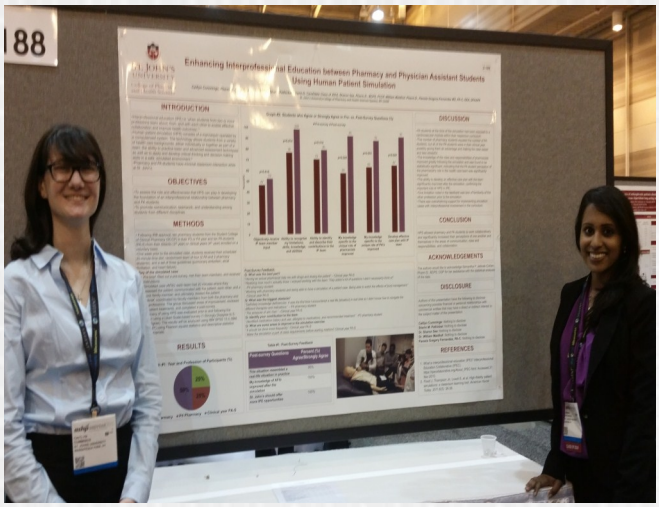
Alesia Khafizova: Preserving culture in dietary choices while implementing lifestyle modifications in South Asian patients with type 2 diabetes: A recipe exchange plan



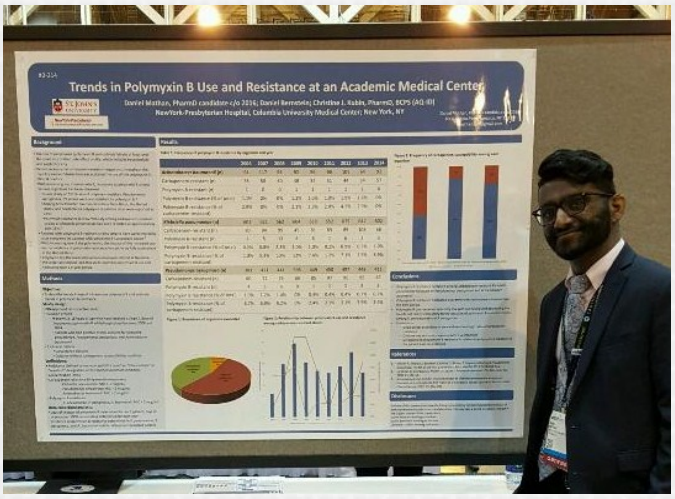
Anthony Vecchione: Prescribing Patterns of Prophylactic Anti-Epileptic Drugs in the Neurosurgical Intensive Care Unit



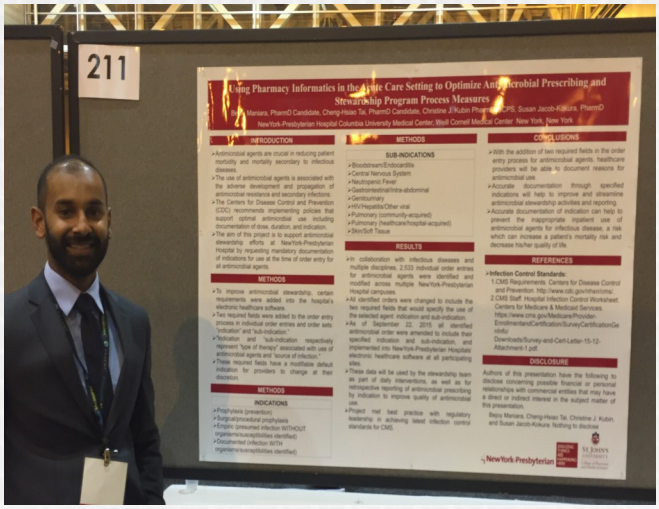
Caitlyn Cummings and William Heuser: Heparin-induced thrombocytopenia (HIT): a retrospective analysis of the true incidence and appropriateness of sending heparin antibody immunoassays



Caitlyn Cummings and Sherin Pathical: Enhancing Interprofessional Education Between Pharmacy and Physician Assistant Students Using Human Patient Simulation



Danny Mathan: Trends in Polymyxin B Use and Resistance at an Academic Medical Center



Bejoy Maniara: Using Pharmacy Informatics in the Acute Care Setting to Optimize Antimicrobial Prescribing and Stewardship Program Process Measures

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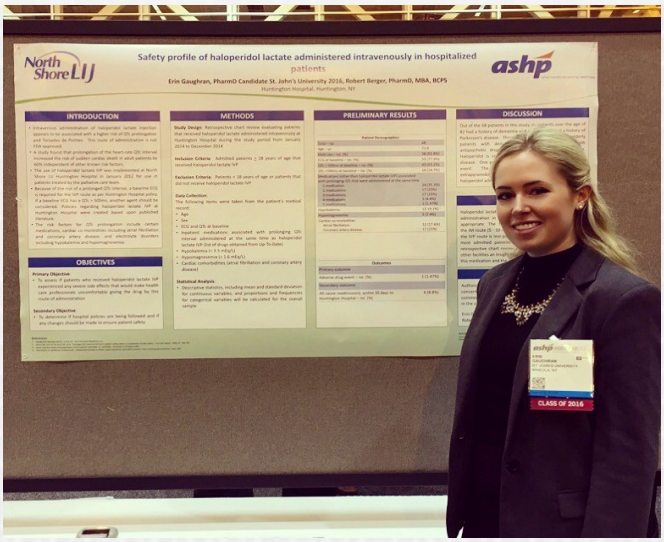
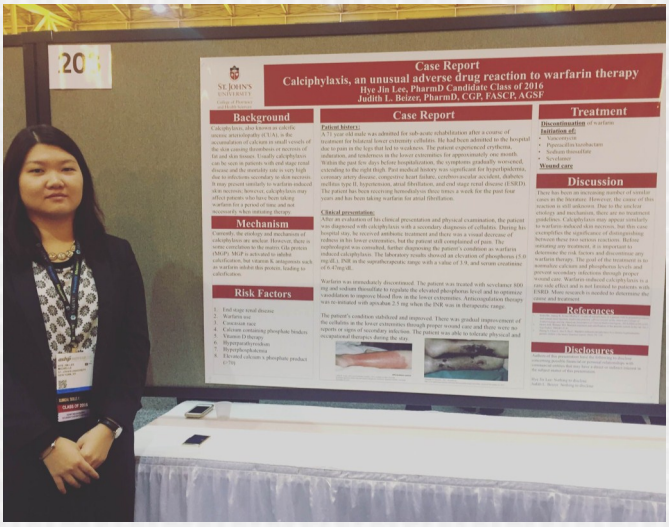
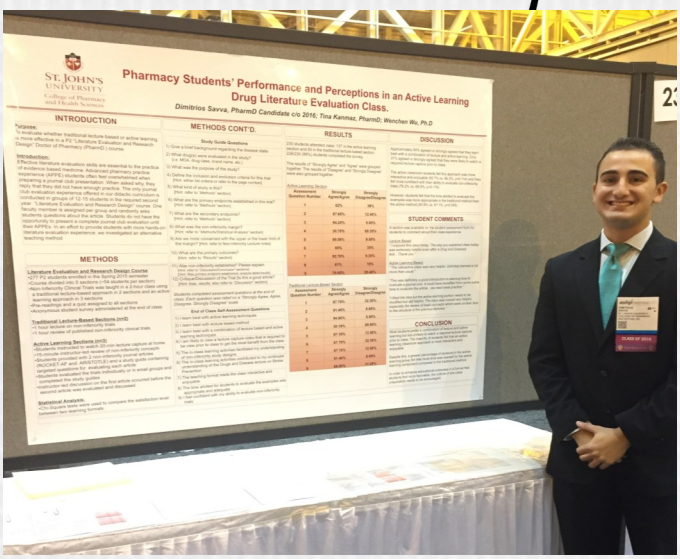


Erin Gaughran: Safety profile of haloperidol lactate administered intravenously in hospitalized patients

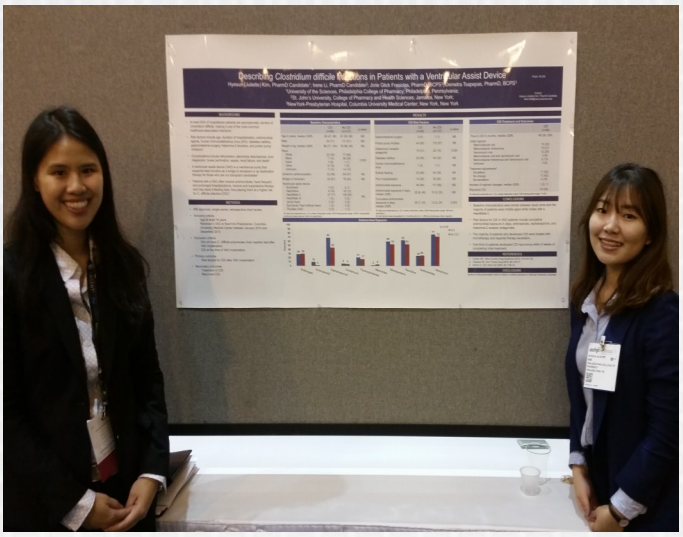


Hye Jin Lee: Case Report—Calciphylaxis, an unusual adverse drug reaction to warfarin therapy

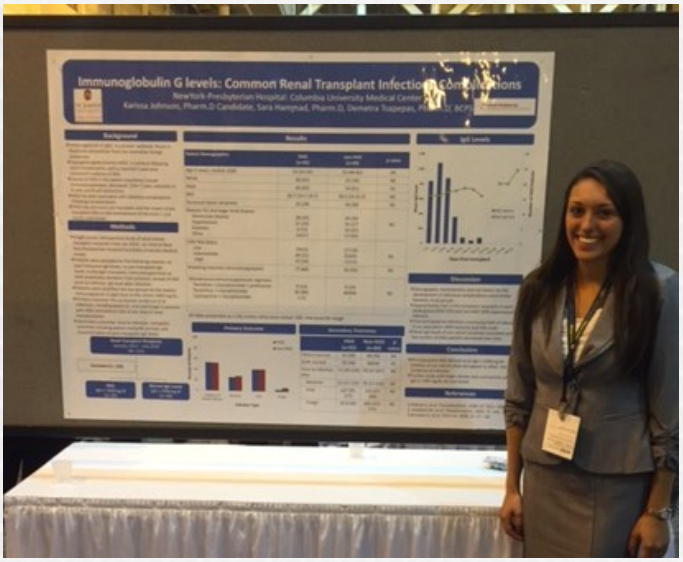
Jacqueline Chirico: Evaluating the incidence of hypoglycemia after the removal of sulfonylureas from a hospital formulary



Dimitri Savva: Pharmacy Students' Performance and Perceptions in an Active Learning Drug Literature Evaluation



Irene Li: Describing Clostridium difficile Infections in Patients with a Ventricular Assist Device



Karissa Johnson: Immunoglobulin G levels: Common Renal Transplant Infection Complications

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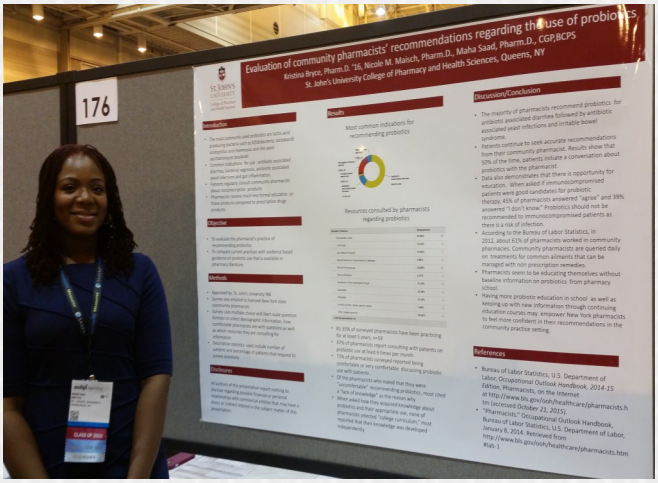
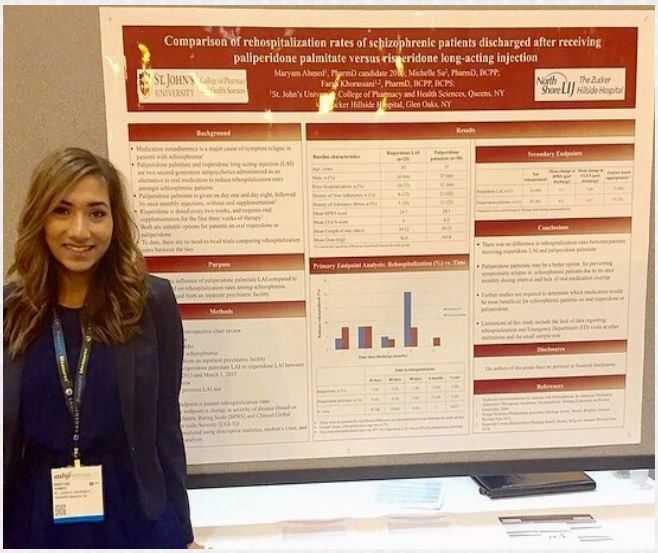
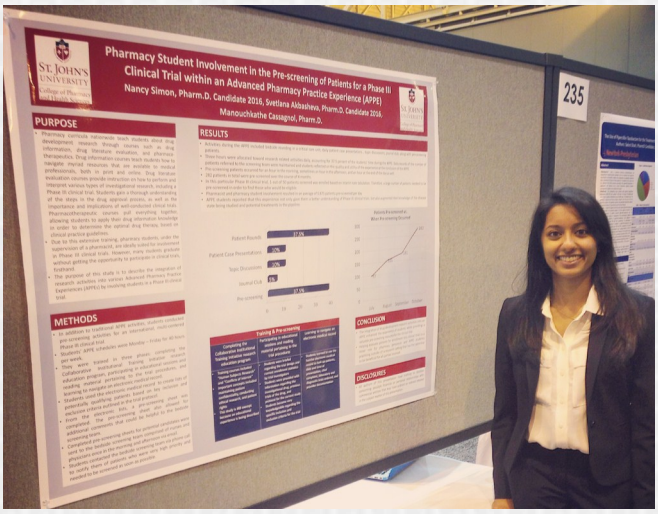


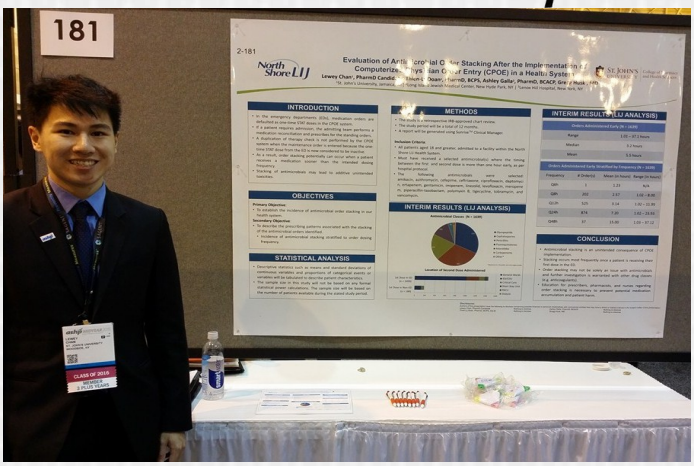
Kristina Bryce: Evaluation of community pharmacists' reccomendations regarding the use of probiotics



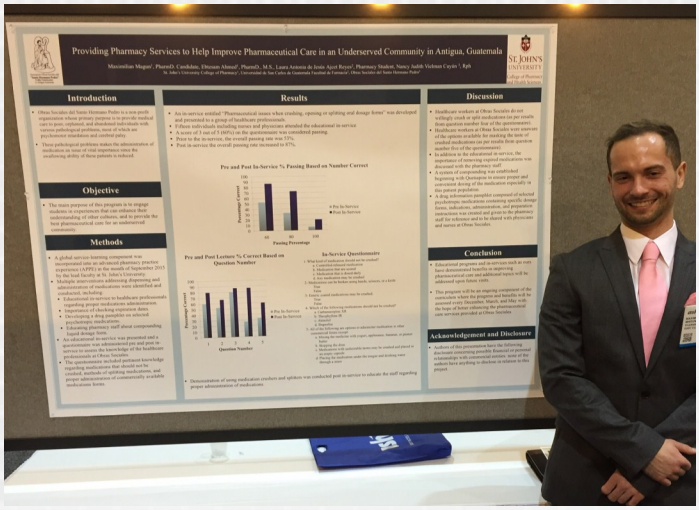
Maryam Ahmed: Comparison of rehospitalization rates of schizophrenic patients discharged after receiving paliperidone palmitate versus risperidone long-acting injection



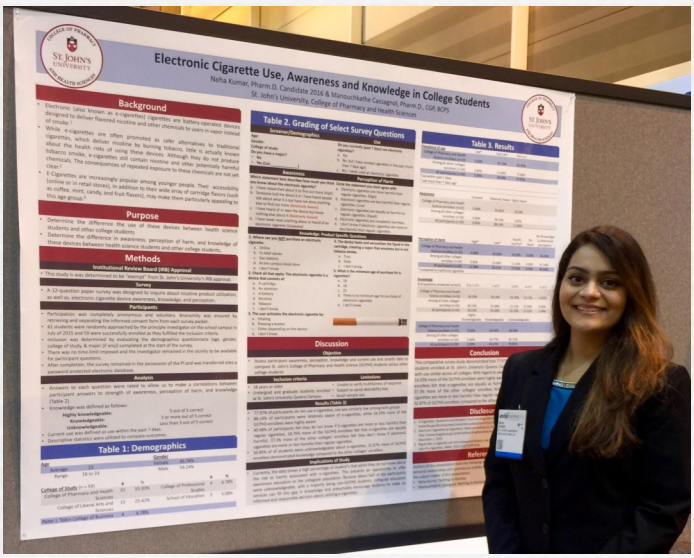
Nancy Simon: Pharmacy Student Involvement in the Pre-screening of Patients for a Phase III Clinical Trial within an Advanced Pharmacy Practice Experience (APPE)



Lewey Chan: Evaluation of Antimicrobial Order Stacking After the Implementation of Computerized Physician Order Entry (CPOE) in a Health System



Maximilian Magun: Providing Pharmacy Services to Help Improve Pharmaceutical Care in an Underserved Community in Antigua, Guatemala



Neha Kumar: Electronic Cigarette Use, Awareness, and Knowledge in College Students

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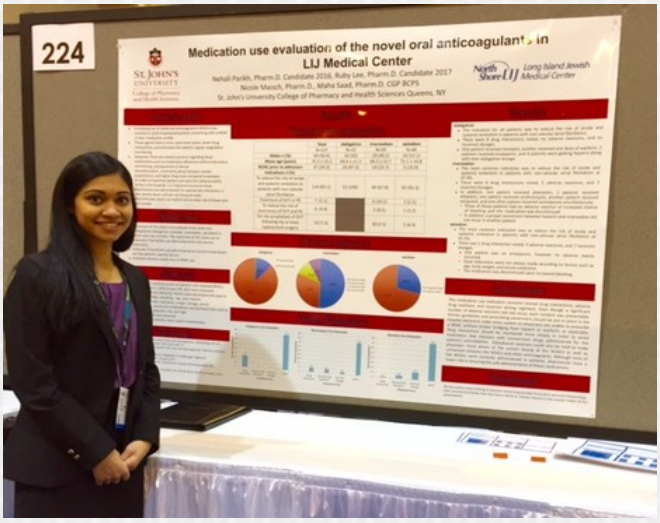
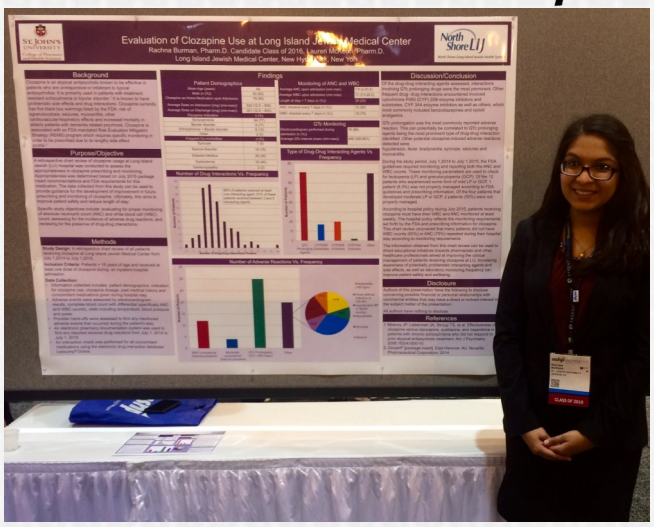
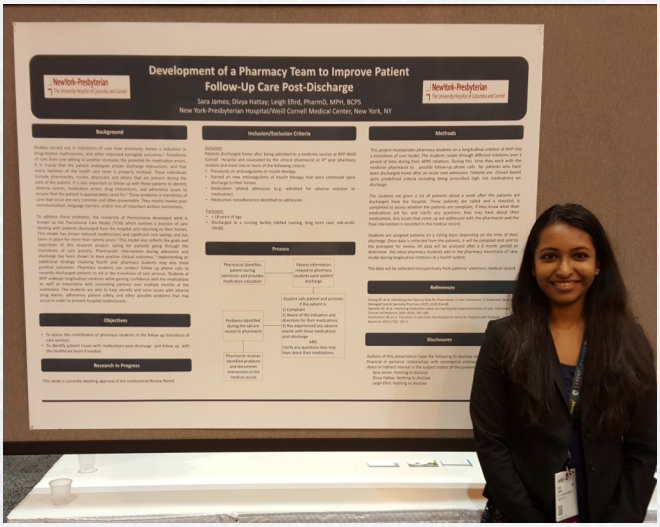


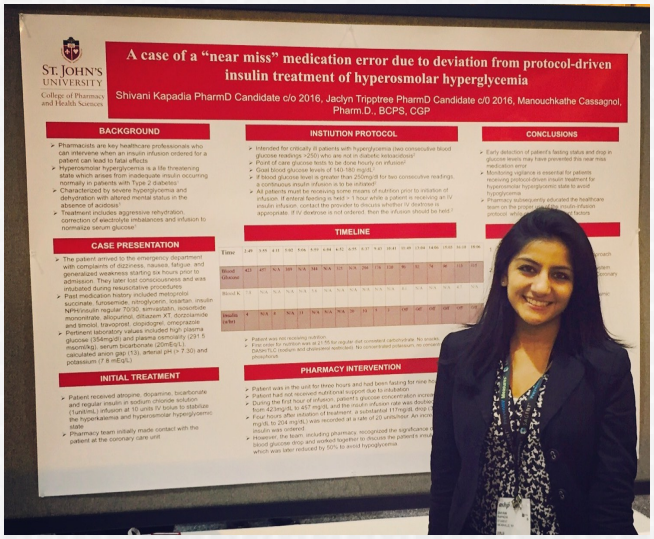
Nehali Parikh: Medication use evaluation of the novel oral anticoagulants in LIJ Medical Center



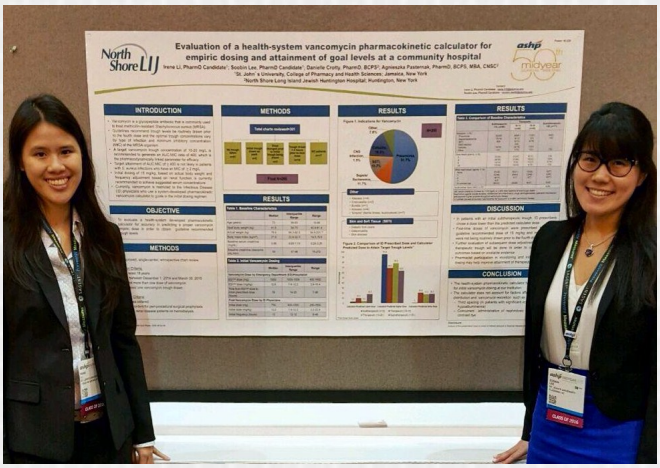
Rachna Burman: Evaluation of Clozapine Use at Long Island Jewish Medical Center



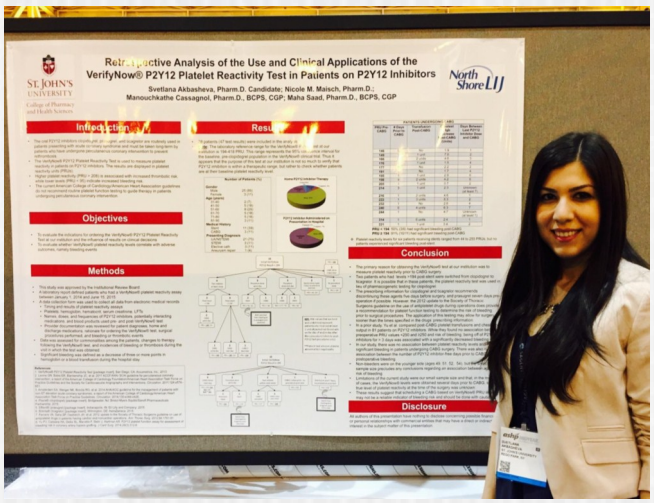
Sara James: Development of a Pharmacy Team to Improve Patient Follow-Up Care Post-Discharge



Shivani Kapadia: A case of a "near miss" medication error due to deviation from protocol-driven insulin treatment of hyperosmolar hyperglycemia



Soobin Lee and Irene Li: Evaluation of a health-system vancomycin pharmacokinetic calculator for empiric dosing and attainment of goal levels at a community hospital



Svetlana Akbasheva: Retrospective Analysis of the Use and Clinical Applications of the VerifyNow P2Y12 Platelet Reactivity Test in Patients on P2Y12 Inhibitors

PUZZLES

By: Sang Hyo Kim, Section Editor

Match the symptoms and their durations with the appropriate disease state.

Disease states to match are: Flu, Allergies, Acute Sinusitis, Cold, and Acute Bronchitis

ANSWERS on next page

Disease State	Symptoms	Duration
	• Sore throat • White nasal discharge • Cough • Mild fatigue and body	• 3 days to 2 weeks
	• Fever (temperature higher than 100 F or 37.8 C) • Cough • Headache or body aches	• 5-14 days days for fever and most other symptoms; cough may continue for three days.
	• Itchy eyes • Scratchy throat • Watery nose/eyes • Sneezing or coughing	• Weeks to months
	• Cold-like symptoms that develop into a painful cough that produces yellow or green phlegm. • Often worsens at night • Chest is sore or constricted	• 2-5 days for initial severe symptoms • Cough/ fatigue can go on for 2-3 weeks longer
	• Pain or pressure in the face, eyes and upper teeth • Thick, discolored nasal discharge • Cold symptoms that last 10 days or more	• Up to 12 weeks; less common chronic form can persist much longer

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PUZZLES: ANSWERS

Disease State	Symptoms	Duration
Allergies	• Itchy eyes • Scratchy throat • Watery nose/eyes • Sneezing or coughing	• Weeks to months
Cold	• Sore throat • White nasal discharge • Cough • Mild fatigue and body	• 3 days to 2 weeks
Flu	• Fever (temperature higher than 100 F or 37.8 C) • Cough • Headache or body aches	• 2-5 days for initial severe symptoms • Cough/ fatigue can go on for 2-3 weeks longer
Acute Sinusitis	• Pain or pressure in the face, eyes and upper teeth • Thick, discolored nasal discharge • Cold symptoms that last 10 days or more	• Up to 12 weeks; less common chronic form can persist much longer
Acute Bronchitis	• Cold-like symptoms that develop into a painful cough that produces yellow or green phlegm. • Often worsens at night • Chest is sore or constricted	• 5-14 days days for fever and most other symptoms; cough may continue for three.

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.

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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

To provide the highest quality student-operated newsletter with accurate information

To maintain a healthy, respectful, challenging, and rewarding environment for student editors

To cultivate sound relationships with other organizations and individuals who are like-minded and involved in like pursuits

To have a strong, positive impact on fellow students, faculty, and administrators

To contribute ideas and innovations to the Pharmacy profession