I wanted to be a generalist and didn’t want to specialize out of fear of being too narrowly focused and lacking variety. I liked being able to dip my feet in other fields, and this has really helped me in the positions I’ve held.

What made you switch from hospital to academia?

Someone told me many years ago they thought I would be a really great teacher and other people pointed it out a few more times during my career. Both my parents come from an educational background and wanted me to follow. I initially did not want to pursue academia but it runs in my blood. I enjoy teaching because I struggled a lot while a student myself so I can relate to students who struggle. I enjoy seeing those people learn things, see the light bulb come on, and for them to realize they can really learn the stuff and do well with it in the future.

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How would you describe your typical workday as a resident and even the few years after residency?

Emory residency was very intense. I wasn’t really a great student in pharmacy and really only began to understand and focus on my work at the end of my degree. I knew the residency was intense but still decided to do it. The program is laid out with an orientation session at the beginning followed by month-long experiences indifferent specialties such as surgery or oncology, precepted by different clinical pharmacist. The resident is also assigned a clinical pharmacist to be the overall mentor/advisor as a consistent presence and guide. This clinical pharmacist is helpful when you do your grand round presentation and research project. The research project is intense for those who haven’t completed a research project. In addition to that, there are also several longitudinal projects and smaller projects for each rotation. The day-to-day activities are really varied depending on the rotation. On some services, the team rounds twice a day, such as the ICU rotation, but others may only do once a day.

When you were the director of the residency program, what factors did you look at in your applicants?

We looked for applicants who were well rounded. Because our program had several residents (4 or 5), we needed them to work well together and looked for these characteristics during the interview. We also looked for those who weren’t too “needy” as well and whether our program was a good match for what they were looking for in a residency. Some applicants may have had multiple degrees whose needs were more than what we could offer. Those who are self-directed and motivated really stood out for us. We also sought those who are willing to take constructive criticism and able to be time managers. We try to figure out all of these characteristics and skills during the interview process. By using multiple preceptors to ask different questions, we were able to know more about these skills and the candidate’s personality, motivation, and needs.

We may even give a short exam and afterwards, we would get together and rank each individual candidate and choose the ones who would do well and fit well into our program.

How flexible were the rotations?

There are some rotations that their program considered to be essential or required, but also reserved a few months where the residents were able to choose certain rotations in which they showed more interested such as bone marrow transplant. Continues on Page 3

Pharmacist’s Potential Role in the Ebola Outbreak

Continued from front page

by Brittany Chambers

This is where a potential role for pharmacists could come into play. cAd3-ZEBOV is derived from a chimpanzee adenovirus and is genetically engineered to express glycoproteins from both the Sudan and Zaire species of the Ebola virus to generate an immune response (2). VSV-EBOV is a recombinant vesicular stomatitis virus-based vaccine that encodes for the Ebola virus (EBOV) glycoprotein in place of the of the vesicular stomatitis virus (VSV) glycoprotein to provoke an immune response against the Ebola virus (2). Pharmacists have gained a large and vital role in providing immunizations and with the panic and fear of the current Ebola outbreak, administering vaccinations against the Ebola virus may become a primary duty of pharmacists, if and when they are approved.

Reference:

Hysingla ER (hydrocodone):

Hysingla ER is a long-acting hydrocodone product that was approved by the FDA in November 2014. It has been approved for use in patients who require chronic management of severe pain and who have failed previous therapies. It is available in strengths of 20 mg -120 mg hydrocodone and is designed to be taken once every 24 hours. Given the high potency of this product and the already widespread problem of abuse of opioid painkillers, a high potential for misuse exists. In an attempt to solve this problem, Hysingla ER has been formulated with unique physical and chemical properties designed to deter its abuse. The tablet itself is difficult to break and crush, which will make alternate routes of ingestion more challenging. Additionally, it does not dissolve easily, forming a viscous gel instead of a solution, making injection difficult. It is the hope of the manufacturer, Purdue Pharma L.P., that Hysingla will provide an effective therapeutic option for patients who need chronic pain management, while simultaneously cutting down on the potential for its abuse.

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Denying Immunization: An Epidemic
By Haylee McCoy

Vaccinations have been a recent topic of controversy among many Americans, especially some parents, as there have been many misconceptions to spread like wildfire. Although many of these rumors have no backing scientifically, there are parents who are electing not to vaccinate their children as suggested by the CDC and vast majority of the medical community. It is as important as ever for health care providers, including pharmacists, to become educated on the importance of immunizations, what could happen as vaccination rates decline, and be able to educate their patients on such.

Due to vaccination, smallpox has been completely eradicated from the entire world. Other potentially devastating diseases including measles, rubella, diphtheria, polio, and pertussis have all but disappeared from America. To paint a more vivid picture, the CDC states that “more than 15,000 Americans died from diphtheria in 1921, before there was a vaccine. Only one case of diphtheria has been reported to CDC since 2004.”

A goal of immunizing recommended pediatric vaccines that have no backing scientifically, there are parents who are electing not to vaccinate their children as suggested by the CDC and vast majority of the medical community. It is as important as ever for health care providers, including pharmacists, to become educated on the importance of immunizations, what could happen as vaccination rates decline, and be able to educate their patients on such.

Due to vaccination, smallpox has been completely eradicated from the entire world. Other potentially devastating diseases including measles, rubella, diphtheria, polio, and pertussis have all but disappeared from America. To paint a more vivid picture, the CDC states that “more than 15,000 Americans died from diphtheria in 1921, before there was a vaccine. Only one case of diphtheria has been reported to CDC since 2004.”

A group of immunizing entire populations is to achieve herd immunity so that if one of these rare diseases is introduced (often through travel to other countries) it will not become an epidemic because those exposed who have been vaccinated are immune and can not get nor carry the disease. Vaccines are not only to protect ourselves, but all of those around us as well. When disease is introduced to an area with low vaccination rates, outbreaks occur. This has happened in 2014 with regards to measles (Figure 1). There have been at least 603 cases this year which is the highest number of cases since measles elimination was documented in 2000. In 1979, the number of pertussis cases and deaths skyrocketed in Japan because of a massive decrease in pertussis vaccination to only 10%. There were more than 13,000 cases and 41 deaths as opposed to 393 cases in 1974 before vaccination declined.

To educate patients, it is important to understand what misconceptions they believe. Leading the way in controversies is the notion that the measles-mumps-rubella (MMR) vaccine and thimerosal, a preservative in some vaccines, cause autism in children. The article by AJ Wakefield et al. that initially suggested the relationship between the MMR vaccine and autism was fully retracted because some of the elements were proven false. Additional barriers include religious and moral concerns and the notion that the HPV vaccine may promote promiscuity. Such cases may be handled on an individual basis, but the importance of vaccinations should be addressed as well as risk/benefit evaluation.

There are many other misconceptions regarding vaccinations out there. It is important that healthcare providers be educated and prepared to discuss them with their patients. This includes providing them with the information necessary to increase their patients’ understanding and debunk the myths in order to protect our country and the world from deadly, but avoidable diseases.

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What advice do you have for students who are interested in residency?

What I tell people who are on the fence about residency is that a lot of people think about “living in the now” vs “living in the future”. It is a long journey to get here but also taking the 2 years to do a residency also allows many doors to open and gives skills sets that you might not get outside of a residency. Academia is also very interesting. As a faculty member, we have had several faculty searches and some departments may not even consider someone without a PGY1 and/or PGY2. To open these doors, two year of residency training may be helpful. It’s not necessarily the “be all end all” for an academic position because it doesn’t train you for academia but more for how to treat patients. Searching online at job criteria really helps because certain positions may require residency training. Current graduates have the Internet at their disposal and can really use the resources that have recently developed with job searches. Having the mentality that I have community if anything, is not the case anymore. Today, community pharmacists are doing immunizations, therapy management, which is also requires a lot of training and experience. My experience is you can never go wrong with additional education especially before building a family and having an income. While you have no money, it is a lot easier to live off a smaller income until you finish training.

What was one of your most memorable experiences?

I think my most memorable experience is just really enjoying the rounding and working closely in an academic medical center with other disciplines to take care of patients. I thought it was really great, and I felt like I made a difference for people in their care and could be proactive in their care. It was a challenge to keep up in the latest and greatest therapies but working as the residency director and an academic professor in the nursing school at the same time was great and difficult job. I was able to learn a lot about teaching and pharmacology, which allowed me to keep up with current therapies. I used the information I gained from the hospital to teach and the information I learned while teaching allowed me to apply the newest therapies in the hospital and stay up to date on new findings.

Dyslipidemia Management Guidelines: A Battle Field

By Huong Pham

Dyslipidemia Management Guidelines: A Battle Field

Dyslipidemia is a widespread problem in America. According to the American Heart Association, 43% or 98.9 million Americans over 20 years of age have a total cholesterol level of 200 mg/dL or higher.1 Hyperlipidemia is one of the modifiable risk factors for heart disease, a leading cause of deaths (600,000 people annually) in America.2 Dyslipidemia has changed dramatically since the introduction of the newest lipid guidance. The 2013 American Heart Association/American College of Cardiology Guideline on the Treatment of Blood Cholesterol (2013 AHA/ACC) was a long-awaited and much anticipated guideline replacing the National Cholesterol Education Program Adult Treatment Panel III Guidelines (ATP III) which has been the primary hypolipidemia guideline since 2001. The evidence-based 2013 AHA/ACC lipid guideline recommendations are based on many clinical trials evaluating the benefits of statin therapy in preventing atherosclerotic cardiovascular (ASCVD).3 This guideline focuses on statin therapy and provides minimal recommendations regarding the other available lipid-lowering therapies.4

The 2013 AHA/ACC guideline identifies four statin benefit groups which include Clinical ASCVD—secondary prevention, Primary LDL-C ≥190 mg/dL—primary prevention, Age 40-75 with diabetes & LDL-C 70-189 mg/dL—primary prevention, Age 40-75 with LDL-C 70-189 mg/dL, and estimated 10-yr ASCVD risk ≥7.5%—primary prevention. It introduces a new tool to calculate 10-year ASCVD risk for patients between the ages of 40–79 years of age. This tool is available online and found on apps for Android and iPhone platforms. It replaces the Framingham CVD risk calculator used in ATP III which did not encompass cerebrovascular risk.5 There have been some initial concerns that the 10-year ASCVD risk calculator may overestimate risks in some patients.

Perhaps the most notable change in the 2013 AHA/ACC guideline is that target LDL values are no longer the primary focus of treatment. To some extent, having no fixed goals is a more evidence-based and realistic approach in lipid management. With the previous LDL targets in the ATP III guidelines, many patients were unable to achieve their treatment goals.6,7 The 2013 AHA/ACC focuses on statin therapy for the 4 statin benefit groups; however it carries certain limitations which need addressing to better manage patients with dyslipidemia.

References:

Brincidofovir: The Potential New Drug for the Treatment Ebola

By: Payal Kakadiya

Ebola has made its comeback and this time it has affected people in the U.S. Because of the outbreak of the deadly virus, the research and development sectors of various pharmaceutical companies have gone head first into finding a cure.

Chimerix, Inc. is the developer of brincidofovir, an antiviral for treatment of DNA viruses such as cytomegalovirus, adenoviruses, BK virus, small pox, and herpes simplex virus. It is also believed that it may have potential as treatment of the Ebola virus.

Brincidofovir is the prodruk of cidofovir. Cidofovir resembles the structure of cytidine, a DNA nucleotide. It is used up by DNA polymerases because it looks similar and the incorporation of cidofovir causes inefficient DNA synthesis, thus inhibiting viral replication. Brincidofovir was created by adding a lipid chain making it more potent, increasing its oral bioavailability, and reducing kidney toxicity. Because of its increase in lipophilicity, brincidofovir releases cidofovir intracellularly increasing its activity against viral DNA.

The drug is currently in Phase III clinical trials for use against the cytomegalovirus and adenovirus and has received the FDA Fast Track Designation. Because of brincidofovir’s unique inhibition of viral DNA replication, the FDA authorized the Emergency Investigational New Drug application of brincidofovir on October 6, 2014 for the treatment of the Ebola virus.

Brincidofovir was given to the first patient in the U.S. diagnosed with Ebola in Dallas. It was administered six days after the hospital admission, however, the patient passed away four days later. The patient had been critically ill so the effects of the antiviral were unknown because he could have died from not being able to tolerate the side effects or from his deteriorating status. Brincidofovir was also given to an Ebola patient at Nebraska Medical Center. He was pronounced Ebola-free and released from quarantine.

The antiviral has now moved into Phase II trials to test for its safety, tolerability, and efficacy in the treatment of the Ebola virus. It is currently available in the tablet form for immediate use in clinical trials. With brincidofovir being the only potential treatment for the Ebola virus, it becomes a commodity and worth millions. However, it must still undergo Phase III trials of FDA approval in order to become the go to treatment for Ebola. With research underway, there is hope that brincidofovir will follow through and become the leading treatment for all types of DNA viruses.

References

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