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AMERICAN COLLEGE OF CLINICAL PHARMACY

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Adult Medicine Practice and Research Network

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Inside this issue:

Message from the Chair

Author: Joel C. Marrs, Pharm.D., BCPS (AQ Cardiology), CLS

As I reflect back on my year as chair of the Adult Medicine Practice and Research Network (AM PRN) I wonder where all the time went! As we approach another ACCP Annual Meeting in a few days I am excited about the continued growth of the AM PRN. We currently have over 850 members practicing in a number of settings. I continue to be excited about the growth of students and postgraduate trainees in the AM PRN and in the ACCP organization. Over the past year the student and resident membership has grown in the AM PRN and currently we have 52 student members and 35 residents.

One of the key charges of the AM PRN Nominations Committee this past year was to develop AM PRN awards. This committee was able to recognize two AM PRN members this past Spring 2010 who have demonstrated their excellence in mentoring and clinical practice. Krystal Haase, PharmD., FCCP, BCPS was awarded the AM PRN 2010 Mentoring Award and Grant Sklar, PharmD., BCPS was awarded the AM PRN 2010 Clinical Practice Award. Since the AM PRN has many individuals deserving of recognition the Nominations Committee as identified other potential awards going forward in 2011.

Many of the notable accomplishments of our PRN members are highlighted in the newsletter. These accomplishments are just a few examples that demonstrate the hard work and dedication of our members to the profession of pharmacy and to the AM PRN.

As we move forward, our PRN remains dedicated to the core values of ACCP - Education, Service and Research. We continue to recognize a new investigator and a resident/fellow each year with research awards. I encourage you to attend the 2010 ACCP Annual Meeting in Austin, Texas scheduled for October 16th-20th. The AM PRN will be presenting a focus session entitled, "Application of Science and Statistics in COPD Management."

In closing, I would like to personally thank the AM PRN officers and all AM PRN committee members for their hard work and support over the past year. Lastly, I would like to encourage each of you to take advantage of opportunities to get involved within the PRN in any way that you can. The experience will be invaluable for you, the AM PRN and ACCP. I look forward to seeing many of you in Austin!

October 17-20, 2010

American College of Clinical Pharmacy Annual Meeting, Austin, TX

If you will be attending the Annual Meeting, please join us for the Adult Medicine Focus Session titled, "Application of Science and Statistics in COPD Management" taking place on October 18th at 3:45pm, in the Convention Center, Ballroom E

The PRN business and networking meeting will take place on October 18th at 6:30pm in the Hilton Room 406.

October 2010

American Pharmacists Month!

November 30, 2010

Deadline for nominations for 2011 awards (Clinical Practice, Education, Russell Miller, and Elenbaas Service Awards, 2012 Therapeutic Frontiers Lecture, and 2012 elected offices

April 8– 11, 2011

Ambulatory Care Preparatory Review Course and Pharmacotherapy Preparatory Review Course, Columbus OH

February 15, 2011

Deadline for nomination for 2011 Parker Medal and 2011 ACCP Fellows

Adult Medicine Business Meeting and Networking Forum April 24, 2010

Approximately 36 members joined us for this afternoon full of networking and information exchange!! If you were unable to attend the meeting, here are some key highlights.

Julie Wright Banderas gave us an update from the Board of Regents. Included in this update was the announcement of the ACCP Clinical Pharmacy Challenge for Students. The final round of this competition will be conducted during this Annual Meeting in Austin Texas. In addition, there was a discussion regarding the rebranding of the Spring Meeting. From 2011 on, the Spring Meeting will focus on preparation for specialty certification and Academy programming. There will no longer be poster sessions or committee meetings, but PRNs will be able to submit educational proposals for programming. Business meetings will be conducted as networking breakfasts. In regards to the PBRN, Dr. Banderas noted that several training sessions were conducted at the meeting, and there are also online training modules. PBRN connect is available to members to view, download, and print research related documents.

Funds are being solicited for the Frontiers Fund, we are encouraged to take a look at the new campaign message.

The first year of PRN awards were also given out during this meeting!
The criteria and application process was developed by the Nominations Committee. The Clinical Practice Award was given to Grant Sklar, and the Mentoring Award was given to Krystal Haase. The awards will be presented yearly, criteria to be sent out to the membership.

The treasurer's report included a review of the beginning balance, revenues, and expenses for the year. It was noted that we will not be spending for the FIT program this year, as there were not any applications from AMED PRN members.

Individual committee chairs reported on their recent activities, with notable activities below:

- The poster session committee is requesting volunteers for two poster sessions at this meeting, as there are >30 posters per session from AMED PRN members. A "Best Poster" award may be considered in the future. Congrats to all Adult Medicine Poster Presenters!
- The Programming Committee indicated that the decision will have to be made for whether a session will be conducted by our PRN for the Spring Meeting in 2011. Encourage all to attend the focus session scheduled for the Fall Meeting!
- The Nominations Committee facilitated nominations for the awards and positions within ACCP as well as for our specific PRN. Continue to nominate and support your colleagues!
- The Research/Student Awards Committee continues to work to select residents and students for travel awards.
- The second edition of the newsletter for this year is scheduled for October 2010. Please suggest topics/ideas for submission!

Concluding the meeting was a presentation by the New Investigator Award Recipient, Renee Holder. Please see page 4 for a summary of her presentation.

Please suggest topics and ideas for future newsletters!

Congratulations to our 2010 Spring PRN Award Winners Krystal Haase and Grant Sklar!

Notable Accomplishments and Publications

Congratulations to Sharon See and Susan M. Miller, who were elected to be 2010 ACCP Fellows!

Publications

Anderson SL, Trujillo JM. Association of pancreatitis with glucagon-like peptide-1 agonst use. Ann Pharamcother 2010; 44(5):904-909

Baldwin K, Orr S, Briand M, Piazza C, Vedyt A, McCoy S. Acute ischemic stroke update. Pharmacotherapy. 2010 May; (30) 5: 493-514

Lourwood DL, Wigle PR. Epilepsy in Pregnancy and Breastfeeding. In: Briggs GG, Nageotte M (editors): Diseases, Complications, and Drug Therapy in Obstetrics: a Guide for Clinicians. Bethesda, MD: American Society of Health System Pharmacists. 2009; 347-366

Ramin KD, Tracy, TS. High-risk pregnancies. In: Borgelt LM, O'Coneel MB, Smith JA, Calis KA (editors): Women's Health Across the Lifespan: A Pharmacotherapeutic Approach. Bethesday, MD: American Society of Health System Pharmacists. 2010; 403-414. (reviewer David Lourwood)

Lourwood DL: Antimicrobial drug interactions. In: Zucchero FJ, Hogan MJ, Sommer CD (editors): Evaluations of Drug Interactions. St Louis:First Databank. Ongoing publication in Looseleaf since 1985.

Guirguis AB: Preconception care. In: Richardon MM, Chesman KH, Chant C, et al. (editors): Pharmacotherapy Self-Assessment Program—Seventh Edition. Book 2: Women and Men's Health. Kansas City: American College of Clinical Pharmacy. 201: 111-128 (reviewer David Lourwood)

Presentations

Beth Briand presented "Pharmacist Directed Interventions to Improve HCHAPS Pain Scores" for the Florida Society of Health-System Pharmacists 44th Annual Meeting in July 2009.

Beth Briand presented "Pharmacist Directed Interventions to Improve HCHAPS Pain Scores" for the Northeast Florida Soceity of Health-System Pharmacists in October 2010

Beth Resman-Targoff presented "Pharmacologic Management of Rheumatoid Arthritis with Disease Modifying Anti-Rheumatic Drugs," at the 31st Annual Madison Clinical conference in March 2010

Other accomplishments

Nancy Williams was promoted to Professor with tenure in the Department of Pharmacy Practice at Southwstern Oklahoma State University.

Priti N. Patel and Olga Hilas were promoted to Associate Professors with tenure in the Department of Clinical Pharmacy Practice at St. Johns University.

Zachary Stacy was named the 2010 Missouri Pharmacist Faculty Member of the Year

Beth Resman-Targoff was re-elected Region VI Councilor for the Rho Chi Honor Society

Spotlight on a New Member! Nicole L. Metzger

Nicole became interested in pharmacy when a friend, who was in pharmacy school, introduced her to the profession as an undergraduate. She highlighted how pharmacists not only dispensed medications but played an integral role in patient wellness. The profession intrigued Nicole as it combined her love of science with the interpersonal interaction required for patient care. Nicole attended the University of Georgia and graduated in 2006. After graduation, she moved to Richmond, Virginia where she completed her PGY-1 Pharmacy Practice and PGY-2 Internal Medicine Specialty residencies at Virginia Commonwealth University Health System. Nicole has a passion for pharmacist-provided direct patient care and teaching. She is currently a Clinical Assistant Professor at Mercer University College of Pharmacy and Health Sciences and has a clinical practice site in medicine at Emory University Hospital in Atlanta, GA. Nicole is the clinical pharmacist assigned to 2 academic medicine teaching teams. She takes pharmacy residents and students on rotation throughout the year and also hosts 3rd year students for introductory pharmacy practice experiences at her site.

Nicole joined the ACCP Adult Medicine PRN to get to network with other medicine pharmacists throughout the country and to stay updated about unique practices that pharmacists are engaged in nationwide. Nicole finds that the daily email list is very helpful in answering questions that require clinical expertise in addition to literature review. It is always reassuring to hear how other pharmacists would handle patient issues that she is facing. Nicole thinks ACCP is committed to advancing the role of clinical pharmacy, and she looks forward to being more involved in that movement through the Adult Medicine PRN.

A warm welcome to Nicole Metzger and the other new members of the AMED PRN!!

Case Study Buddy!

Question: *What is causing this patient's confusion, agitation and jerky movements?*

MR is a 67 year old male with a history of advanced squamous cell carcinoma of the left ear canal/temporal bone which has been surgically resected. His clinical course was recently complicated by increasing difficulty swallowing and immediate concern for impending exsanguination from his exposed left internal jugular vein. He is admitted for optimization of his pain regimen and placement in a nursing facility with hospice. His medications on admission included oxycodone SR 40mg twice daily, oxycodone 30mg every 4 hours as needed, dexamethasone 4mg twice daily and gabapentin 300mg twice daily.

Upon admission, oral medications were discontinued and intravenous hydromorphone was initiated and titrated to adequate pain control. By day 8 he reported "good" pain control, receiving 45mg/day of hydromorphone, but patient also noted that he was "feeling wacky" and his family reported signs of delirium. On the night of hospital day 8, he became increasingly agitated, confused and developed frequent myoclonic jerking involving his upper and lower extremities. The following morning, his hydromorphone dose was decreased by 25% and lorazepam 0.5mg IV every 6 hours was added. However, this proved unsuccessful in alleviating his symptoms. On day 10, he was transitioned to a transdermal fentanyl patch. Hydromorphone was discontinued 10 hours after the fentanyl patch was applied. Within 24 hours, MR was back to his baseline, communicating clearly with his family and the myoclonic jerks had completely ceased. He was discharged on day 13 to a nursing facility with hospice. His pain medications on discharge were fentanyl 200mcg patch q48h and hydromorphone 3mg IV once daily with dressing changes.

Discussion:

Opioids have been associated with a variety of movement disorders including muscle spasm, rigidity, myoclonus and seizures. Myoclonus is defined as involuntary shock like contractions that are irregular in rhythm and intensity.[1] Myoclonus due to opioid therapy is an occasional side effect and can be caused by any opioid. It is usually dose related, though in an unpredictable manner.[1, 2] Although the pathophysiology of opioid induced neuromuscular disorders is not fully known, certain drugs with neuroexcitatory metabolites have been more commonly associated in literature. Accumulation of active metabolites such as normeperidine, morphine-3-glucuronide, morphine-6-glucorinide and hydromorphone-3-glucuronide has been proposed as a likely mechanism of the myoclonus seen with opioid therapy. While this is supported by animal studies and some case reports, inconclusive clinical data and presence of myoclonus in patients on opioids without clinically relevant active metabolites further suggests the involvement of multiple mechanisms and pathways.[1, 3] In practice, optimal pharmacotherapy involves balancing the achievement of satisfactory pain control with minimizing adverse effects.

Mild cases of myoclonus caused by an opioid are often self limiting and resolve spontaneously. It is always important to review and discontinue any adjuvant medications that may cause or contribute to neuroexcitatory symptoms.[2] In severe cases, reducing the opioid dose or rotating to a different opioid (if dose reduction is not practical due to suboptimal pain control) is recommended.[1, 2] In refractory cases where myoclonus persists, consideration should be given to adding a benzodiazepine. Clonazepam, diazepam or midazolam have been reported to be successful in alleviating symptoms. Skeletal muscle relaxants such as baclofen and dantrolene have also been described in literature.[2]

Thanks to our Author!

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References:

1. Mercandante S., Pathophysiology and treatment if opiod-related myoclonus in cancer patients. *Pain* 1998:74(1):5-9
2. McNicol E., Horowicz-Mehler N., Fisk RA., et al., Management of opiod side effects in cancer related and chronic non-cancer pain: A systematic review, *Pain* 2003;4(5):231-56
3. Smith HS., Opiod metabolism, *Mayo Clin Proc.* 2009;84(7):613-24

Thanks to the following people for their contributions to the development of the Fall 2010 Newsletter:

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Methicillin-resistant *Staphylococcus aureus* nasal colonization and correlation to methicillin-resistant *Staphylococcus aureus* pneumonia in the intensive care unit.

Renée M. Holder, Pharm.D.[1,2], Ann E. Canales, Pharm.D., BCPS[1], Gregory K. Perry, Pharm.D., BCPS[2], Young R. Lee, Pharm.D., BCPS[1], Jaclyn K. Priest, Pharm.D. Student[1], Jennifer L. Grelle, Pharm.D. Student[2]

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Purpose: The link between methicillin-resistant *Staphylococcus aureus* (MRSA) colonization and infection is well studied and suggests a more judicious use of empiric antibiotic regimens with activity against MRSA to promote antimicrobial stewardship. However, none of these investigations have discovered a significant relationship between MRSA pneumonia and colonization with MRSA. This study aims to evaluate the incidence of MRSA pneumonia in intensive care unit (ICU) patients colonized with MRSA as detected by nasal swab.

Methods: A retrospective chart review was performed for patients admitted to the 24-bed ICU of a community hospital from November 2008-October 2009. Patients are swabbed in the anterior nares upon ICU admission and weekly thereafter. Pneumonia and other infections were evaluated for interaction with MRSA nasal swab results, in addition to age, sex, total hospital and ICU days and level of care prior to admission.

Results: A total of 785 charts were reviewed. Positive nasal swabs were present in 11% of patients, and pneumonia occurred in 17% of patients. There were seven cases of MRSA pneumonia. More patients colonized with MRSA had MRSA pneumonia (18.7% vs. 3.3%, p=0.035) and infections caused by MRSA (37% vs. 3.7%, p<0.001). MRSA nasal swabs were found to be 43% sensitive and 90% specific for MRSA pneumonia. MRSA-colonized patients had longer ICU and hospital stays. A multivariable logistic regression was conducted. After controlling for age (the only significant predictor for MRSA colonization), the adjusted odds ratio was 18.46 (95% CI 7.22-47.20).

Conclusions: MRSA nasal colonization is related to MRSA pneumonia and MRSA infection. Patients colonized with MRSA and being evaluated for an infection may be more likely to require an antibiotic with activity against MRSA compared to patients with a negative MRSA nasal swab in the absence of other risk factors such as length of hospital or ICU stay and age.

Renee Holder is a Pharmacotherapy Resident at Texas Tech University Health Sciences Center. She received the AMED PRN New Investigator Award at the ACCP Spring Meeting in Charlotte, North Carolina in April 2010