

September 19, 2023

Pulmonary Practice & Research Network (PRN)

2023 Business Meeting

Welcome!

Outgoing PRN Chair: Melissa Santibañez

- Year in review: 2023
 - ACCP DEI training for PRN officers
 - Implementation of new Communications Committee
 - PRN “Firsts”
 - Pulm PRN speaker’s bureau
 - Theophylline scoping review project published in *Pharmacotherapy*
 - Walking professor rounds for 2023 Virtual Poster Symposium
 - Student travel award and research presentation
 - Completion of ACCP member relations best practices questions

Updates from ACCP Board of Directors

ACCP Liaison: Melissa Badowski



- Incoming board members
 - Jo Ellen Rodgers (incoming President-Elect)
 - Kayla Stover (incoming Secretary)
 - Candice Garwood (incoming Regent)
 - Hanna Phan (incoming Regent)
- May 19-20, 2023 board meeting minutes approved/posted
- All committee and task force papers are fully/nearly complete
 - Should be published in *JACCP* in 2023 – 2024

Updates from ACCP Board of Directors

ACCP Liaison: Melissa Badowski



- Get the Medications Right Institute (GTMRx)
- ACCP advocacy activities
- 2023 ACCP Annual Meeting will be held in Dallas, November 11-14
 - Registration open
- ACCP x SNPhA Virtual Residency and Fellowship Showcase will be held October 24 and 26 from 5:00 – 8:00 pm CDT
 - Free of charge to candidates and training programs, including ACCP members and non-members

Updates from ACCP Board of Directors

ACCP Liaison: Melissa Badowski



- Journal updates
 - Call for papers for the *JACCP* themed issue on Clinical Pharmacy and Patient Safety is open -- manuscripts are due January 15, 2024
 - ACCP journal podcasts feature interviews with journal authors; download ACCP Podcast on iTunes or Google Play
 - Download free Wiley Online Library app from the App Store or Google Play
- ACCP Foundation Updates
 - Application deadline for 2023 ACCP Futures Grants is September 1, 2023
- 2024 Committees and task forces will be developed later this month by President-Elect Brian Hemstreet
 - Invitations to serve will go out to members in late August/early September

Advocacy: PAC Captains Update

- Annually, PAC captain will be the PRN chair-elect
- ACCP Advocacy in Action newsletter updates

Register Now for GTMRx Webinar: Optimizing Medications to Improve Public Health and Address Health Disparities

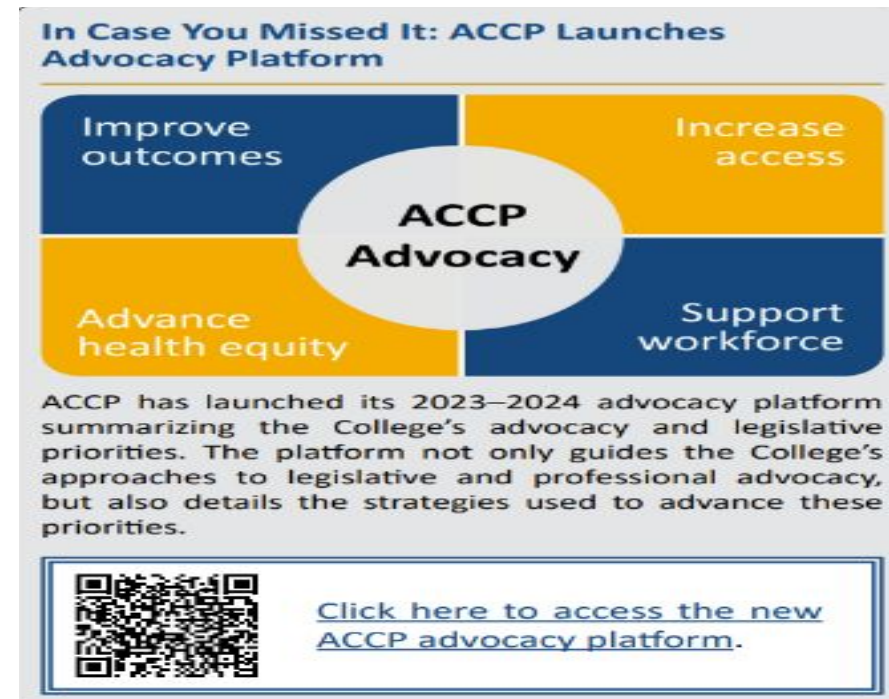


Webinar details:

September 26, 2023

2-3 p.m. (ET)

Registration: <https://us02web.zoom.us/join/zoom.us/meeting/register/tZldO-qurDsrGtU3i7SuusmJlP4gLHv8k2pF>



Membership & Financial Report

Secretary/Treasurer: Linda Fitzgerald

- As of August 2023
 - 84 current members
 - In-training: 2 residents, 5 students
 - Account balance: \$6,251.33
- 2023-2024 annual membership needs assessment survey open
 - Please complete by November 1, 2023
 - Link: <https://forms.gle/mhS4wzxQ74gSAH2H7>

Communications Committee

Chair: Jean Moon

Chair-Elect: Jeffrey Gonzales

- Annual PRN newsletter
 - Expected to be issued by end of September
- Twitter & social media

Education & Programming Committee

Chair: Melissa Lipari

Chair-Elect: Jeffrey Gonzales

- **Pulmonary PRN focus session: Saturday, November 11 @3:30pm-5pm CST**

- **As Good as GOLD: Updates in COPD Management**

- **Objectives**

1. Recognize risk factors for patients with COPD.
2. Classify de novo patients with COPD.
3. Select an appropriate pharmacologic regimen for chronic stable COPD.
4. Select an appropriate pharmacologic regimen for acute exacerbations of COPD.
5. Recognize strategies to improve patient access to COPD medications.

- **Faculty**

1. Dennis M. Williams, Pharm.D., FCCP, BCPS
2. Suzanne G. Bollmeier, Pharm.D., FCCP, BCPS, AE-C
3. Sheryl F. Vondracek, Pharm.D., FCCP, BCPS

Nominations & Awards Committee

Chair: Julio Rebolledo

Chair-Elect: TBD

- Submitted fall & spring member accomplishments

	Fall 2022 Report	Spring 2023 Report
Publications	9	10
Presentation	5	4
Awards, Honors and Recognitions	1	5
Other achievements	1	-
Promotions, New positions	-	3

Nominations & Awards Committee

Chair: Julio Rebolledo

Chair-Elect: TBD

ACCP Pulmonary PRN Fall 2022 Award Nominations Submitted			
	Award Nominations	Nominator	Result
Clinical Practice	2	Wilken	Not awarded
Russell R. Miller	1	Wilken	Not awarded
Categories: Clinical Practice, Russell R. Miller, Education*, Robert M. Elenbaas Service Award*, C. Edwin Webb Professional Advocacy*, 2023 Therapeutic Frontiers Lecture*. *No nominations			

Nominations & Awards Committee

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Chair-Elect: TBD

ACCP Pulmonary PRN Spring 2023 Award Nominations Submitted			
	# Nominations	Nominator	Result
ACCP Fellow	1	Moon/DiDomenico	Awarded: Lori Wilken
New Clinical Practitioner	1	Fleischman	Not awarded
New Educator	1	Fitzgerald	Awarded: Paul Boylan
New Investigators	1	Fitzgerald	Not awarded
Categories: ACCP Fellow, New Investigators, New Educator, New Clinical Practitioner, Parker Medal* *No nominations			

Nominations & Awards Committee

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Record of Officers and Ballot		
Year	Officers	Ballot
2023-2024	Chair: Paul Boylan Chair elect: Megan Fleischman Secretary/Treasurer: Jeffrey Gonzales	Chair elect: Megan Fleischman Secretary/Treasurer: Jeffrey Gonzales
2022-2023	Chair: Melissa Santibañez Chair Elect: Paul Boylan Secretary/Treasurer: Linda Fitzgerald	Chair elect: Paul Boylan and Melissa Lipari Secretary/Treasurer: Linda Fitzgerald and Carlos Lasella

Nominations & Awards Committee

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- PRN feature for August 2022 ACCP in-training newsletter
- PRN student/resident travel award applications due August 31
 - \$205 for student award or \$255 for resident award to cover meeting registration cost
 - Recipient: Madison Owen, Pharm.D. candidate 2024 (Wingate University)
 - Project: “Evaluation of Inhaler Prescribing Trends in Patients with Unconfirmed COPD”

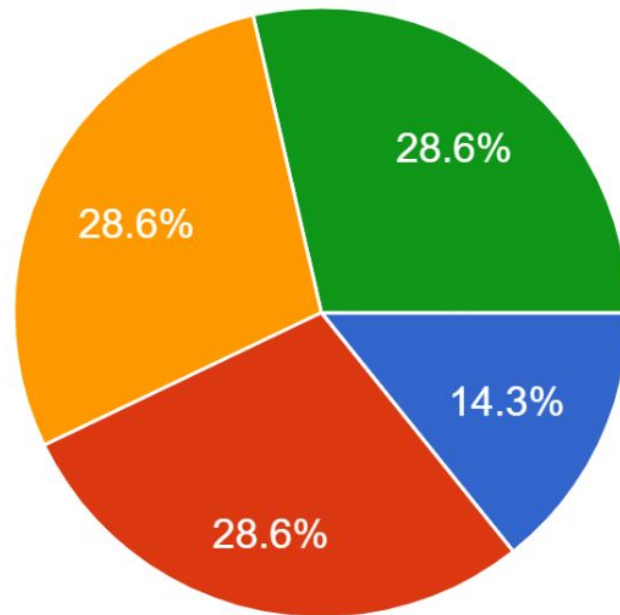


Nominations & Awards Committee

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Chair-Elect: TBD

- ACCP Virtual Poster Symposium



- Poster #2: Thrombosis Secondary to Intravenous Dicyclomine Administration: A Case Report
- Poster #7: A Case Report of Involuntary Nystagmus Following Intravenous Lidocaine Injection
- Poster #26: Pharmacist Perceptions of Delivering Patient Care through Teleh...
- Poster #258: Assessment of COPD Medication Regimen Complexity in A...

Nominations & Awards Committee

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Chair-Elect: TBD

2023 Pulmonary PRN Best Poster Award

Poster No.	Novelty Originality	Clarity/Organization	Impact/Relevance to Practice	Total Points
258*	7	7	8	22
26*	5	6	6	17
7*	8	7	7	22
2**	4	4	4	12

Point range 1-5

*Two evaluators; ** One evaluator

Best Poster Winner

(Dr. Theresa Prosser & Dr. Suzanne Bollmeier)



ST. LOUIS COLLEGE
OF PHARMACY

Assessment of COPD medication regimen complexity in ambulatory patients to identify interventions to improve adherence

Theresa R Prosser, PharmD, FCCP, BCPS, AE-C and Suzanne G Bollmeier, PharmD, FCCP, BCPS, AE-C
St. Louis College of Pharmacy at University of Health Sciences and Pharmacy in St. Louis

PURPOSE and BACKGROUND

Non-adherence is common and linked to poor COPD outcomes. Medication regimen complexity index (MRCI) affects other diseases outcomes. Little is known about implications of MRCI in COPD. Secondary analysis was done to calculate MRCI scores assessing relationship to symptoms, COPD severity, and health literacy (HL) to identify potential pharmacist interventions to optimize adherence.

PATIENTS AND METHODS

Secondary analysis conducted of cross-sectional, non-randomized survey data. Participants (N=709) with self-reported COPD completed a survey of demographics, exacerbations, symptoms (COPD Assessment Test (CAT)), and self-reported COPD regimens. COPD severity was classified into GOLD ABCD categories using exacerbation history and CAT. CAT scores were categorized as low (<10), high (>10) and very high (>20). A 1-year proportion of days covered (PDC) was calculated. MRCI calculator scored regimens (primary endpoint). Published cut points categorize MRCIs as low (≤4), medium (5-8) and high (>8) and inhaled device polypharmacy (IDP) as ≥3 devices. Risk for low HL was assessed by Single Item Literacy Screener. Descriptive and Chi-squared statistics were used.

RESULTS

Adherence	
PDC for 1 maintenance medication	0.43 ± 0.37
participants with PDC > 80%	28.7%

Medications and devices	n (%)
Medications	
LABA	494 (69.7)
LAMA	302 (42.6)
ICS	479 (68.5)
Theophylline	9 (1.3%)
Roflumilast	31 (4.4)
SABA	178 (25.1)
SAMA	623 (25.1)
Formulations/regimen	2.54 ± 1.1
Devices/regimen	2.05±0.8
Inhalers	642 (90.5%)
Respimat/Handihaler/Neohaler	246 (34.7)
Other DPI	300 (42.3)
Nebulizer	247(34.8)

MRCI Scores and Sub-scores	
Average	14.05± 5.4
Range	4-32
A: Route (i.e., device(s))	7.73± 3.24
B: Frequency of administration	4.71 ± 2.2
C: Additional directions (e.g. q hours, prn)	1.65± 0.84

MRCI, IDP, HL by GOLD classification n (%)					
	Group A 42 (6)	Group B 270 (35)	Group C 28 (4)	Group D 369 (55)	p value
MRCI scores					
Low ≤4	3 (7)	4 (1)	1 (3.5)	1 (0.3)	p< 0.05
Medium 5-8	13 (31)	53 (20)	1 (3.5)	32 (8.7)	
High >8	26 (62)	213 (79)	26 (93)	336 (91)	
Inhaler Device Polypharmacy (IDP)	5 (11.9)	56 (20.7)	9 (32.1)	128 (32.9)	p<0.05
Low Health Literacy (at risk)	12 (28.6)	83 (30.7)	7 (25)	131 (35.5)	p=0.363

MRCI, IDP and HL by CAT score n (%)				
	CAT <10 68 (9.6)	CAT 10-20 254 (35.8)	CAT > 20 387 (54.6)	p value
MRCI scores				
Low ≤4	3 (4.4)	4 (1.6)	1 (0.3)	p<0.001
Medium 5-8	14 (20.6)	46 (18.1)	40 (10.3)	
High > 8	51 (75)	204 (80.3)	346 (89.4)	
Inhaler Device Polypharmacy	13 (19)	54 (21.2)	131 (33.9)	p<0.05
Low Health Literacy (at risk)	20 (8.6)	77 (33)	136 (58.4)	p=0.415

DISCUSSION

*Overall adherence was low despite high symptom scores; high MRCIs could contribute.
*COPD MRCI scores are higher than other chronic diseases reported (DM 6.3 +/- 3.1, HIV/AIDS 4.9+/-2.1)
*MRCI increased with COPD severity and symptoms.
*Number of devices and frequency contributed most to MRCI; these might be important foci for interventions to simplify regimens.
*All medication classes are in multiple devices, combinations, and daily formulations creating potential to simplify regimens
*A screening tool could identify high symptom scores, COPD MRCIs >8, and low adherence.
*New GOLD category E (Group C + D) unlikely to change results

CONCLUSIONS & IMPLICATIONS

*Interventions are needed to improve COPD outcomes and adherence.
*Combining low PDC with a high MRCI and high symptoms (e.g., CAT > 20, GOLD C or D) could provide a useful screen to target regimens for simplification.
*Prospective studies are needed to evaluate if minimizing MRCI improve adherence and COPD outcomes.

DISCLOSURES

The authors report no conflicts of interest. No funding was received to support this secondary analysis

References

Ayele AA, Tegegn HG, Ayele TA, Ayalew MB. Medication regimen complexity and its impact on medication adherence and glycemic control among patients with type 2 diabetes in an Ethiopian general hospital. *BMJ Open Diab Res Care*. 2019;7:e000685. doi: 10.1136/bmjdr-2019-000685
Hirsch JD, Metz KR, Hosokawa PW, et al. Validation of a patient-level medication regimen c index as a possible tool to identify patients for medication therapy management intervention *Pharmacotherapy*. 2014; 34 (8): 826-35. doi:10.1002/phar.1452
Libby AM, Fish DN, Hosokawa PW, et al. Patient-level medication regimen complexity across with chronic disease. *Clin Ther*. 2013;35:385-98. doi: 10.1016/j.clinthera.2013.02.019. Epub

To access and read the original research manuscript, please scan this QR code



Best Poster Winner (Dr. Mark Malesker)

A Case Report of Involuntary Nystagmus Following Intravenous Lidocaine Injection



Hope Thelander, PharmD; Mariah Shafer, PharmD; Mark Malesker, PharmD; Robert Plambeck, MD
CHI Health Creighton University Medical Center Bergan Mercy, Omaha, NE



Rationale

- Lidocaine is an amide anesthetic used for local and topical anesthesia, as an antiarrhythmic, and in combination with other agents for multimodal analgesia. The primary mechanism of action is sodium channel blockade.¹
- Lidocaine is recognized for its ability to cause adverse effects involving the central nervous system (CNS).² This is because the CNS is particularly sensitive to the effects of sodium channel blockade. High serum lidocaine levels in the range of 5-12 mcg/ml are reported to cause nystagmus, slurred speech, hallucinations, muscle tremors, and seizures. Signs of toxicity such as tinnitus, dysgeusia, lightheadedness, and nausea can present at serum lidocaine levels as low as 1-5 mcg/ml.²
- To date, there are limited case reports published describing lidocaine and the development of involuntary nystagmus.

Objective

- This report describes a case of involuntary nystagmus following the administration of intravenous lidocaine in combination with intravenous ketamine and intrathecal ropivacaine for postoperative multimodal analgesia.

Background

- Signs of local anesthetic toxicity typically manifest in the cardiac and central nervous system where sodium channels are essential for proper physiologic functioning.¹
- The proposed mechanism of lidocaine causing involuntary nystagmus is not fully understood, but lidocaine can lead to both excitation and depression of the central nervous system.²
- The risk for lidocaine toxicity is increased with concomitant administration of other local anesthetic agents or with administration of lidocaine via multiple routes (e.g. transdermal, IV).²
- Local anesthetics are primarily metabolized by the liver. Patients with hepatic dysfunction are at higher risk for local anesthetic toxicity.^{1,2}

Case Report

- A 52-year-old male presented with sudden onset of severe pain in the chest and back and was diagnosed with an esophageal perforation requiring surgery for repair.
- Postoperatively, the patient was placed on multimodal analgesia with IV lidocaine at a rate of 1 mg/min, IV ketamine at a rate of 3 mg/hr, and intrathecal ropivacaine 0.2% at a rate of 6 ml/hr. After receiving the infusions for approximately 22 hours, the patient endorsed involuntary vertical nystagmus, tinnitus, dizziness, and nausea. The patient denied perioral paresthesias or hallucinations.
- The patient had no intravenous lidocaine exposure prior to the administration of multimodal analgesia. He wore a lidocaine patch for 3 hours prior to surgery which was removed approximately 10 hours prior to the start of the lidocaine, ketamine, and ropivacaine infusions. A 50 mg dose of epidural bupivacaine was administered during the surgery. Lidocaine levels were not obtained in this case, and the patient had no history of hepatic dysfunction.

Patient Outcome

- The adverse effect was attributed to the lidocaine infusion which was promptly discontinued. The ketamine infusion was continued for an additional 24 hours before discontinuation and the intrathecal ropivacaine was continued for an additional 5 days.
- The involuntary nystagmus gradually ceased over a period of 72 hours following the discontinuation of lidocaine.

Table 1: The Naranjo Algorithm ³

Clinical Questions	YES	NO	Unknown/ Not Done
1. Are there previous conclusive reports on this reaction?	+1	0	0
2. Did the adverse event appear after the suspected drug was given?	+2	-1	0
3. Did the adverse reaction improve when the drug was discontinued or a specific antagonist was given?	+1	0	0
4. Did the adverse reaction appear when the drug was re-administered?	+2	-1	0
5. Are there alternative causes that could have caused the reaction?	-1	+2	0
6. Did the reaction reappear when a placebo was given?	-1	+1	0
7. Was the drug detected in any body fluid in toxic concentrations?	+1	0	0
8. Was the reaction more severe when the dose was increased, or less severe when the dose was decreased?	+1	0	0
9. Did the patient have a similar reaction to the same or similar drugs in any previous exposure?	+1	0	0
10. Was the adverse event confirmed by any objective evidence?	+1	0	0
Scoring:	>9 = definite ADR 5-8 = probable ADR 1-4 = possible ADR 0 = doubtful ADR		

Conclusions

- An assessment with the Naranjo Algorithm resulted in a score of 4 and found a possible relationship between intravenous lidocaine and the development of involuntary nystagmus.³
- Given the temporal relationship between the initiation of the lidocaine infusion, the onset of nystagmus, and the resolution of nystagmus following discontinuation of the lidocaine infusion, intravenous lidocaine was suggested as a potential cause of the patient's nystagmus.

Implications

- This case brings to light a rare potential adverse effect of intravenous lidocaine.
- It is important for clinicians to recognize the possible adverse effects that patients receiving lidocaine may experience. Physicians should be instructed to monitor for the potential development of nystagmus in patients receiving lidocaine.

References

- Zink W, Ulrich M: Clinical use and toxicity of local anaesthetics. Anästhesiologie 2018;59:716727. DOI: 10.19224/ai2018.716
- Marra DE, Yip D, Fincher EF, Moy RL. Systemic toxicity from topically applied lidocaine in conjunction with fractional photothermolysis. Arch Dermatol. 2006;142(8):1024-1026. doi:10.1001/archderm.142.8.1024
- Naranjo CA, Busto U, Sellers EM. A method for estimating the probability of adverse drug reactions. Clin Pharmacol Ther. 1981 Aug;30(2):239-45.

The authors have nothing to disclose.

Nominations & Awards Committee

Chair: Julio Rebolledo

Chair-Elect: TBD

- Call for achievements for the fall 2023 ACCP PRN report!
 - Submitted 9/15/23

Research Committee

Chair: Brooke Foster

Chair-Elect: Lori Wilken

- Completed project:
 - Theophylline Use in the 21st Century: A Scoping Review from the ACCP Pulmonary Practice and Research Network (PI: Paul Boylan)
- Ongoing projects:
 - Assessment of Theophylline Prescribing Practices for Pulmonary Conditions (PI: Melissa Santibanez)
 - Interstitial Lung Disease (PI: Amber Lanae Martirosov)
 - “History of the PRN” Poster for Annual Meeting
- Future projects:
 - Considering internal peer review process - watch for questions about this in the next annual member survey

Open Forum

Welcome, New Officers!

- Chair: Paul Boylan (University of Oklahoma)
- Chair-Elect: Megan Fleischman (Concordia University Wisconsin)
 - PRN PAC captain
- Secretary/Treasurer: Jeff Gonzales (St. Mary's Medical Center)

Join Us at the 2023 Annual Meeting!

- November 11-14 in Dallas, TX
 - Sheraton Dallas Hotel
- Pulmonary PRN networking event = details to come!
- PRN fundraiser

September 19, 2023

Pulmonary Practice & Research Network (PRN)

2023 Business Meeting