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OF THE AMERICAN ACADEMY OF PEDIATRICS
INCORPORATED IN FLORIDA

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SCAN ME

Farewell, but Not Goodbye

It has been an honor and a privilege to serve as the Founding Editor of *The Florida Pediatrician*, the official publication of the Florida Chapter of the American Academy of Pediatrics (FCAAP). With this message, I bid farewell in my capacity as Editor.

During my tenure as President of the Florida Chapter, I was proud to contribute five lasting initiatives to our organization:

1. Hiring Alicia Adams (although she began after my term concluded),
2. Launching The Future of Pediatrics, our Annual Meeting,
3. Establishing the Lifetime Membership category,
4. Creating a Reserve Fund, and
5. Starting *The Florida Pediatrician* journal.

Each of these efforts has flourished — and impressively, without requiring my continued involvement. Alicia Adams has been nothing short of extraordinary. The Future of Pediatrics conference continues to grow in stature and value. The Reserve Fund has strengthened our financial stability, and the Lifetime Membership category is gaining momentum, though it still calls for broader support.

Where I remained deeply engaged was with *The Florida Pediatrician*. For the past 11 years since the end of my presidency, I have had the pleasure of continuing to lead the journal. I have been fortunate to collaborate with a dedicated team, with invaluable administrative support initially from Melanie Range, then John Horne, and more recently Larry Compton. The Editorial board has been nothing short of spectacular in their time commitment and wise counsel. Together, we achieved all our goals — notably, having *The Florida Pediatrician* indexed on Google Scholar. It remains the only journal among all AAP chapters to receive this distinction. While we have not yet achieved indexing on PubMed, I remain optimistic that milestone will be reached in due time.

As I step down, I am pleased to leave the journal in the very capable hands of Dr. Michael Muszynski — a trusted colleague and friend — who will undoubtedly lead it to new heights. Michael has served as the Associate Editor of *The Florida Pediatrician* for many years.

It is with great humility and appreciation that I accept the role of Editor Emeritus, and I thank the FCAAP Board for this meaningful honor.

I plan to stay involved in *The Florida Pediatrician*.

A heartfelt thanks goes to Dr. Rana Alissa, the current President of FCAAP, for her outstanding leadership and unwavering support of the journal — and of me, personally. In my memory, she stands as the finest President the Chapter has had.

Mobeen H. Rathore, MD, CPE, FAAP, FPIDS, FSHEA, FIDSA, FACPE
Editor, The Florida Pediatrician

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CASE REPORT

Mycoplasma Pneumonia On the Rise

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ABSTRACT

Mycoplasma infections have been on the rise in the United States since spring of 2024. Notably, children under five years of age are being affected more than before. Symptoms are usually mild, self-limited, and typically include fever, cough, runny nose, and sore throat. Diagnosis can be made clinically or confirmed by respiratory panels. First-line treatment includes macrolides; although, doxycycline and fluoroquinolones can also be used. Providers should consider Mycoplasma if patients fail empiric treatment of community-acquired pneumonia with beta-lactams like amoxicillin.

INTRODUCTION

Cases of *Mycoplasma pneumoniae* pneumonia, also known as "walking pneumonia" or atypical pneumonia, have been on the rise since spring of 2024 in both adult and pediatric populations[1].

CASE PRESENTATION

A five-year-old male with no significant past medical history presents to the emergency department with shortness of breath following three days of worsening cough, fever and decreased activity. He was seen two days prior to presentation by his pediatrician and was diagnosed with community-acquired pneumonia. He was given a prescription for high-dose amoxicillin (45 mg/kg twice daily) and patient was adherent with medication. His symptoms did not improve. He returned to the emergency department (ED) because he was noted to be breathing "heavily."

In the ED, his temperature was 101° F, a heart rate of 120/minute, and a respiratory rate of 38/minute. His oxygen saturation was 87% in room air. Physical exam was remarkable for decreased breath sounds bilaterally in the lung bases, with scattered crackles and wheezes. He was able to say 3-4 words between episodes of coughing. The remainder of his physical exam was unremarkable. A chest X-ray showed patchy areas of consolidation and perihilar infiltrates.

He was placed on two liters of oxygen via low flow nasal cannula which improved his oxygen saturations to 90-94%. He was given

acetaminophen for his fever, IV Ampicillin/Sulbactam (Unasyn® 300 mg/kg/day divided every 6 hours) was started and patient was hospitalized. On day two of hospitalization, after receiving three doses of IV Ampicillin/Sulbactam, he was not improving and continued to need supplemental oxygen. His physical exam remained unchanged. Due to the lack of improvement and findings of diffuse crackles and wheezes on physical exam, *M. pneumoniae* infection was suspected. A respiratory pathogen panel was performed and was reported positive for *M. pneumoniae*. He was started on azithromycin (10 mg/kg). By day 3, he was weaned off supplemental oxygen as his respiratory symptoms improved. He was discharged home with instructions to complete azithromycin for a total five-day course.

DISCUSSION

Once regarded as an infection that primarily affected school-aged children and adolescents, *M. pneumoniae* pneumonia is now being seen more frequently in infants and toddlers. Data collected from the Center of Disease Control (CDC) show that from January 2024 to November 2024, the discharge diagnosis of *M. pneumoniae* infections increased from 0.4% to 7.6% in children ages 0-1, from 0.3% to 7.0% in children ages 2-4, and from 2.2% to 7.6% in children ages 5-17.[1] In 2024, the diagnosis of *M. pneumoniae* infections peaked in August in children ages 2-4 and 5-17. However, at the time of writing this article, the diagnosis of *M. pneumoniae* infections is peaking in some of the most vulnerable children, infants ages 0-1 year of age. Given these increasing numbers, it is important for clinicians to be familiar with the epidemiology, presentation, diagnosis, and treatment of *M. pneumoniae* infections, including pneumonia.

EPIDEMIOLOGY

Mycoplasma pneumoniae is a bacterium that causes an atypical community-acquired pneumonia. It is transmitted via respiratory droplets with outbreaks occurring in places with close contact including schools, college dorms, prisons, nursing facilities, hospitals, and military barracks. It affects all age groups but most commonly affects children ages 5-17. About 2 million infections occur each year in the United States, though many infections go undetected due to lack of point-of-care testing and mild clinical presentation.[2] Per CDC data, since Spring 2024, the number of positive tests has increased from 0.7% to 3.3% for all age groups.[1] The best methods for preventing the spread of *M. pneumoniae* are appropriate hand-washing, good cough etiquette by covering mouth and nose when coughing or sneezing, and wearing masks.

PRESENTATION

Infection with *M pneumoniae* is usually mild and self-limiting. The incubation period ranges from 1-4 weeks, which is longer than for most pathogens. Symptoms of infection are non-specific and can include, but are not limited to: fever, rhinorrhea, cough, pharyngitis, tracheobronchitis, otalgia, headache, and malaise. Cough can persist for 3 to 4 weeks, which can be distressing to children and their families.[3] Extrapulmonary manifestations include erythema multiforme[4] and reactive infectious mucocutaneous eruptions (RIME)[5,] hemolysis due to IgM cold agglutinins[2], arthralgias[6], and GI disturbances. Cardiac manifestations include pericarditis, myocarditis, endocarditis, and cardiac tamponade.[7] Another disease process caused by *M. pneumoniae* that has garnered attention is Mycoplasma-induced Acute Disseminated Encephalomyelitis (ADEM).[8,9]

Physical exam findings are non-specific and can include scattered rales and wheezes or decreased aeration throughout lung fields. Some extrapulmonary physical exam findings include oropharyngeal erythema, erythematous maculopapular rash, and bullous myringitis.

DIAGNOSIS

Diagnosis of *M. pneumoniae* pneumonia is mostly made in the outpatient setting based on history and physical exam. It is often diagnosed after there is lack of improvement on empiric treatment of community-acquired pneumonia with beta-lactams such as amoxicillin. There is no approved point-of-care testing for *M. pneumoniae* in the United States. However, it is included on many respiratory pathogen panels that utilize PCR testing. These tests are more commonly used in EDs and hospitals. The remainder of the bloodwork may be normal, or it may show hemolysis, and/or there may be elevated inflammatory markers such as CRP or procalcitonin. Given that many of the laboratory findings are non-specific or may not be present, labs tests are not usually required to make the diagnosis. Chest x-ray findings are also non-specific and not necessary for diagnosis. The most common chest x-ray findings are unilateral or bilateral patchy areas of air-space opacification or a diffuse reticulonodular pattern.[10]

TREATMENT

Antimicrobial treatment is not necessary in all cases of *M. pneumoniae* pneumonia. When antimicrobial treatment is needed, macrolides, most commonly azithromycin, are the first-line treatment. *Mycoplasma pneumoniae* does not have a cell wall, which makes it resistant to beta-lactam antibiotics that act by disrupting cell wall synthesis.[2] Fortunately, macrolide resistance remains low in the United States; especially compared to other parts of the world such as Asia.[11] Though not commonly used in pediatrics due to their side effect profiles, doxycycline and fluoroquinolones can also be used for treatment of *M. pneumonie* infections. Supportive care should also be encouraged.

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Congratulations to FCAAP's 2025 Resident Forum Abstract Winners

Pediatric residents from throughout the state of Florida gathered for a full day devoted to their education at the Pediatric Resident Forum on Saturday, August 30 as part of the Florida Chapter of the American Academy of Pediatrics' annual conference, The Future of Pediatric Practice 2025.

A highlight of the Resident Forum was the Resident Abstract Presentations. FCAAP invited Residents from across Florida to submit original abstracts in one of three categories: Original Research (including advocacy), Quality Improvement Projects, and Case Reports. Residents presented their posters and ideas to a panel of distinguished doctors who selected the best presentations in each category for top honors. A total of 4 Original Research, 7 Quality Improvement, and 43 Case Report abstracts were accepted.

Congratulations to all of the resident presenters, especially Dr. Natalie Jennings - Nicklaus Children's Hospital (First Place in Case Report - Calcium Crisis: Severe Symptomatic Hypercalcemia in the Recovery Phase of Rhabdomyolysis), Dr. Gabriel Rodriguez-Santiago - Baycare Health at St. Joseph's Children's Hospital (First Place in Original Research - Prenatal Patent Ductus Arteriosus (PDA) constriction as a prognostic factor for developing congestive heart failure (CHF) in Hypoplastic Left Heart Syndrome (HLHS)), and Dr. Katherine Douglas - Baycare Health at St. Joseph's Children's Hospital (First Place in Quality Improvement - Social Work Integrated Family and Team (SWIFT) Rounds). These winning abstracts will be included in the Fall 2025 edition of The Florida Pediatrician.

Special thanks to our Abstract Reviewers Drs. Corinne Bria, Brittany Bruggeman, Shani Cunningham, Luis Garcia-Chacon, Ivan Gonzalez, Lisa Gwynn, Janet Jenkin, Michael Muszynski, Puneet Tung; and Resident Forum Judges Drs. Rana Alissa, Corinne Bria, Brittany Bruggeman, Brandon Chatani, Shani Cunningham, Luis Garcia-Chacon, Ivan Gonzalez, Lisa Gwynn, Janet Jenkin, and Sharon Dabrow.

Calcium Crisis: Severe Symptomatic Hypercalcemia in the Recovery Phase of Rhabdomyolysis

Natalie Jennings, DO; Kristen Valdes, MD; Christian Martinez, MD; Madison Rhodes, DO
Nicklaus Children's Hospital

RESIDENT - CASE REPORT | FIRST PLACE

INTRODUCTION

Hypercalcemia is an uncommon finding in the pediatric population and can present significant diagnostic and therapeutic challenges. Few pediatric cases of treatment-resistant hypercalcemia have been reported in medical literature. This case report describes a rare instance of severe, symptomatic hypercalcemia in a pediatric patient while recovering from acute kidney injury (AKI) secondary to influenza-induced rhabdomyolysis.

CLINICAL CASE SUMMARY

A 16-year-old healthy female was admitted to the pediatric intensive care unit (PICU) for respiratory distress, heart failure, and acute kidney injury secondary to rhabdomyolysis in the setting of Influenza A. During her hospitalization, renal biopsy showed acute tubular necrosis secondary to rhabdomyolysis. She was started on hemodialysis, which lead to improvements in both renal and cardiac function. She was discharged home with Amlodipine, Calcium Carbonate as a phosphate binder, Epoetin Alfa, and Paricalcitol. As an outpatient, she was gradually weaned off hemodialysis.

One week later, she presented to clinic with dizziness, nausea, and vomiting and was found to have severe symptomatic hypercalcemia (16.2 mg/dL). She was promptly admitted for further management. Electrocardiography (ECG) revealed normal sinus rhythm with prominent J point elevation in the anterior precordial leads, consistent with severe hypercalcemia. Despite treatment with escalating doses of Calcitonin, she developed calciphylaxis. Although hemodialysis was not required for renal function support, it was performed in an attempt to lower serum calcium levels. Given her lack of response to prior interventions, a single dose of Zoledronic Acid was administered, resulting in subsequent improvement of calcium levels. She was discharged home with close nephrology and cardiology follow up, and a repeat ECG was normal.

DISCUSSION

Abnormal calcium metabolism is a known complication of acute kidney injury. When associated with rhabdomyolysis, it typically follows a biphasic pattern characterized by hypocalcemia during the oliguric phase and hypercalcemia during the diuretic/recovery phase. The mechanism of hypercalcemia is thought to be due to calcium mobilization from injured muscle or from bone due to secondary hyperparathyroidism. Mild hypercalcemia can be managed with supportive care, but if severe, may require calcitonin, bisphosphonates, or dialysis. Our literature review identified six other cases of hypercalcemia >15 mg/dL associated with rhabdomyolysis AKI requiring aggressive intervention, with the highest previous pediatric case at 15.6 mg/dL. Our patient developed profound, symptomatic, treatment-resistant hypercalcemia of 16.2 mg/dL, the highest documented calcium level in a pediatric patient.

LESSONS LEARNED

Although calcium derangements following a biphasic pattern are a known complication in the recovery phase of rhabdomyolysis, it rarely progresses to severe symptomatic hypercalcemia. This case highlights the need for vigilance in pediatric patients recovering from rhabdomyolysis. Bisphosphonates like zoledronic acid may be necessary for refractory cases. Increased awareness can improve outcomes and inform management strategies for severe hypercalcemia in this setting.

Prenatal Patent Ductus Arteriosus (PDA) Constriction as a Prognostic Factor for Developing Congestive Heart Failure (CHF) in Hypoplastic Left Heart Syndrome (HLHS)

Gabriel Rodriguez-Santiago, DO
BayCare Pediatrics at St. Joseph's Children's Hospital

RESIDENT - ORIGINAL RESEARCH | FIRST PLACE

BACKGROUND

HLHS is a critical congenital heart defect characterized by underdevelopment of the left side of the heart, leading to inadequate systemic circulation. With rates several times higher than other congenital anomalies like chromosomal abnormalities and neural tube defects, cardiovascular anomalies, including HLHS, account for a substantial proportion of mortality in the first year of life. Mortality rates for critical congenital heart diseases are linked to various factors, including delayed diagnosis and challenges in early intervention, both of which impact the likelihood of severe complications like CHF.

Due to advancements in prenatal diagnosis and neonatal cardiac care, survival rates have significantly improved for HLHS patients, with current estimates showing that 70-80% of neonates with HLHS survive into adulthood. Despite these improvements, the high risk of CHF remains a significant hurdle. CHF develops progressively in HLHS patients, often becoming the primary indication for heart transplantation in these cases. Identifying predictive factors like PDA constriction can potentially stratify patients by risk, facilitating individualized treatment planning. Determining the relationship between PDA constriction and long-term CHF outcomes could guide clinicians in timing interventions and assessing risk for adverse outcomes associated with CHF. While PDA constriction in a normal fetus can lead to blood redistribution to the left heart, constriction in an HLHS fetus increases afterload, potentially resulting in Right Ventricle (RV) dysfunction.

SPECIFIC AIM

Aim is to determine whether ductal Pulsatility Indices (PI) in HLHS fetuses differs significantly from that in normal fetuses, potentially enabling early detection of ductal constriction by establishing a range of PI for HLHS fetuses. Additionally, we studied whether a 'normal' or low PI may serve as an early marker for ductal constriction as well as associated signs of early congestive heart failure (CHF) as defined by holosystolic Tricuspid Regurgitation (TR).

METHODS

Retrospective chart review of fetal echocardiograms for determination of PI, gestational age, and signs of TR in HLHS fetuses. Holosystolic TR was used as a sign of early RV dysfunction. From this review – correlational analysis was performed of PI, gestational age, and signs of TR to determine general trends including mean, median, and mode for the PI between the study groups of HLHS with TR and without TR as well as compared to standard PI in normal fetuses.

DESCRIPTION

This study builds on established research regarding congenital heart anomalies, particularly HLHS, and aims to identify prognostic indicators associated with long-term complications like CHF. Existing literature has demonstrated that HLHS, one of the most severe congenital heart defects, is associated with a high risk of mortality and significant health challenges. Early detection has proven beneficial, associated with improved renal function, reduced neurological events, and enhanced preoperative health. However, CHF remains a prevalent outcome in HLHS patients, often necessitating heart transplantation.

By analyzing retrospective data, this study will also contribute to the growing body of knowledge on HLHS management, helping to fill gaps in predicting adverse outcomes and aiding in early intervention strategies.

Social Work Integrated Family and Team (SWIFT) Rounds

Katherine Douglas, DO, Jennifer Casatelli, MD, Ryan Dean, MD
BayCare Pediatrics at St. Joseph's Children's Hospital

RESIDENT - QUALITY IMPROVEMENT | FIRST PLACE

BACKGROUND

Length of stay (LOS) is an important marker for both patients and hospitals. Prolonged LOS has been linked to increased risk of mortality, hospital acquired infections, and mental health issues. Furthermore, patients, caregivers, and healthcare workers express greater confusion and frustration with extended LOS. Since hospital stays account for approximately one third of healthcare costs in the United States, ways to improve efficiency are paramount to success. Addressing the factors that lead to acute care admissions is a key strategy for reducing LOS. Kids that screen positive for social needs are one third more likely to have inpatient visits. Patient-centered care has become the gold standard of hospital care and has been endorsed by the American Academy of Pediatrics as the preferred patient care model. Specifically, Family Centered Rounds and an interdisciplinary approach have been shown to decrease LOS and improve patient outcomes.

AIM

The objective of this project was to decrease the LOS for patients already hospitalized for over 6 days by an average of 0.5 days over a 3-month period.

METHODS

This quality improvement project integrated care coordination and patient care leaders (PCL) into primary medical team rounds once per week during "Social Work Integrated Family and Team (SWIFT) Rounds".

Patients on the resident inpatient wards service admitted for greater than 6 days were included. These patients were identified by care coordination and confirmed with the PCL and medical team. SWIFT rounds were then scheduled for the next available weekday during regular rounds. During SWIFT rounds, the resident managing the patient gave a brief presentation of the diagnosis and medical plan of care, then asked care coordination, PCL, and family to address any concerns or barriers to discharge. Plans for patient discharge were discussed, and assignment of tasks was summarized by the medical team. Patient demographics were recorded by care coordination in HIPPA compliant database, and repeat SWIFT rounds were scheduled every 7 days if patient remained admitted. Baseline data was collected from July 1, 2024 until November 15, 2024, and the PDSA cycle ran from December 5, 2024 until March 1, 2025.

RESULTS

During the pre-intervention phase, 27 patients were hospitalized for >6 days and their average LOS was 22.6 days. During the PDSA intervention, 29 were eligible for SWIFT rounds.

Fifteen patients completed SWIFT rounds with an average LOS of 20.7 days.

CONCLUSION

This first cycle data demonstrated that SWIFT rounds had a positive impact on LOS, decreasing it by an average of 1.9 days. However, only half of all patients eligible for SWIFT rounds participated, thus limiting interpretation of the data. Nonetheless, the overall downtrend in LOS is encouraging. Future cycles of this project include developing new ways to identify eligible patients, and surveying teams to evaluate the impact on staff who participate.

FPP2025 Medical Student Forum Wrap Up

The University of Florida Department of Pediatrics, in partnership with the University of Florida College of Medicine Office of Educational Affairs and FCAAP, proudly hosted the 11th Annual Pediatric Medical Student Research Forum over Labor Day weekend at FCAAP's annual conference, The Future of Pediatric Practice 2025, in Orlando, Florida. This was truly a national stage, with over 60 students across the country and beyond, providing a platform for showcasing innovative pediatric research. The depth, quality, and creativity reflected in the presentations were truly inspiring.

We extend our sincere gratitude to our keynote speaker, Dr. Laura Jacobsen, Associate Professor of Pediatrics at the UF College of Medicine, for delivering an uplifting and motivational message to the students. We are also deeply appreciative of our dedicated UF faculty judges — Drs. Molly Posa, Maria Kelly, Kristin Dayton, Laura Jacobsen, Puneet Tung, Tim Foster, and Renee Modica — whose time, expertise, and thoughtful feedback were essential in supporting and inspiring our participants. And a heartfelt thank you goes to our Student Forum organizers Dr. Rashmin Savani, Dr. Thao Vu, and Mr. Larry Compton of the University of Florida College of Medicine for their hard work.

Among the many outstanding oral and "power talk" presentations, we are proud to recognize the individuals below for their exceptional contributions. The winning abstracts will be published in the Fall edition of The Florida Pediatrician journal.

ORAL PRESENTATIONS

- First Place – Sarrinah Saif – University of Florida
- Second Place – Ashley Pietra – University of Colorado School of Medicine
- Third Place – Ruiyang Huang – University of Miami Miller School of Medicine
- Third Place – Savannah Zettler – University of Florida College of Medicine

POWER TALK PRESENTATIONS

- First Place – Jessica Munck – University of Connecticut
- First Place – Heushler Moise – University of Florida
- Second Place – Erjola Toska – Nova Southeastern University
- Third Place – Kalie Nuss – University of South Florida
- Third Place – Kelly Arnold – Florida State University

We are confident that each participant left the forum inspired to advance pediatric care and discovery. Thank you to everyone who made this event such a success!

First Pediatric Use of Moderate Hypothermia with Constant Airway Pressure Management for Donor Lung Preservation in High-Risk Lung Transplantation

Sarrinah Saif; Yuriy Stukov; Jeffrey P. Jacobs; Mark S. Bleiweis; Mohammad Aladaileh; Giles J. Peek; Liam Kugler; Ahmet Bilgili; Mindaugas Rackauskas
University of Florida College of Medicine, Gainesville

STUDENT - ORAL PRESENTATION | FIRST PLACE

INTRODUCTION

Pediatric lung transplantation is a lifesaving option in selected patients with end-stage lung disease. Graft temperature and inflation pressure during preservation are critical factors determining lung function after cold ischemic storage. Maintaining ISHLT-recommended moderate hypothermia reduces the risk of primary graft dysfunction, while maintaining optimal inflation pressures of 12-15 cm H2O during procurement may improve the preservation of donor lungs and minimize the likelihood of atelectasis due to low pressures or barotrauma due to high pressures. The BAROguard lung preservation system (BG) actively maintains the donor lungs at an appropriate and consistent temperature and level of inflation pressure, regardless of external fluctuating variables such as ambient pressure and ambient temperature. We report here the first pediatric use of this novel lung preservation system that maintains both moderate static hypothermia at a constant 4-8°C as well as automated constant airway pressure at 12-15 cm H2O.

METHODS

A 9-year-old boy with a history of high-risk neuroblastoma and hemolytic uremic syndrome complicated by thrombotic microangiopathy resulting in persistent coughing, shortness of breath, and poor oral intake, was listed for transplant. Due to severe clinical deterioration, including sepsis, GI bleeding and right ventricular failure, he was placed on ECMO as a bridge to transplant. After 93 days on the waitlist, donor lungs were obtained from an 8-year-old 32-kg brain-dead donor. The lungs were placed in the BG for transport to the recipient center in an effort to optimize the lungs for transplant.

RESULTS

The total ischemic time for the left and right lung were 294 and 378 minutes, respectively. Post-transplant, the patient remained on VA ECMO for four days before conversion to VV ECMO. Despite multiple significant risk factors, the lung transplant was successful, and the patient was discharged after 187 days on room air.

CONCLUSIONS

These data suggest that active pressure management in combination with reliable, moderate hypothermic lung preservation designed to prevent major complications such as barotrauma, atelectasis, cold ischemic injury, uneven cooling, and physical damage can be used with the explicit purpose of affording the maximum probability of success post-lung transplant. Despite a complicated history and deteriorating waitlist condition, the BG system contributed to success in this high-risk pediatric recipient.

Lactosylceramide Drives Pathological Cardiac Remodeling and Mitochondrial Dysfunction in a Novel in vivo Model of HLHS Heart Failure

Ashley E. Pietra, BS; Mary E. Turner, BA; Genevieve Sparagna, PhD; Anis Karimpour-Fard, PhD; Anastacia M. Garcia, PhD

University of Colorado Anschutz Medical Campus, Children's Hospital Colorado, Aurora, CO

STUDENT - ORAL PRESENTATION | SECOND PLACE

BACKGROUND

The molecular mechanisms associated with heart failure (HF) progression in Hypoplastic Left Heart Syndrome (HLHS) remain poorly understood. Our prior data identified significantly increased lactosylceramide (LacCer) in HLHS patient cardiac tissue and peripheral immune cells. This study assessed whether exogenous LacCer can recapitulate *in vivo*, HLHS-associated pathophysiology. We hypothesize that aberrant LacCer-mediated signaling drives maladaptive cardiac, lung, and immune cell responses that predispose HLHS patients to progressive cardiac dysfunction.

METHODS

A daily dose of 10mg/kg LacCer was delivered to P2 neonatal SD rats by IP injection for 1 week (n= 10 vehicle, n=12 LacCer). Morphometric data was collected and normalized to tibia length. Cardiac mitochondria were isolated from right ventricular (RV) myocardium, and bioenergetics were assessed using the Seahorse Bioanalyzer (Agilent). Normal mass-spectrometry was used to quantify lipid levels. Gene expression changes in RV and lung were assessed using RNA-sequencing.

RESULTS

Exogenous LacCer in vivo is sufficient to: (A) induce RV hypertrophy and increase lung mass, with no significant changes in the left ventricle (LV), (B) impair cardiac mitochondrial maximal respiration and energetic reserve capacity, and (C) significantly alter expression of genes associated with immune and inflammatory responses in the heart and lung, and metabolic remodeling specifically in the heart.

CONCLUSIONS

These data suggest that even in the absence of hemodynamic stress, LacCer plays a role in modulating cardiac dysfunction and lung inflammation *in vivo*, highlighting a novel rodent model that recapitulates unique aspects of HLHS pathophysiology.

Recurrent Intraoperative Bronchospasm Associated with Intra-Arterial Chemotherapy for Retinoblastoma in a Pediatric Patient

Ruiyang Huang, B.S; Pragat J. Muthu, B.S.; Maria Jovita Najera Diaz, M.D., Assistant Professor of Anesthesiology, Department of Pediatric Anesthesia, Perioperative Medicine, and Pain Management
University of Miami Miller School of Medicine, Miami

STUDENT - ORAL PRESENTATION | THIRD PLACE

INTRODUCTION

Intra-arterial chemotherapy (IAC) has become an increasingly popular approach for treating advanced retinoblastoma. It offers targeted drug delivery and reduced systemic toxicity when compared to systemic chemotherapy. Respiratory complications are rare, but this case presents a patient who experienced recurrent episodes of intraoperative bronchospasm possibly linked to an anatomical variation.

CASE PRESENTATION

A 6-month-old female with Group D retinoblastoma in her right eye underwent five cycles of IAC within 6 months of diagnosis. Due to failed visualization of the right ophthalmic artery during angiography, infusions were delivered through the internal maxillary artery (IMAX). The patient experienced intraoperative bronchospasm during the first, second, and fifth cycles, each time occurring after chemotherapy administration. Each episode presented with oxygen desaturation, increased airway pressures, and diminished breath sounds, and was resolved with epinephrine and albuterol. No mechanical airway issues or systemic allergic responses were present.

DISCUSSION

Intraoperative bronchospasm during pediatric IAC has been reported rarely and remains poorly understood. This case adds to a small body of literature describing severe and repeat respiratory complications in IAC. In our patient, drug delivery was always via an alternate route through the IMAX. The IMAX lies adjacent to branches of the trigeminal nerve path. We hypothesize that the pulsatile intra-arterial chemotherapy administration near these sensory centers may have triggered a trigeminocardiac reflex, resulting in parasympathetic activation, bronchospasm, and bradycardia. This highlights a risk of IAC and the importance of perioperative preparedness when standard access is not possible during IAC, especially in patients with anatomic variations.

Can't PrEPare, Can't Consent, Can't Prevent: Ethical Considerations for the Differences in Adolescent Consent and Confidentiality Laws Between HIV Treatment and Pre-exposure Prophylaxis (PrEP)

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STUDENT - ORAL PRESENTATION | THIRD PLACE

BACKGROUND & OBJECTIVES

Twenty percent of new HIV diagnoses in the United States between 2018 and 2022 were in those under age 25. Adolescents are especially susceptible to infection and transmission due to their propensity for risky behaviors. Adolescents with HIV are at risk for insufficient antiretroviral adherence, viral suppression, and follow-up. Emtricitabine/Tenofovir Disoproxil Fumarate (TDF/FTC) received FDA approval in 2005 for HIV treatment in anyone over age 12, and in 2018 for HIV pre-exposure prophylaxis (PrEP) in the same population and dose. While U.S. state laws protect an adolescent's ability to confidentially consent to testing and treatment for sexually transmitted infections (STIs), including HIV, adolescents' ability to consent without parental involvement to TDF/FTC for use pre-exposure varies. This research synthesizes these current state laws and offers an ethical context for their provisions.

METHODS & ANALYSIS

Variations among state adolescent consent and confidentiality laws for STI/HIV testing, treatment, and prophylaxis are identified. Ethical principles of autonomy, non-maleficence, and justice are applied to analyze the impact of these similarities and differences.

RESULTS

Forty-nine states currently allow those 14+ to consent to STI/HIV testing and treatment. Only 21 states, however, explicitly allow adolescents of any age to consent to PrEP, and 25 states mandate consent protection from disclosure to parents. These discrepancies pose ethical questions regarding a lack of confidentiality in potentially unsafe circumstances, inequitable distribution of medication, and failure to prevent harm to individuals and the public.

CONCLUSIONS

Expanded confidential access to TDF/FTC for adolescents may impart public health benefits and is ethically acceptable.

Acute Iga Nephropathy an a Pediatric Patient with Ulcerative Colitis: A Case Study

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STUDENT - POWER TALK | FIRST PLACE

INTRODUCTION

IgA nephropathy is a nephritic syndrome that results from deposition of immunoglobulin A (IgA) in the mesangium of the glomerulus. Prior research demonstrated evidence that inflammatory bowel disease (IBD) in adults is associated with IgA nephropathy, possibly an extraintestinal manifestation of disease versus baseline inflammatory susceptibility. Less evidence exists to define this relationship in children.

CASE PRESENTATION

A 14 year-old boy with history of UC, on long-term infliximab every eight weeks, was admitted in the setting of dark brown urine for two weeks and bright red blood in the urine for three days. He also endorsed abdominal/back discomfort and recent weight loss. Preceding these symptoms, he had multiple infections, including strep throat four weeks prior. UA showed gross hematuria, bacteria, and proteinuria. Additional findings were notable for creatinine 1.6, hemoglobin 9.0, and elevated anti-streptolysin (ASO); C3 & C4, ANA, ANCA, and MPO were negative. Renal biopsy revealed IgA nephropathy with no evidence of chronicity and C3 deposition from local strep infection. He was treated supportively.

DISCUSSION

This case describes a child with UC who developed IgA nephropathy, previously hypothesized to be an extraintestinal manifestation. Most studies have focused on adults, but children with early onset of IBD are also at risk of renal pathology, as evidenced by this case. Future research should aim at determining underlying pathophysiology and mitigating risk of glomerular disease in children with IBD.

Low-Fidelity Simulation Bag Mask Ventilation Skill Drill (SimBa Drill)

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STUDENT - POWER TALK | FIRST PLACE

BACKGROUND AND OBJECTIVE

Simulation is increasingly integrated into healthcare education, allowing individuals to practice critical skills in a lower-stakes environment. However, there is limited evidence on the effectiveness of simulation-based training in nursing education. The objective of this project is to assess the feasibility of a short 5-min long lo-fidelity simulation scenario in improving nursing comfort with pediatric bag mask ventilation skills.

METHODS AND ANALYSIS

38 nurses from the pediatric and pediatric cardiac ICUs at Shands Children's Hospital participated in this study. Pre-intervention surveys used Likert-style questions to gauge comfort with pediatric BMV. A single, five-minute LFS session, led by a PALS-certified provider, trained nurses on pediatric airway management during their clinical shifts, followed immediately by post-intervention surveys to assess perceived comfort.

RESULTS

All participants held at least one Emergency Life Support certification. Pre-intervention, only 10% had performed BMV ten or more times in the last year, and 21% had not performed it at all. Only 2.6% considered themselves "well-trained" or "expert" at BMV skills, despite of 36% of participants having >5 years of nursing experience. Post-intervention, 86.8% reported improved comfort with BMV, including 78.5% of experienced nurses and 97% of those who had performed BMV five or more times recently.

CONCLUSION

These findings suggest that our LFS drill improved perceived nursing comfort with BMV, regardless of experience or certifications. LFS is a feasible and effective tool for both procedural education and skills refreshing for new and experienced nurses and can easily be incorporated into nursing clinical shifts.

Intussusception in a Child with Rapunzel Syndrome

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STUDENT - POWER TALK | SECOND PLACE

INTRODUCTION

Intussusception occurs when a segment of intestine invaginates into a more distal segment. While most cases are idiopathic, bezoars, including trichobezoars, may serve as rare lead points. Trichobezoars, a type of bezoar, are rare collections of undigested hair in the gastrointestinal tract, often associated with psychiatric disorders such as trichotillomania and trichophagia. These can cause complications including obstruction, perforation, bleeding, appendicitis, pancreatitis, and jaundice. 'Rapunzel syndrome' refers to a trichobezoar extending from the stomach into the small intestine, forming a tail-like projection.

CASE DESCRIPTION

A 4-year-old male with a history of PICA, neonatal abstinence syndrome, global developmental delay, and poor weight gain presented with a 2-day history of severe abdominal pain and vomiting. A firm mass was palpable in the left upper quadrant. Laboratory workup was nonspecific. Imaging revealed a trichobezoar with small bowel-small bowel intussusception. A gastrostomy revealed a large gastric bezoar with an elongated tail extending into the proximal small intestine, characteristic of 'Rapunzel Syndrome'. A jejunal-jejunal intussusception was discovered and reduced.

DISCUSSION

This case highlights the importance of considering trichobezoar as a cause of intussusception as trichobezoar is an uncommon lead point for intussusception and symptoms can present nonspecifically. It also represents clinical demographic considerations to review. CT scanning is the key to diagnosis. Special consideration for treatment exists, as nonsurgical techniques (e.g., air or barium enema) may be ineffective, necessitating surgical intervention. Bezoar and intussusception association are particularly important in patients with history pica, psychiatric disorders, and/or gastrointestinal motility disorders.

Microscopic Polyangiitis Presenting with Chronic Hemoptysis

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STUDENT - POWER TALK | THIRD PLACE

INTRODUCTION

Microscopic polyangiitis (MPA) is a rare autoimmune vasculitis that leads to widespread inflammation of the vasculature supplying many organs. The most common symptoms of MPA are constitutional, followed by those of renal, gastrointestinal, musculoskeletal, and integumentary origin. Pulmonary involvement may be present in up to half of the pediatric MPA cases, though it most commonly presents as an incidental finding without symptoms. There are no current guidelines for diagnosing MPA in pediatric patients.

CASE PRESENTATION

In our case, a 15-year-old female presented with chronic hemoptysis that was initially misdiagnosed as recurrent pneumonia. Despite treatment, her symptoms persisted, warranting a more thorough investigation. After significant workup, her chest CT and renal biopsy were consistent with MPA, and labs revealed a high p-ANCA, which helped support the diagnosis. Because of her delayed diagnosis, our patient progressed to rapidly progressive glomerulonephritis and eventually end stage kidney disease requiring kidney transplantation.

DISCUSSION

This case demonstrates the importance of recognizing the various presentations of MPA in pediatric patients and highlights the need for more documentation and discussion of MPA in the current literature. Though pulmonary involvement is reported in some cases of MPA, it typically does not produce overt symptoms, nor has it traditionally been the initial presentation. In our case, chronic hemoptysis was the primary presentation of our patient's MPA, which introduces a unique consideration for clinical diagnosis. By reporting a new presentation of MPA, this case helps increase early recognition of this condition in pediatric patients, allowing for prompt treatment and prevention of disease progression.

Improving Pediatric Emergency Preparedness in Outpatient Clinics Through Simulation-Based Training

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STUDENT - POWER TALK | THIRD PLACE

BACKGROUND & OBJECTIVES

Pediatric emergencies such as respiratory distress and seizures often present in outpatient settings, where timely intervention is critical. Despite American Academy of Pediatrics (AAP) guidelines, many clinics lack protocols and equipment. This quality improvement project evaluated whether mock code simulations improve perceived preparedness and comfort among clinical and non-clinical staff in managing pediatric emergencies.

METHODS & ANALYSIS

Two pediatric outpatient clinics participated. Pre- and post-intervention surveys measured self-reported preparedness and comfort. Staff completed two mock code simulations followed by structured debriefing and targeted education. Paired two-tailed t-tests compared mean survey scores pre- and post-intervention, with significance set at $p < 0.05$.

RESULTS

44 participants (35 clinical, 9 non-clinical) completed pre-surveys; 22 (15 clinical, 7 non-clinical) completed post-surveys. Clinical staff scores increased significantly from 41.6 to 47.5 ($p = 0.0001$), with greatest gains in PALS comfort, emergency supply location, and airway management. Non-clinical scores rose from 23.7 to 29.1 ($p = 0.0003$), notably in EMS activation, assisting teams, and assessing stability. Minimal change was seen in CPR and communication, areas with high baseline confidence.

CONCLUSIONS

Mock code simulations significantly improved multidisciplinary staff comfort and readiness for pediatric emergencies. Identified gaps included unfamiliarity with equipment, role confusion, and EMS activation. Simulation-based training is an effective, low-cost tool to enhance emergency preparedness and coordination in outpatient pediatric settings.

Health and Wellness Professional Resources

Dairy Every Day is a Healthy Way to Nourish Young Kids

Physician Resource

A Fresh Look at Iodine & Prenatal Brain Development

A Guide to Feeding your Baby for the First Two Years

State of the Science: Dairy Food & Health

Lactose Intolerance: How to Enjoy Dairy Foods with Confidence

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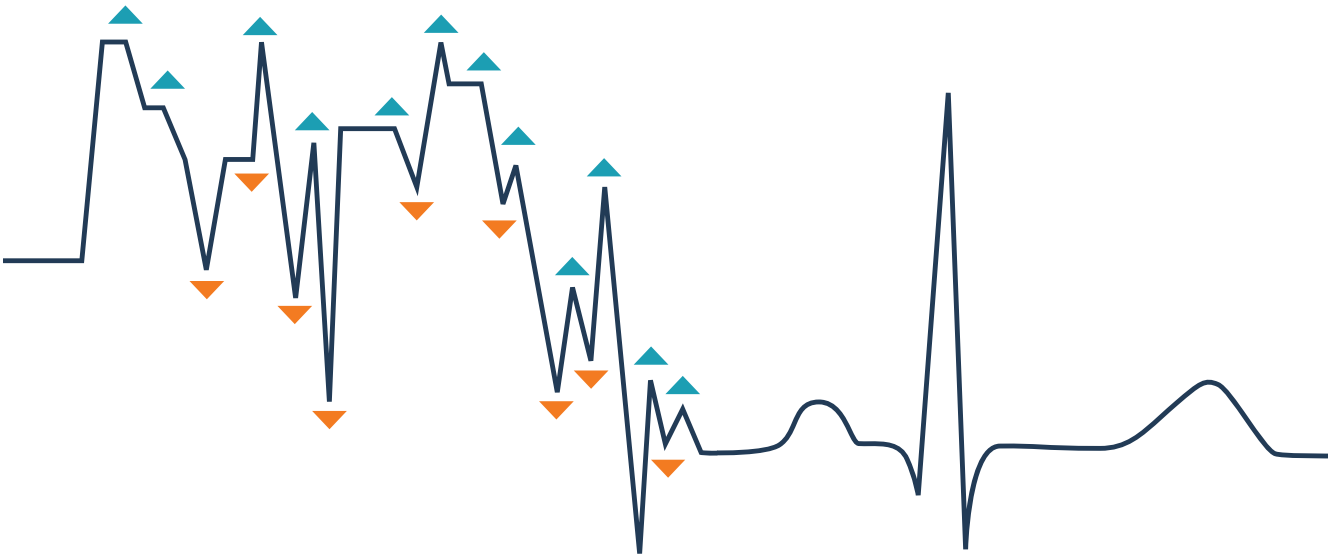

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