Pediatric Section Newsletter

Spring 2016

# Letter from the Pediatric Section Chair



Hello,

Thank you to everyone who worked hard and sent a proposal for CNW 17. The Pediatric Section had some great ideas and I know we had more than a few proposals from the group. It will be interesting to see what gets accepted. Every year the Pediatric Section holds a small meeting separate from the formal Pediatric Section Community Forum. In the past we have titled the meeting The Pediatric Section Leadership Meeting and I believe that confused people. At this informal meeting, section members brainstorm for ideas of proposals to submit for the next CNW. All members are invited. It is great to share some new ideas and to hear what the group wants from the next CNW. It is also an opportunity to get involved. If you want to get involved with the Pediatric Section and network with other talented pediatric professionals, please email me at [kgcorkins@yahoo.com](mailto:kgcorkins@yahoo.com). You don’t need to wait for CNW or have to have a lot of experience, just email me and open the communication and we will find something that is right for you.

Each newsletter we have a short survey and we ask members to complete it and we share the results in the next newsletter. The surveys are informal and we try to ask questions that are helpful to practice. This month’s survey is on Parenteral Nutrition. Please take the 5 minutes to complete the survey to help others in their practice. Also, if you have any ideas for future surveys please email Celina Scala at Celina\_M\_Scala@rush.edu.

Enjoy the summer months with your families.

Sincerely,



Kelly Green Corkins, MS, RD, LDN, CNSC

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Pediatric Section Microsite

Visit the Pediatric Section microsite to access past versions of the newsletter, the Hot Topic of the Quarter survey, current research updates, and much more!

[Pediatric Section Microsite](https://www.nutritioncare.org/Pediatric/)



Member Spotlight: Beth Lyman, MSN, RN, CNSC

**What is your current job title and work location?**

Co-director for the Nutrition Support Team, Children’s Mercy, Kansas City

**What is your educational background?**

MSN in nursing—adult nurse practioner from the University of Missouri-Kansas City

How did you get involved in the field of clinical nutrition?

In 1981, I was in graduate school and needed a part time job with more flexible hours than the medical ICU could give me. The hospital was starting a Metabolic Support Service and needed a nurse who would be a half time FTE with the interest in working part of most weekdays. It seemed a match made in heaven for me in terms of the hours. I soon found out I was good at some things like central line dressing changes and not so good at other things like basic science, metabolic pathways, lab value interpretation—the list goes on. The beauty of that team was in our ability to sort out patient issues with respectful dialogue. I learned quickly to keep my “eye on the ball” to quote Vince Lombardi and the patient is the ball. That has served me well. Eventually, I became full time and spent 50 hours or so every week dedicating myself to my career. In time, children came along and I again needed more flexibility which took me across the street to the pediatric hospital and I have been there for the past 25 years—always busy, always learning, always marveling at how an interdisciplinary team at its best can do such good work.

**What specifically do you do in your current position?**

I currently help with home patient education, transpyloric tube placement, gastrostomy tube management, and patient monitoring. I do less direct patient care and more mentoring as the prospect of retirement looms in the future. I do more research and mentoring of novice researchers. For those who are not currently aware of it, I chair the NOVEL project (New Opportunities for Enteral tube Location) which consumes a good bit of my work and personal life. We are making progress and I chalk that up, again, to a great team of empowered and dedicated professionals –many of whom are ASPEN members.

**Why did you become involved in A.S.P.E.N. and what are the benefits of being involved?**

I joined ASPEN in 1981 because I knew I was not functioning at the level I wanted to be at. I met and still do meet nurses who are so incredibly bright and talented. I stayed a member of ASPEN because of the interdisciplinary nature of the organization where each discipline serves to strengthen those around them. It is an environment of collegiality that cannot be obtained anywhere else.

**What recommendations would you give to someone just starting out in your field?**

1. Join and become involved in ASPEN
2. Read the literature
3. Become a clinical expert
4. Start small but do research to add evidence to guide our practice
5. Share what you know and help others to become stronger because we all need to keep our eye on the ball!

Results from the Input on Clinical Nutrition Week 2016 and 2017 Hot Topic of the Quarter Survey

1. **Did you attend Clinical Nutrition Week 2016 in Austin, Texas and if so how?**
   1. In Person 53.66%
   2. Web Attendance 0%
   3. No 46.34%
2. **If you attended in person, what is the most beneficial part of attending Clinical Nutrition Week?**
   1. Attending educational sessions 68.18%
   2. Networking 27.27%
   3. Other 4.55%
      1. Both reasons are equally beneficial
3. **Did you attend the Pediatric Section Group meeting at CNW?**
   1. Yes 36.36%
   2. No 63.64%
4. **If yes, what did you enjoy about the meeting?**

Networking and brainstorming new ideas, interesting speaker, collaboration with other pediatric

colleagues

1. **If you attended Clinical Nutrition Week but did not attend the Pediatric Section meeting, why not?**
   1. Conflicted with another program 66.67%
   2. Not interested 6.67%
   3. Other (add comment box) 26.67%
2. **If you did not attend, what may interest you in attending in the future?**

Interesting meeting topics, in advance knowledge of the meeting agenda, more basic education,

different time, a split meeting format with 30 mins of a presentation and 30 minutes of a section

business meeting

New Hot Topic of the Quarter Survey: Parenteral Nutrition Writing and Components

Please complete the survey before it closes on Friday June 24, 2016.

[Parenteral Nutrition Writing and Components](https://www.surveymonkey.com/r/JP5BTSP)

New Opportunities for Enteral tube Location (NOVEL) project Update from Beth Lyman, MSN, RN, CNSC

The NOVEL project members are busy on many fronts right now. Here is a summary of our current projects:

1. Finalizing manuscript submission to the *Journal of Pediatric Nursing* to report results of our homecare survey.
   1. A bit of information to tempt you to check out the manuscript:  28% of the caregivers reported misplacing an NGT at one time or another. This has not been previously reported and is much higher than we would have guessed.
2. Analyzing data from a large retrospective review looking at the use of pH to verify NG tube placement in the NICU population.
   1. Another tidbit to share: It works in this population.  Look for this one in *Advances in Neonatal Care.*
3. Working with 6 centers to develop a multi-center prospective randomized study looking at the use of pH to verify NG tube placement in the NICU population.
   1. The plan is for a summer submission.  More to come on this one.
4. Will soon begin work on an international effort heavily involving our Australian and Canadian colleagues which will focus on the development of a template for home NG tube programs.

We continue to advise inventors and those interested in developing technology to assist with NG tube placement verification.

ASPEN members who are involved:  Peggi Guenter, Gina Rempel MD, Wendy Sevilla MD, Lori Duesing RN PNP, Deb Brandon RN PhD, Leslie Parker RN PhD, Beth Lyman RN MSN CNSC

Research Updates-Call for Volunteers!

If you are interested in providing research updates for any pediatric specialty area, such as oncology, nephrology, etc., to be included in the quarterly newsletters please contact Celina Scala at [Celina\_M\_Scala@rush.edu](mailto:Celina_M_Scala@rush.edu).

Pediatric GI Research Updates

Provided by Marisa Dzarnoski Riley, RD, CNSC

**Food Intake Adequacy in Children and Adolescents with Inflammatory Bowel Disease**

Study design: Cross- Sectional Study

This was a cross-sectional study analyzing the clinical, laboratory and nutritional status, as well as dietary intake, of 68 children under 18 years of age with IBD (mostly Crohn’s disease). Diets of children with IBD generally did not meet RDA recommendations for carbohydrates, calcium, magnesium, Vitamin A, Vitamin E and fiber. Compared to nationally-derived healthy child comparisons, children with IBD consumed lower calories, carbohydrates, magnesium, Vitamin C and fiber. Children who received nutrition supplements fared better with macro and micronutrient intake, but were also more nutritionally compromised and had lower albumin, ferritin and zinc levels.

*Hartman C, Marderfeld L, Davidson K, Mozer-Glassberg Y. Food Intake Adequacy in Children and Adolescents with Inflammatory Bowel Disease.*

**Weaning Off Prognosis Factors of Home Parenteral Nutrition for Children With Primary Digestive Disease**

Study Design: Retrospective

This was a retrospective study including 151 children less than 16 years of age who were on home parenteral nutrition (HPN) due to a primary digestive disease. The primary purpose of the study was to describe indications for HPN and identify characteristics associated with ability to wean off of HPN. A majority of those patients on HPN had short bowel syndrome (68%). Those with less than 40cm of small bowel remaining, less than 50% of colon remaining or receipt of daily lipids above 1.5g/kg/day had poorer prognosis for weaning. At the end of the study, probability of weaning off HPN was 0.73 (95% CI 0.54-0.84). Based on the study, the authors also suggest that oral intake may be a prognosis factor in weaning from HPN as well, as it can be considered a sign of improving intestinal health.

*Petit LM, Girard D, Ganousse-Mazeron S, Talbotec C. Weaning Off Prognosis Factors of Home Parenteral Nutrition for Children With Primary Digestive Disease. J Pediatr Gastroenterol Nutr. 2016; 62: 462-468.*

**Early Mucosal Healing with Exclusive Enteral Nutrition is Associated with Improved Outcomes in Newly Diagnosed Children with Luminal Crohn’s Disease**

Study Design: Prospective Cohort

This was a prospective cohort study intended to identify factors predicting sustained remission in children with luminal crohn’s disease. Fifty four newly diagnosed children who were treated with exclusive enteral nutrition (EEN) and early thiopurines (TPs) were followed for a median of 46 months. Children who experienced complete mucosal healing after EEN induction had the greatest sustained remission rates at 1, 2 and 3 years post induction compared to those with active endoscopic disease. Clinical and biochemical remission were not predictive of sustained remission.

*Grover Z, Burgess C, Muir R, Reilly C. Early Mucosal Healing with Exclusive Enteral Nutrition is Associated with Improved Outcomes in Newly Diagnosed Children with Luminal Crohn’s Disease. J Crohns Colitis. 2016. Epub ahead of print.*

Neonatal Research Updates

Provided by Jackie Wessel, Med, RDN, CNSC, CSP, CLE

Manifestations of Cow’s Milk Protein Intolerance in Preterm Infants

Study Design: Retrospective

This important article attempts to give us information about some of the intolerances that 3 to 7% of preterm babies have that are difficult to diagnose. This was a retrospective study looking at infants on parenteral nutrition in a level III nursery. Cow Milk Protein Intolerance (CMPI) was diagnosed based on persistent feeding intolerance that resolved after a change of feeds from intact protein to either complete protein hydrolysate or amino acid formula. Five percent of 348 infants studied in a 12 month period were diagnosed with cow milk protein intolerance. Nine of the 14 infants were initially diagnosed with NEC. After recovery they still had feeding intolerance that resolved after a change to a complete hydrolysate or amino acid formula. Although this is a retrospective study this is important to recognize the role of problems with intact cow milk protein. These infants had recurrent episodes of parenteral nutrition and had prolonged hospitalizations. CMPI had presenting symptoms from feeding intolerance, hematochezia, and pneumatosis intestinalis to acute abdomen and septic shock.

This paper gives credence for the role of more elemental formulas in patients status post GI problems. Historically as these formulas have protein and calcium/ phosphorus amounts are designed for term babies, there has been reluctance to use them in some nurseries. However even these formulas can deliver more calcium and phosphorus than parenteral nutrition (PN), and decreasing the time on PN can reduce risk of infections and other morbidities.

*Cordova, J, Sriram S, Patton T, et al. Manifestations of Cow’s Milk Protein Intolerance in Preterm Infants. JPGN 2016, 62:140-144.*

**A Retrospective Analysis of the Effect of Human Milk on Prevention of Necrotizing Enterocolitis and Postnatal Growth**

Study Design: Retrospective

This was a retrospective study of patients in one NICU that has kept good records of their necrotizing enterocolitis (NEC) rate. With an increase in their rate over two years, this nursery introduced a protocol to use donor human milk to supplement maternal milk in VLBW infants. This study was done to analyze the change in their NEC rates and to review the trends in growth. Although there is not conclusive evidence that the increased use of human milk through their donor milk program was the reason, there was a significant decrease in their NEC rate. This however was also associated with a decrease in growth rate in infants who received significant human milk even though the human milk was traditionally fortified to 24 kcal/oz using human milk fortifiers.

This is an interesting paper that is instructive in detailing the total consequences of the use of more donor milk, and draws attention to the point that optimal fortification should be done with these infants to promote normal growth.

*Chowning R, Radmacher P, Lewis S, et al. A Retrospective Analysis of the Effect of Human Milk on Prevention of Necrotizing Enterocolitis and Postnatal Growth. J Perinatology 2016; 35:221-224.*

**Impact of Donor Milk Availability on Breast Milk Use and Necrotizing Enterocolitis Rates**

Study Design: Retrospective

This paper examines the impact of the availability of donor human milk in a population based cohort and to see whether this had an impact on rates of breastfeeding at discharge and the rates of necrotizing enterocolitis (NEC). The data analyzed was from the California Perinatal Quality Care Collaborative. From 2007-2013 donor human milk became available in 55 nurseries, an increase from the previous 27 nurseries that used donor human milk. There has been concern that the use of donor milk would be associated with a decreased rate of breastfeeding at discharge. This study showed a 10% increase in rates of breastfeeding at discharge and a 2.6% decrease in NEC rates. This paper acknowledges that there are other factors that may have contributed to the changes in the breastfeeding and NEC rates, specifically the breastfeeding rate in general increased and there was a drop on NEC rates among hospitals that did not transition to using donor human milk in the period studied. There was also an increase in International Board Certified Lactation Consultants (IBCLC) per 1000 births as well.

*Kantorowska A, Wei JC, Cohen RS, et al. Impact of Donor Milk Availability on Breast Milk Use and Necrotizing Enterocolitis Rates. Pediatrics 2016, 137:1-8.*

**Bifidobacterium Breve BBG-001 in very preterm infants: a randomized controlled phase 3 trial**

Study Design: Prospective randomized controlled trial, multicenter

This paper describes the results of the PiPS trial using infants between 23 and 30 weeks gestational age within 48 hours of birth in England. Infants were randomized to probiotic or placebo, with the *B breve* BBG-001 suspended in dilute elemental infant formula in a dose of 8.2 to 9.2 log 10.  The placebo was the dilute formula alone. The primary outcome was necrotizing enterocolitis (NEC) stage II or III, blood culture proven sepsis more than 72 hours after birth and death before hospital discharge. In this trial there was no benefit seen with the use of this probiotic in this dosing range and does not support the routine use of this probiotic in premature infants. There are many issues with the use of probiotics and this detailed paper is helpful in clarifying this complicated issue.

*Costeloe K, Hardy P, Juszczak E, et al. Bifidobacterium Breve BBG-001 in very preterm infants: a randomized controlled phase 3 trial. Lancet online* [*http://dx.doi,org/10.1016/SP1040-6736(15)01027-2*](http://dx.doi,org/10.1016/SP1040-6736(15)01027-2)*.*

**Food Protein-Induced Enterocolitis Syndrome**

Study Design: Review

This paper is essential for NICU follow up clinic RDs to read. Food Protein –Induced Enterocolitis Syndrome (FPIES) is a rare, non-immunoglobulin E – mediated gastrointestinal food allergy primarily diagnosed in infancy. Acute FPIES reactions present with repetitive vomiting, lethargy, and pallor 1 to 4 hours after food ingestion. Chronic FPIES presents with protracted vomiting or diarrhea or both, with resulting poor growth or weight loss. The pathophysiology is unknown but thought to be immunologic and cellular. The foods that may induce this include cow’s milk or soy formulas, goat’s milk, rice, and oats in the US. Many other foods have been identified in the literature and it does vary by country. Solid food only FPIES was reported in 31% of the infants in one of the US cohorts.

This is an underdiagnosed clinical condition. There are no diagnostic tests that could be done in the Emergency Room as of yet to diagnose this entity. Awareness of this very serious problem is lacking and FPIES is initially often misdiagnosed leading to a delay in diagnosis and increased morbidity. Neonatologists may not be as familiar with this problem as the Pediatric GI and Allergy communities, and RDs may be able to spread the word about this problem. Guidelines are being written currently and should be published within the next year.

*Leonard SA, Nowak-Wegrzyn A, Food Protein-Induced Enterocolitis Syndrome. Ped Clin N Am 2015; 62: 1463-1477.*

**Breast Milk and Food Allergy: Connections and Current Recommendations**

Study Design: Review

This article is a very useful summary of the information on human milk and allergy. It summarizes the most current information on the relationship between allergies and human milk and also reviews the immunology of human milk. There is a good deal of conflicting information in the literature and it is helpful to have it collected in one article even if there is not a definitive answer. This whole topic is not clear, and this review gives insight into why that is the current state. The American Academy of Allergy, Asthma, and Immunology recommendations from the 2014 Sampson paper (J Allergy Clin Immunol 2014 134:1025 e 15) are included as well as the 2012 and 2010 recommendations. This is a comprehensive review and is recommended for all clinicians who work in our field to try to understand this complex topic.

*Hoyt AEW, Medico T, Cummins SP. Breast Milk and Food Allergy: Connections and Current Recommendations. Pediatr Clin N Am 2015; 62:1493-1507.*

**Is Nutritional Support Needed in Late Preterm Infants**

Study Design: Retrospective

This was a review of one institution with level I, II, and III nurseries. This paper does not answer the question of the title, rather it is a description of what happened to the infants and whether they received nutrition support, not whether they should have received nutrition support. In this study 33.5% of late preterm infants received nutrition support. The paper does a nice job of summarizing the enteral/po feeding issues of the late preterm and why they might have further nutrition needs.

*Gianni ML, Roggero P, Piemontese P, et al.* Is nutritional support needed in late preterm infants?. BMC Pediatrics. 2015;15:194-198.

Neurology Research Updates

Provided by Lauren Kronisch, RDN

**Glycemic modulation in neuro-oncology: experience and future directions using a modified Atkins diet for high-grade brain tumors**

Study Design: Review

Current treatments for gliomas, the most common CNS tumor, are scarce; currently, no drug shown to effectively treat gliomas exists. The primary fuel for gliomas is glucose, at greatly increased rates as compared to normal body functioning. Gliomas cannot efficiently metabolize ketones, the primary fuel for the brain in the ketogenic (KD) and related diets (modified Atkins, MCT oil diets). Therefore, ketogenic and related diets may become venerable treatment options for glioma patients. Plentiful research has demonstrated that the KD diet reduces serum glucose, creates ketosis, and decreases IGF-1 circulation. Preclinical study data suggests that the KD and related diets have antitumor effects, possibly via a mTOR mechanism. Existing research studies indicate that implementation of KD or related diet therapy in combination with chemotherapy, radiation, and other therapies may improve outcome for glioma patients in adults, and possibly in pediatric populations, as well.

*Strowd RE, Mackenzie CC, Henry BJ, Kossoff EH, Hartman AL, Blakeley JO. Glycemic modulation in neuro-oncology: experience and future directions using a modified Atkins diet for high-grade brain tumors. Neuro-Oncology Practice. 2015; 2(3): 127-136.*

**Ketogenic diets: New advances for metabolism-based therapies**

Study Design: Review

The ketogenic (KD), medium-chain triglycerides (MCT), modified Atkins (MAD), and the low glycemic index treatment (LGIT) diets have existed as alternative treatment options for intractable epilepsy patients for many years. Typically these diets are not the primary treatment options. This review shows medical teams are increasingly finding the above diet-based treatment options to be good first-line treatments for patients with myoclonic-astatic epilepsy (Doose syndrome), Dravet syndrome, infantile spasms and status epilepticus. As the research body about these diets has grown, so has the research illustrating efficacy. Research continues to investigate the use of the KD in treatment of other conditions such as autism, Alzheimer’s and Parkinson’s diseases, migraines, traumatic brain injuries and amyotrophic lateral sclerosis.

*Kossoff EH, Hartman AL. Ketogenic Diets: New Advances for Metabolism-Based Therapies. Current Opinions in Neurology. 2012 April; 25(2): 173-178.*

General Pediatric Updates

**Early versus Late Parenteral Nutrition in Critically Ill Children**

Study Design: Multicenter, Randomized Controlled Trial

This study involved 1440 critically ill pediatric intensive care unit (PICC) patients either receiving early (within 24 hours of admission) parenteral nutrition (PN) or late (starting after one week of admission) PN. Enteral nutrition was attempted early, fluid volumes were similar and intravenous micronutrients were provided to both groups. The late PN group had a lower rate of new infection, 10.7% vs. 18.5% in the early PN group. The late PN group also had fewer days of ICU stay, earlier live ICU discharge, shorter duration of mechanical ventilation, less patients requiring renal-replacement therapy and shorter hospital stay. Mortality was similar between groups.

*Fivez T, Kerklaan D, Mesotten D, et al. Early versus Late Parenteral Nutrition in Critically Ill Children. The New England Journal of Medicine. 2016;374(12):1111-1122.*

A.S.P.E.N. Mentoring Program

Are you interested in sharing your experience and expertise with another A.S.P.E.N. member? Would you like to learn from a fellow A.S.P.E.N. clinician? If so A.S.P.E.N.’s new mentoring program is right for you! Set up a profile as either a mentor or mentee at the link below to be paired with another A.S.P.E.N. clinician. Don’t miss this great opportunity to network and grow both personally and professionally.

[A.S.P.E.N. Mentoring Program](http://mentorboard.jobtarget.com/ASPEN)

Member Updates and Spotlight

We want to hear from you! The A.S.P.E.N. Pediatric Section group is proud of the many accomplishments of our members and we’d like to highlight what you’re doing. If you have any feedback or ideas, noteworthy awards, presentations, published research, or projects that you’d like to share with our members please let us know by contacting the section group newsletter editor Celina Scala at [Celina\_M\_Scala@rush.edu](mailto:Celina_M_Scala@rush.edu).

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