Letter from the Chair

It is hard to believe that we are into April of 2015. Time flies – hopefully because we are having fun doing our jobs and spending time with friends and family. However, I hope that even though time is flying and is a limited resource, you will still consider giving some of your valuable time and expertise to the Dietetics Practice Section (DPS). Our section needs you!

This issue of Frontier contains descriptions of some of the presentations from CNW 2015. This is a great benefit of being a member of DPS. It brings a part of the meeting to those who could not attend. Even if you did attend CNW 2015 in Long Beach, CA in February, I know it is impossible to attend every session you’d like to….especially if you are like me and stole a couple of hours to go whale watching (yes, we did see whales!).

Congratulations to all the DPS members who received A.S.P.E.N. awards! Now is the time to start thinking about who should be nominated for 2016 awards. Please submit your name and/or the name of a colleague for an award. There are so many members of DPS that I cannot possibly know all the fabulous things that everyone is doing. Blow your own horn and help us get you the recognition you deserve!

Nominations are due late summer and early fall – so take a look around and start nominating! You can complete the nomination yourself and submit directly to A.S.P.E.N. (forms are on the website) or send the name and email of the person you wish to nominate to anyone on the DPS Leadership Council (we are listed in this newsletter and on the website).

If you have a topic that you would like to see addressed in Frontier, email the Leadership Council and also look for a poll coming soon in the DPS section of the A.S.P.E.N. website. We want to provide you with the information that you need to give your patients and clients the best nutrition support care.

Let’s all spring into action and make DPS work for all of us!

Trisha Fuhrman, MS, RDN, LD, FAND
Recognition

There were some excellent dietitian award winners this year at Clinical Nutrition Week. Let’s take this opportunity to recognize some of the leaders in the field of nutrition support. The 2015 Award Winners are:

Harry M. Vars Award Candidate:
Michele Nicolo, MS, RD, CDE, CNSC, University of Pennsylvania School of Nursing
Abstract Title: Clinical Outcomes in Critically Ill Patients Associated with Protein Delivery

Research Trainee Award:
Michele Nicolo, MS, RD, CDE, CNSC, University of Pennsylvania School of Nursing

Abstracts of Distinction:
Katelyn Ariagno, RD
Rosa Hand, MS, RD, LD
Nancy Park, MD, RD
Sandra Austhof, MS, RD, LD, CNSC
Marisa Juarez, MPH, RD, LD
Adele Pattinson, RD, LD, CNSC

The Fresenius Kabi Parenteral Nutrition Grant:
Lori Bechard, PhD, RD, LDN, Clinical Nutrition Specialist, GI/Nutrition, Center for Nutrition, Boston Children’s Hospital, Boston, MA
Title: Safety and Tolerability of Intravenous Fish Oil Lipid Emulsion during Hematopoietic Cell Transplantation in Children

C. Richard Fleming Grant:
Ashley Hayden, MS, RD, LD, CNSC, Senior Clinical Nutrition Specialist, Children’s Mercy Hospital, Kansas City, MO
Title: Enteral Feeding Set Handling Techniques: A Comparison of Bacterial Growth, Time, Labor and Material Costs

A.S.P.E.N. Fellows:
Carol L. Braunschweig, PhD, RD, FASPEN
Ainsley M. Malone, MS, RDN, LD, CNSC, FAND, FASPEN

Distinguished Nutrition Support Dietitian, Service Award:
Cynthia Hamilton, MS, RD, LD, CNSC

Distinguished Nutrition Support Dietitian, Advanced Clinical Practice Award:
Beth Taylor, DCN, RD, LD, CNSC, FCCM

Studying to take the CNSC Exam in 2015?
Resources to help you prepare include:

- Books - A.S.P.E.N. Core Curriculum and Pediatric Core Curriculum
- Online Lecture Series - Clinician’s Compendium to Nutrition Support Therapy
  http://www.nutritioncare.org/Continuing_Education/Self_Study_Programs/Clinicians_Compendium/
- Online Library - http://www.nutritioncare.org/Clinical_Practice_Library/
- Live Seminars - CNW15 Pre-Conference Workshop: Nutrition Support Fundamentals and Review Course, Saturday February 14, 7:00 AM - 4:00 PM.

There is also a recent blog post on the A.S.P.E.N. website with tips on how to effectively study for the test and incorporate your daily knowledge into the studying process.
Read more at: http://blog.nutritioncare.org/study-resources-for-your-first-cnsc-exam-part-2-beyond-the-books/
Micronutrient Alterations

The management strategies of acute kidney injury (AKI) can have a significant impact on micronutrient requirements by altering both the utilization of nutrients and the rate of losses. The mean thiamin loss for a critically ill adult patient receiving continuous venovenous hemodiafiltration (CVVHDF) due to AKI is about 4 mg/24 hours (dialysate flow rate = 1000mL/hr; ultrafiltration = 1000 mL/hr). The daily requirement for thiamin is 1.1-1.5 mg/24 hours and the total body content is usually about 30 mg. Total body thiamin stores could be depleted within 2 weeks in patients receiving continuous renal replacement therapy (CRRT) without supplementation. Copper and manganese are also lost in CRRT but the amount is relatively small and the amount of copper and manganese in the recommended daily dose of multi-trace elements (either via PN or EN) generally matches the daily loss from CRRT.

Metabolism and Renal Replacement Therapy (RRT)

Energy losses can be substantial with CRRT, resulting in increased calorie requirements. Lactate/citrate buffering agents can contribute as much as 500 calories per 24 hours. Most facilities use dextrose-free replacement fluid for dialysis. Most CRRT solutions today do not provide substantial dextrose calories. Dextrose-free dialysate can draw glucose. Dextrose-rich dialysate (1.5-2.5%) can provide dextrose but only 35-45% of dextrose is absorbed. It is important to know what type of fluids the patient is receiving.

Calorie Requirements in AKI:

- In the early stages of critical illness, meeting full calorie requirements does not improve nitrogen balance, reduce muscle breakdown, or urea generation.
- Stable patients (not critically ill) on intermittent hemodialysis (HD) have 10-20% increased calorie energy needs compared to chronic renal failure.

Protein Requirements in AKI:

- Loss of amino acids and peptides in different treatments for AKI:
  - Dialysis 9-13 grams per day
  - CRRT up to 20 grams per day
  - Peritoneal dialysis 5-15 grams per day; more if peritonitis present

Data is not adequate to routinely increase protein above 2 grams per kg for all AKI patients in the ICU. Some patients may benefit (patients with burns, wounds, and multiple surgeries for example). Protein restriction does not decrease urea production in sick patients with AKI.

Summary of Recommendations:

- Calories: 25-35kcal/kg (more during the rehabilitation phase of illness)
Rockin’ Renal with the “Non” Spin Doctors: The Dietitian, Nurse, and Pharmacist

Continued from previous page

- **Protein:**
  - During CRRT: 1.5-2.0 g/kg
  - Not dialyzed: 1.2-1.5 g/kg

Hyperglycemia and inadequate feeding contribute more to elevated urea than protein intake.

References:


Glycemic Control in Hospitalized Patients

Date: Tuesday, February 17, 2015

Educational Level: Intermediate

**Moderator:**
Roland N. Dickerson, PharmD, BCNSP

**Speakers:**
Brian Collier, DO, CSCN, FACS, Chief, Trauma Surgery, Carilion Clinic; Associate Professor of Surgery, Virginia Tech Carilion School of Medicine, Roanoke, VA

Roland N. Dickerson, PharmD, BCNSP, FASPEN, Professor, Clinical Pharmacy, University of Tennessee, Memphis, TN

**Submitted by:** Wendy Phillips, MS, RD, CNSC, CLE, FAND, University of Virginia Health System, Charlottesville, VA

Dr. Collier discussed the 2012 Critical Care Medicine (CCM) guidelines and explained that many guidelines are based on poor evidence. He stressed the importance of glycemic management protocols since insulin is the medication with the largest number of medication errors. Glucose variability is difficult to control and strict adherence to protocols can be difficult. He suggested keeping protocols as simple as possible and utilizing a computerized program.

Dr. Dickerson shared information regarding target glucose ranges and considerations in developing an appropriate nutrition regimen. The Society for Critical Care Medicine (SCCM) guidelines in 2012 listed a goal of <150 mg/dL for most patients with <180 mg/dL for all other patients. A.S.P.E.N. recommends 140-180 mg/dL, as does the American Diabetes Association. When considering a nutrition regimen, look for the obvious sources of extra glucose, such as dextrose-containing IV fluids and medications mixed in dextrose, such as vancomycin. He also recommended switching to an insulin drip when the sliding scale coverage is consistently elevated. As glycemic variability contributes to worse outcomes than hyperglycemia it is important to be conservative with changes in insulin or dextrose administration to avoid big shifts in serum glucose.

Reference:

Iron Status and Neurodevelopment

Dr. Georgieff discussed the critical role of iron status with regards to neurodevelopment. The iron levels are of crucial importance for the developing brain as they have an effect on cognitive and motor skills. Iron deficiency in postnatal and pediatric populations can result in persistent impairments, even after repleting iron stores. Dr. Georgieff provided studies demonstrating how iron deficiency during the postnatal period can lead to behavioral abnormalities (Lozoff et al, 2000).

Brain development is also affected by fetal and neonatal iron deficiency. Decreased maternal iron supply, diabetes during pregnancy and decreased placental iron transfer during gestation may all lead to iron deficiency at birth. Though Dr. Georgieff pointed out that fewer studies have been completed in this area than with postnatal iron deficiency, prenatal iron deficiency can also lead to cognitive impairment and behavioral abnormalities.

The lecture provided studies on the importance of adequate iron levels in pediatric populations; therefore it was beneficial to those who work with such populations or employ associates who evaluate for iron deficiencies. The purpose was not to provide specific levels to strive for or how to increase iron levels but rather the reasoning for the healthcare professional to seek adequate iron levels in their patients.

Micronutrient Deficiencies after Sleeve Gastrectomy

Undergoing a sleeve gastrectomy puts patients at risk for micronutrient deficiencies. Factors that increase risk of micronutrient deficiencies include pre-operative deficiencies, inadequate intake after surgery, altered digestion and absorption, as well as non-compliance with medical nutrition therapy and inadequate supplementation. Dr. Saltzman discussed the prevalence of specific nutrient deficiencies in patients prior to sleeve gastrectomy. He also posed the question of bioavailability versus diet quality in the obese population, since this could affect nutrient status prior to surgery.

Inadequate oral intake after a surgical procedure, because of altered gastrointestinal function, poor appetite, or a physically smaller stomach, can lead to deficiencies as well. Medications to consider that may affect absorption of nutrients include acid reducing medications. Dr. Saltzman highlighted a study linking Vitamin B12 deficiency with Proton Pump Inhibitor use (Lam et al. 2013).

Inadequate nutrient supplementation after surgeries was also emphasized. Dr. Saltzman discussed a study that compared nutrient deficiencies after gastric surgery of those adhering to multivitamin usage (Coupaye et al. 2014).
Dr. Saltzman concluded with the fact that data is limited pertaining to appropriate methods of combating nutrient deficiencies in gastric sleeve patients, but that particular deficiencies may be prevented. I thought that the particular nutrients of concern that were highlighted were useful to consider for the healthcare professional. I think Dr. Saltzman's lecture was useful and interesting due to his specialization in nutrient deficiencies both in post and pre-operative situations.

Micronutrient Monitoring in Long-Term Parenteral Nutrition Patients

Micronutrient needs for long-term parenteral nutrition patients can be difficult to pinpoint due to variability of needs in patients and their circumstances. Monitoring both biochemical and clinical indicators of micronutrient status is essential to the care of the patient and effectiveness of the PN formula used. For example, observing physical status of the patient, including skin, hair, nails and weight help to verify possible micronutrient deficiencies. Additionally, the source and type of laboratory study used need to be considered.

Dr. Rollins discussed the effects of inflammation on micronutrients. Measuring C-reactive protein, for example, concurrently with other laboratory values may provide a better interpretation of the true micronutrient status. Dr. Rollins also highlighted specific micronutrients, how their levels are tested and when they might reach deficient or toxic levels.

According to Dr. Rollins, the timing and basis for monitoring micronutrient levels has little research to support specific recommendations. Utilizing periodic monitoring appears to be appropriate at this time. In her lecture, Dr. Rollins utilized case studies and micronutrient deficiency scenarios to engage the audience, which was an effective way to keep the attention of audience members. Her presentation was valuable to my practice, and the case studies were an interesting and effective way for audience members to maintain interest and focus the large concepts on real-life scenarios.

References


Pediatric Intestinal Failure from the Neonate to the Older Child: When Things Are Not Going Well
Tuesday, February 17, 2015
Learning Level: Advanced

 Moderator:
Jane Balint, MD, Nationwide Children's Hospital

Presenters:
Sharon Collier, RD, LDN, MEd, Boston Children's Hospital
Simon Horslen, MB, ChB, FRCPCH, Seattle Children's Hospital
Jackie Wessel, MEd, RD, CNSC, CSP, CLE, Cincinnati Children's Hospital

Submitted by: Hilary Pelligra, MS, RDN, LD, Rainbow Babies and Children's Hospital, Cleveland OH

This session provided a thorough overview of nutrition in pediatric intestinal failure spanning from neonates to children. The presentation began with discussing neonates with intestinal failure and the importance of early intervention. Accordingly, the use of human milk is stressed as being the preferred form of nutrition for several reasons, including gut adaptation and prevention of necrotizing enterocolitis. During the neonatal period, growth is key; thus, nutritional needs must be met. If a combination of parenteral and enteral nutrition support must be used to meet needs, this is warranted.

The speakers discussed the importance of transitioning to full enteral feeds as soon as possible in order to prevent hepatic damage from long-term parenteral nutrition (PN) usage. Successful weaning from PN can sometimes be predicted from the amount of remaining bowel after resection. The process of weaning from PN often involves the use of continuous enteral feeds first before initiating bolus feeds, with the end goal being to meet all needs orally. With enteral feeds, the clinician must consider formula choice, need for a modular formula to fully meet nutrient needs enterally, involvement of therapies for oral stimulation to retain skills, and the need for fiber to slow transit time in the setting of excessive losses.

Key Points
- Goal is to provide adequate energy and nutrients whether PN-dependent or transitioning to enteral feeds
- Consider formula choice when weaning from parenteral to enteral nutrition
- Must continue to provide oral stimulation regardless of feeding route
- Protocols and team approach are necessary to properly care for this population.

Continuing Education

Need some Continuing Education credits? There are a lot of great A.S.P.E.N. webinars coming up over the next few months. Topics include renal disease, micronutrients, pediatric nutrition support, ordering parenteral nutrition in the electronic medical record and more.

Details and links to more information can be found on the A.S.P.E.N. website at:
http://www.nutritioncare.org/Continuing_Education/Live_Programs/A_S_P_E_N__Webinar_Series/
Critical Care Nutrition: Challenging Cases
Tuesday, February 17, 2015
Learning Level: Advanced

Moderator:
Beth Taylor, DCN, RD, LD, CNSC, FCCM

Presenters:
Tommy Cederholm, MD, PhD, Professor, Department of Public Health and Caring Sciences, Clinical Nutrition and Metabolism, Uppsala University, Uppsala, Sweden
Robert Martindale, MD, PhD, FACS, Chief, Division of General Surgery; Medical Director, Hospital Nutritional Services, Oregon Health and Science University, Portland, OR
John K. DiBaise, MD, Professor of Medicine, Division of Gastroenterology and Hepatology, Mayo Clinic, Scottsdale, AZ
Beth Taylor, DCN, RD, LD, CNSC, FCCM, Nutrition Support Specialist, Surgical ICU, Barnes-Jewish Hospital, St. Louis, MO

Submitted by: Sandra Benton, RD, CNSC, Scripps Green Hospital, La Jolla, Ca

This session was a sampler of challenging cases encountered in the ICU. Dr. Cederholm discussed feeding the geriatric hip fracture patient. Dr. Martindale and Beth Taylor went over general issues encountered in the ICU patient including GI motility in critical illness, gastric residual volume, absorption, and feeding the traumatic brain injury patient. Dr. DiBaise discussed pancreatitis in detail and some of the main points from his portion of the presentation are included below.

The Walking / Talking Patient with Severe Acute Pancreatitis With Infected Pseudocyst: How Sick Can He Be and How Should I Feed Him?

Initial Assessment

Risk factors for severe Acute Pancreatitis (AP):
- Age >55 years
- BMI > 30kg/m2
- Comorbid disease
- Altered mental status
- Presence of SIRS
- Elevated BUN
- Elevated or rising hematocrit
- Rising creatinine
- Pleural effusion

Nutrition in Mild Acute Pancreatitis

Early oral feeding in mild AP appears safe; begin when the pain and nausea have resolved. Normalization of pancreatic enzymes is not a requirement to initiate oral nutrition therapy.

Nutrition in Severe Acute Pancreatitis:

Early enteral nutrition is recommended. Feeds should be given via gastric route when possible. A standard polymeric formula is generally well tolerated. There is not sufficient evidence available to support the utility of immunonutrition or probiotics. Parenteral nutrition should be considered when enteral feeds are not feasible, poorly tolerated, or unable to fully meet nutrient needs.

References:
**Spotlight Interview - Dr. Dudrick**

If you missed the Winter edition of Frontier, you’re going to want to go back and check out the excellent interview Joan T. Healey, MA, RDN, CNSC, did with Dr. Stanley Dudrick. Dr. Dudrick is one of the absolute top leaders in the field of nutrition support and was on the front lines developing successful administration techniques for parenteral nutrition. The stories he tells of developing administration sets at the auto parts store are difficult to believe and definitely entertaining!

If you’ve read the interview and still want more, check out the Oral History Project at the Pediatric History Center of the American Academy of Pediatrics (AAP). The AAP interviewed Dr. Dudrick as part of their oral history series and the transcript is available online at: https://www.aap.org/en-us/about-the-aap/Pediatric-History-Center/Documents/Dudrick.pdf

**Job Postings**

**Registered Dietitian, Nutrition Support, FT Days**  
Center for Human Nutrition  
Vanderbilt Medical Center  
Nashville, Tennessee

**Description**
Participate in an interdisciplinary nutrition support team that services adult patients requiring nutrition support, focusing on the outpatient setting. Assess nutrition status of patients at nutrition risk. Develop, implement and evaluate outcomes of nutrition care plan for patients utilizing oral, enteral, and parenteral regimens. Monitor progress and initiate changes in care plans as required. Participate in the training of dietetic interns and other health care professionals. Participate in collaborative clinical nutrition research and conduct independent research in practice area.

**Basic Qualifications**
This position requires a Master's degree and 3 years of experience or the equivalent. Licensure, Certification, and/or Registration (LCR):
Licensed Dietitian, Registered Dietitian, Certified Discipline Specific

**Apply Online**
Go to: www.vanderbilt.edu/work-at-vanderbilt/ and search jobs (Job number 1410775)

**For Questions**
Please contact Vanessa Kumpf, PharmD (office: 615-322-2737) or Doug Seidner, MD (office: 615-322-7959).

**UF Health Cancer Center at Orlando Health - Specialty Dietitian**

UF Health Cancer Center at Orlando Health offers specialized cancer treatment through a multidisciplinary approach, meaning each patient benefits from the expertise of a team of professionals including medical, radiation and surgical oncologists, pathologists, radiologists, nuclear medicine doctors, advanced practice nurses and other support staff. Qualified Applicants must possess the following:

- Bachelor's Degree from a U.S regionally accredited university or college and coursework accredited or approved by the Commission on Accreditation for Dietetics Education (CADE) of the Academy of Nutrition and Dietetics (AND).
- Registration with the Academy of Nutrition and Dietetics (AND).
- Licensed Dietitian with the State of Florida.
- Specialty Certificate is required and a strong interest in working with oncology patients is essential.
- One (1) year clinical experience as a Registered Dietitian and one (1) year of experience in area of specialty in an Inpatient Hospital setting is preferred.

Visit http://jobsatorlandohca.com/orlando-regional-medical-center or contact Hollie Zammit, RD, LDN at Hollie.Zammit@orlandohealth.com with any questions.
Consider enriching the DPS and increasing awareness and communication between members by authoring a submission to the DPS Newsletter. There are a wide range of items that could be submitted:

- Share clinical pearls or newly developed algorithms, protocols, guidelines, etc
- Review a recent paper in an area of interest to you
- Provide updates on a discussion from the listserv or A.S.P.E.N. Connect
- Announce awards or accolades for your peers or co-workers
- Provide notification of upcoming conferences and continuing education opportunities
- Share nutrition-related outcomes monitoring methods, data and reporting experiences
- Provide a summary of a conference you’ve attended

One of the main objectives of the DPS is for us to network and learn from each other. The more individual involvement we have, the more comprehensive and varied the information provided in the newsletter will be to the group. Please consider getting involved. Contact the newsletter editors or anyone from the leadership team with your ideas, and Thank You!