



CHICAGO AREA SOCIETY FOR PARENTERAL
AND ENTERAL NUTRITION

A Chapter of the American Society for Parenteral and Enteral Nutrition

The CASPEN Connection – Volume 9, Issue 1, Winter 2018



Letter from the President

Thank you for your continued interest and involvement in CASPEN! Our members drive our organization and we are proud to be one of the largest chapters of ASPEN.

I am excited to serve as your CASPEN President for 2018. On behalf of CASPEN, I had the privilege of attending the ASPEN leadership conference and annual ASPEN conference. I met with several other chapter leaders to discuss the successes and challenges of the chapters. I received many ideas and insight on how to make the Chicago chapter even stronger and look forward to a great year!

The CASPEN board is trying to expand its membership to other disciplines, including pharmacists, nurses, and physicians to continue to grow the field of nutrition support in Chicago. Please continue to get your friends, colleagues and co-workers involved with CASPEN; even if they are not dietitians, we are always looking for volunteers!

Here are some benefits in joining CASPEN:

- CASPEN membership is only \$20 after joining ASPEN and permits free admission to all CASPEN programs
- Great networking opportunities with a variety of nutrition support professionals
- Expand your knowledge in nutrition support and critical care nutrition

We wrapped up the 2017 year with our winter event on "Nutrition Assessment for the Registered Dietitian: Changes and Trends in Current Practice." Our speakers were highly knowledgeable in

nutrition and physical assessment and the audience enjoyed the hands-on experience provided.

CASPEN's spring dinner meeting will be held on Wednesday April 25th. The topic will be "Micronutrients: Deficiencies and Current Concerns with Drug Shortages." Our speakers include Beth Shields (clinical pharmacist) and Annie Lin (Adjunct faculty for the Clinical Nutrition program at Rush).

I look forward to seeing you at our next CASPEN spring dinner event!

Marisa Mozer, MS, RD, CSO, LDN, CNSC



CASPEN Member Spotlight

In this issue of the CASPEN Connection, we would like to highlight, Christina Bourikas, Pharm D., BCNSP.

Christina currently works at NorthShore University Health System, Skokie Hospital as a Clinical Pharmacist. She is a true Chicagoan and resides currently in one of our lovely Chicago suburbs. She received her Doctor of Pharmacy from University of Illinois at Chicago and has been practicing in the field of nutrition support for over 20 years. Christina has also been a CASPEN member for over 10 years.

Hey Christina! How has your patient population changed over the past 20 years?

"I have always worked in the acute hospital setting. As a pharmacist, I primarily cover the ICU (medical and surgical) and emergency department but do cover other units as needed. I remember over 20 years ago at least half my patients in the ICU were on TPN. Now I rarely see a patient on TPN in the ICU, which shows the progression in treating our patients."

What do you like best about working as a pharmacist in nutrition support?

"Being part of a multidisciplinary team – MDs, RDs, and pharmacists. Having the support and being able to turn to someone for help and information, especially when dealing with acute patients. I love that I am continuously learning new things from my colleagues."

What area of nutrition support research are you most interested in?

"The area of nutrition support research I am most interested in is anything pertaining to ICU patients and parenteral nutrition. I believe also teaching future generations is important. I enjoy teaching and passing on my knowledge and enthusiasm of parenteral nutrition to students and residents."



Calling all CASPEN Members!

Are you interested in being featured in the next issue of the CASPEN Connection or on our Facebook feature, Member Spotlight Monday?

Contact us at caspenboard@gmail.com or send us an inbox message via our Facebook page at <http://bit.ly/2p4Cl4U>!



Anne Coltman, MS, RDN, CNSC, then provided an in-depth lecture on Nutrition Focused Physical Exam (NFPE). She showed us images of specific nutrient deficiencies and how to look for these in our patients. Her talk ended with everyone practicing NFPE on one another, a great learning opportunity for all involved.

Sandra Gomez-Perez, PhD, RD, joined the seminar to highlight the various methods for assessing body composition in the adult populations. She discussed the pros and cons of various methods such as bioelectrical impedance, dual-energy x-ray absorptiometry, and many others.



Did you miss our last event?

Our Winter Half Day Seminar encouraged CASPEN members to join together to learn more about the various tools used to assess body composition and how to complete a more comprehensive nutrition assessment.

The event started with Brent Nathan, MD, touching upon the well-known history and physical exam as it relates to nutrition, in addition to the items most physicians focus on with regard to nutrition while they are questioning patients.



The seminar concluded with Molly Novak, MS, RDN, and Katie Arduini, RDN, providing a pediatric perspective. They discussed how to conduct a NFPE on pediatric patients and how that might differ from the adult population. By the end of their talk, we were all pros at obtaining mid-upper arm circumference.

Don't miss our Spring Dinner Meeting on Wednesday, April 25th!!!

Join us on April 25th at 5:30 pm. The event will focus on micronutrient deficiencies and current concerns with drug shortages. We can't wait to see you there!!! Venue to be determined!

Are you interested in writing a review for the CASPEN Connection?
Contact us at caspenboard@gmail.com or send us an inbox
message via our Facebook page at <http://bit.ly/2p4Cl4U>!

Review of Literature: High-Dose Vitamin D₃ Administration Is Associated With Increases in Hemoglobin Concentrations in Mechanically Ventilated Critically Ill Adults: A Pilot Double-Blind, Randomized, Placebo-Controlled Trial

Smith EM, Jones JL, Han JE, Alvarez JA, Sloan JH, Konrad RJ, Zughaier SM, Martin GS, Ziegler TR, and Tangpricha V. High-Dose Vitamin D₃ Administration Is Associated With Increases in Hemoglobin Concentrations in Mechanically Ventilated Critically Ill Adults: A Pilot Double-Blind, Randomized, Placebo-Controlled Trial. *JPEN*. 2016; DOI: 10.1177/0148607116678197

Introduction

Anemia is prevalent in the intensive care unit (ICU) being two-thirds of adults are admitted with the diagnosis and many more developing anemia throughout their hospital course. Anemia has been associated with increased risk of mortality and cardiovascular morbidity along with decreased oxygen-carrying capacity resulting in increased time on mechanical ventilation. Blood transfusions are often used to treat anemia in the ICU, but this comes with multiple risks. One lab value monitored to determine the need for a blood transfusion is hemoglobin. Anemia of inflammation is caused by an increase in inflammatory cytokines and hepcidin, which decreases the iron in circulation. Vitamin D has an effect on anemia by reducing proinflammatory cytokines and hepcidin transcription, therefore deficiency is a risk factor for anemia. The objective of this study is to examine the impact of high-dose vitamin D supplementation on hemoglobin and hepcidin concentrations in ICU patients to evaluate vitamin D as a potential therapy in critically ill patients.

Methods

Participants (n=30) were enrolled from a parent study designed to test the efficacy of high dose vitamin D on plasma 25-hydroxyvitamin D concentration levels. This study design was a pilot double-blind, randomized, placebo-controlled trial. The study population for the analysis for the current study was derived from the parent study. Participants were randomized to receive either a placebo, 250,000 IU, or 500,000 IU vitamin D₃ administered through an enteral feeding tube in 5 equal doses over 5 days. Blood was drawn throughout hospitalization (up to 4 weeks) for assessment of plasma 25(OH)D and serum hepcidin concentration using validated and reliable techniques. Statistical analysis was ran using SAS version 9.4 using α of 0.05 for statistical significance.

Results

The median time from admission to enrollment in the study was 4 days. Participants were mostly male, overweight or obese, and approximately half were African American. Most participants had 25(OH)D concentrations < 30 ng/mL and were anemic at enrollment time. The 500,000 IU group had a higher proportion of participants with coronary artery disease as a comorbidity compared to the other groups. Plasma 25(OH)D increased in both 250,000 IU and 500,000 IU groups compared to control. Hemoglobin concentrations significantly increased by 8% per week in the 500,000 IU group, but no significant difference was seen in the 250,000 IU group compared to the control. Prevalence of anemia did not significantly differ between groups throughout weeks of hospitalization. Hepcidin concentrations decreased by 66% in 1 week in the 500,000 IU group compared to baseline at enrollment and significantly was decreased compared to the other two groups. However, there was no statistical significance between either experimental groups and control group

throughout the 3 week period hepcidin concentrations were obtained. The 500,000 IU group showed a significant 10% increase in hemoglobin each week compared to the control.

Discussion

Using a 500,000 IU enteral dose of D₃ showed significant results in decreasing hepcidin concentrations after 1 week of treatment and increasing hemoglobin over time. This may suggest a dose-related effect of vitamin D on these factors. While other research as shown high dose of vitamin D did not affect hemoglobin concentrations in generally healthy adults with iron-deficiency anemia, this study may show that high does vitamin D treatment may be specific to anemia of inflammation. The findings of the effect of vitamin D on hepcidin in this study are consistent with other studies. The mechanism involves hepcidin inhibition by vitamin D and therefore increasing iron recycling by allowing iron to move into the plasma increasing hemoglobin synthesis and erythropoiesis resulting in higher hemoglobin concentrations. While there were significant results from the 500,000 IU group, the 250,000 IU group did not show significant change. This may be related to one of the limitations of the study being that the 500,000 IU group had a higher prevalence of CAD possibly making this group inherently more sensitive to vitamin D therapy's effects on hemoglobin and hepcidin concentrations. Other limitations were the small sample size, enrollment in study after median time of 4 days since ICU admission, original parent study design not using hemoglobin as an outcome, and inability to fully evaluation effect of other anemia treatments given as part of the medical care. Strengths of the study included the rigorous clinical trial design and well-characterized population of study participants.

Conclusion

Using a 500,000 IU dose of vitamin D₃ was associated with a significant increase in hemoglobin concentration over time and an acute decrease in hepcidin concentrations in ICU patients. This study can provide the framework for future large clinical trials of high-dose vitamin D in critically ill patients where hemoglobin is the primary outcome. Further studies are warranted to confirm and evaluate the findings of this study on the therapeutic effect of high-dose vitamin D on anemia of inflammation.



Article Reviewed By:

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Amber is currently a dietetic intern in the DI certificate program at Loyola University. She graduated from Nicholls State University in Louisiana with an Associate's degree in Culinary Arts and received her Dietetics degree from the University of Minnesota. Her interests are in renal, transplant, and oncology. Amber also enjoys community nutrition education and outreach. When she is not at supervised practice, Amber enjoys being outdoors going on trail runs through the forest preserves or in the kitchen creating new tasty (and healthy) recipes!



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A huge shout-out to last year's board of directors and cheers to 2018! We are always looking for volunteers to help with our committees. Please email caspenboard@gmail.com with questions!