

NUTRICIA SATELLITE SYMPOSIUM

A Patient Centered Approach for Optimal Nutritional Care

The Journey to Recovery

2ND SEPTEMBER 2018

 **NUTRICIA**
Advanced Medical Nutrition

Programme Nutricia Satellite Symposium

Time		Who
18.00 - 18.05	Welcome & introductions by the chair	Dr. M. Ballesteros-Pomar (Spain)
18.05 - 18.30	Optimizing the protein balance in the critically ill patient	Dr. A. van Zanten (The Netherlands)
18.30 - 18.55	The importance of timing and dosing in protein delivery on the ward	Prof. E. De Waele (Belgium)
18.55 - 19.20	Nutrition for recovery and beyond	Prof. P. Wischmeyer (USA)
19.20 - 19.30	Concluding remarks and Q&A	All speakers



Dr. María D. Ballesteros-Pomar

Department of Endocrinology and Nutrition, Complejo Asistencial Universitario de León, Spain

Dr. María Ballesteros-Pomar is the coordinator of the steering committee of the Area of Nutrition in the Spanish Society of Endocrinology and Nutrition (SEEN) from 2016. She is also a member of the Steering Committee of the Foundation of the Spanish Society of Endocrinology and Nutrition (FSEEN) and in the Steering Committee of the Society of Endocrinology and Nutrition of Castilla y León (SCLEDYN). She has been a member of ESPEN since 1996 and member of the ESPEN faculty from 2010. She obtained her medical degree in the Autónoma de Madrid University and completed her residency program in Endocrinology and Nutrition in Madrid in Hospital Clínico San Carlos, and then she went back to her hometown, León, where she works as a Clinical endocrinologist in the Complejo Asistencial Universitario de León and HM San Francisco Hospital, León, Spain. From 2013, Dr. Ballesteros-Pomar is the Head of the Clinical Nutrition and Dietetics Unit in the Complejo Asistencial Universitario de León. Her unit has implemented and maintains a Quality Management System which fulfills the requirements of standard ISO 9001:2015 for the following field of activities: The capability of the attendance in Clinical Nutrition and Dietetics to inpatients and outpatients. The performance of clinical research studies and trials and teaching activities in the Clinical Nutrition and Dietetics Unit.

Dr. Ballesteros-Pomar is currently the Director of the Endocrinology and Nutrition Residency Program in Complejo Asistencial Universitario de León, León, Spain, from 2005. She has worked as associate professor in the Department of Nutrition in the Health Sciences school in the University of León and also as assistant professor for the University of Salamanca. She also has a Bachelor's degree in Design and biostatistics for

Health Sciences, from the University Autónoma of Barcelona and gained her PH D in the University Complutense de Madrid in 1998, which was titled "Assessment of nutritional patterns and relationship to cardiovascular risk in the Spanish population". Her research interests involve disease related malnutrition, sarcopenia and obesity. She has received 10 research grants in these fields.

Dr. Ballesteros-Pomar is an Associate Editor in "Clinical Nutrition" from 2013 and in "Endocrinología, Diabetes y Nutrición" since 2018 and also acts as a reviewer for several national and international journals. She is the author of 83 papers in national and international indexed journals and nearly 200 oral and poster communications at national and international meetings (https://www.researchgate.net/profile/Maria_Ballesteros-Pomar). She is one of the Editors of the webapp "Spanish Society of Endocrinology and Nutrition Handbook of Endocrinology and Nutrition" (www.seen.es) and editor of other 3 books, contributing as an author to many other books in the field of Endocrinology and Nutrition. She is one of the contributing authors of the ESPEN guidelines on nutritional support for polymorbid internal medicine patients, published in 2017.

Introduction by the chair

Dear colleagues,

I am pleased to welcome you to the Nutricia-sponsored symposium entitled “A Patient Centered Approach for Optimal Nutritional Care; The Journey to Recovery” at this year’s ESPEN congress.

During the session, three distinguished experts will address critical areas for specialized nutritional intervention in the ICU, ward and post discharge settings.

We will open with a presentation by Dr. Arthur Van Zanten Internist-intensivist at Gelderse Vallei Hospital in Ede, Netherlands. He is also Chief Medical Advisor Hospital Executive Team and hospital Medical Director. Dr. Van Zanten will discuss the importance of protein delivery and optimization of protein balance in the critically ill patient.

The second speaker Prof. Elisabeth De Waele, is an ICU Physician, Surgeon, Nutritionist at the University Hospital Brussels Department of Intensive Medicine Belgium. Prof. De Waele will provide us with insights into the nutritional management of patients during their acute care stay. Furthermore, the importance of timing and dosing in protein delivery on the ward.

We will end the symposium with a presentation from Prof. Paul Wischmeyer who is a Critical Care, Perioperative and Nutrition Physician who serves as a Professor with Tenure of Anesthesiology and Surgery at Duke University School of Medicine in Durham, NC. Prof. Wischmeyer will discuss the

importance of continuum of care post-acute setting through targeted nutritional care, leading to targeted patient centered outcomes in the post discharge phase. The speakers will be glad to answer questions from the audience.

After the symposium, we kindly invite you to join us for the drinks reception outside of Hall 8.

With Kind Regards

A handwritten signature in blue ink, appearing to read 'M. Ballesteros-Pomar', with a long horizontal stroke extending to the right.

Dr. María D. Ballesteros-Pomar
Endocrinology and Nutrition Department
Complejo Asistencial Universitario de León, León, Spain



Dr. Arthur R.H. van Zanten

Department of Intensive Care, Gelderse Vallei Hospital, Ede, The Netherlands

Dr Arthur van Zanten is internist-intensivist and Deputy Chair of the Department of Intensive Care in Gelderse Vallei Hospital in Ede, The Netherlands. He holds the position of Medical Advisor at the Hospital Executive Board and is responsible for Quality and Safety, Acute and Complex Care, and Nutrition, Sports, and Exercise.

Dr van Zanten graduated from the Medical School of the Erasmus University Rotterdam in 1988. After training in Internal Medicine in Rotterdam, he followed a fellowship in Intensive Care Medicine, at the Academic Medical Center of the University of Amsterdam.

In 2008, Dr van Zanten successfully defended his Ph.D. thesis at the Free University of Amsterdam on Infectious Complications in Critically Ill Patients, with a particular focus on clinical, pharmacological and economic aspects.

He was involved in the organizational aspects of Dutch Intensive Care for many years and served as Secretary of the Executive Board of the Netherlands Society of Intensive Care Medicine (NVIC) and Council member of the European Society of Intensive Care Medicine (ESICM). He chaired Fundamental Critical Care Support (FCCS) the Netherlands for many years. He was president of the NVIC Committee on Intensive Care Quality. He also was co-chair of guideline programs on ICU organization in the Netherlands and lead the Surviving Sepsis Campaign in The Netherlands.

He was Managing Editor of the Netherlands Journal of Critical Care for ten years. He is a reviewer for numerous journals such as Lancet, Am J Resp Crit Care Med, Crit Care, Intensive Care

Med, JPEN, and Clin Nutr. He has organized over 150 medical congresses. Over the last years, his interest has moved towards Critical Care Nutrition with particular interest in immunomodulating nutrition, protein needs and timing, mitochondrial dysfunction and refeeding syndrome. He is a lecturer at the Wageningen University for Clinical Nutrition Research. He is a member of the Working Group on Gastrointestinal Failure of the ESICM and the Practice Guideline Committee of ESPEN for Critical Care Nutrition for adults and member of the board of NESPEN.

He was the coordinating investigator of the MetaPlus immune-nutrient enteral nutrition trial of which the results were published in JAMA. He is the author of the Chapter on Critical Care Nutrition in the newest standard work Textbook of Critical Care Medicine. He has published many publications on nutrition and metabolism in peer-reviewed journals over the last years. He is (co)promotor and scientific coach for many (inter)national medical and nutrition University students, nurses and doctors focussing on nutritional support in critically ill patients from Radboud University Nijmegen, University of Utrecht, Free University Amsterdam and Wageningen University Research Center in the Netherlands. Several of these researchers have and will defend Ph.D. theses and have published highly cited articles in peer-reviewed journals under his leadership.

In the period 2011-2018 he gave more than 200 lectures on Critical Care Nutrition and Sepsis in 27 countries. Among these, he was an invited keynote speaker at meetings of ESPEN, ASPEN, ISICEM, ESICM, BRASPEN, DAPEN, CSPEN, CSCCM and the Middle-East ICU Nutrition Summit.

Further Reading

Very high intact-protein formula successfully provides protein intake according to nutritional recommendations in overweight critically ill patients: a double-blind randomized trial

Arthur R.H. van Zanten, MD, PhD¹; Laurent Petit, MD, PhD²; Jan De Waele, MD, PhD³; Hans Kieft, MD, PhD⁴; Janneke de Wilde, PhD⁵; Peter van Horssen, PhD⁵; Marianne Klebach, MSc⁵; Zandrie Hofman, MSc⁵

Background

Optimal energy and protein provision through enteral nutrition is essential for critically ill patients. However, in clinical practice the intake achieved is often far below the recommended targets. As no polymeric formula with sufficient protein content is available, adequate protein intake can be achieved only by supplemental amino acids or semi-elemental formula administration. The current study investigated whether protein intake can be increased with a new, very high intact-protein formula (VHPF) for enteral feeding.

Methods

In this randomized, controlled, double-blind, multicenter trial, 44 overweight (BMI ≥ 25) ICU patients received either a VHPF (8 g/100 kcal) or a commercially available standard high-protein formula (SHPF) (5 g/100 kcal). Protein and energy intake, gastrointestinal tolerance (gastric residual volume, vomiting, diarrhea and constipation), adverse events, and serious adverse events were recorded. Total serum amino acid levels were measured at baseline and day 5.

Results

The primary outcome, protein intake at day 5, was 1.49 g/kg bodyweight (95% CI: 1.21-1.78) and 0.76 g/kg BW (95%CI: 0.49-1.03, $P < 0.001$) for VHPF and SHPF, respectively. Daily

protein intake was statistically significantly higher in the VHPF group compared with the SHPF group from day 2 to day 10. Protein intake in the VHPF group as a percent of target (1.5 g/kg ideal bodyweight) was 74.7% (interquartile range [IQR]: 53.2-87.6%) and 111.6% (IQR: 51.7-130.7%) during days 1-3 and days 4-10, respectively. Serum amino acid concentrations were higher at day 5 in the VHPF group than in the SHPF group ($P = 0.031$). No differences were found in energy intake, measures of gastrointestinal tolerance, and safety.

Conclusions

Enteral feeding with a very high intact-protein enteral formula (8 g/100 kcal) results in higher protein intake and plasma amino acid concentrations than an isocaloric standard high protein formula (5 g/100 kcal), without an increase in energy intake. This very high intact-protein formula facilitates feeding according to nutritional guidelines and is suitable as a first-line nutritional treatment for critically ill, overweight patients.

“Very high intact-protein formula successfully provides protein intake according to nutritional recommendations in overweight critically ill patients: a double-blind randomized trial”
van Zanten et al. *Critical Care* (2018) 22:156
<https://doi.org/10.1186/s13054-018-2070-5>

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Prof. Elisabeth De Waele

Head of Clinics ICU, Head of Clinical Nutrition Department, Universitair Ziekenhuis Brussel, Brussels, Belgium

Professor Elisabeth De Waele received her medical degree with great distinction from Vrije Universiteit Brussel in 2004. She subsequently completed postgraduate training in general surgery in 2010 and became a certified Intensive Care Physician in 2012. She is currently head of clinics in ICU, responsible for nutritional management and for the postoperative treatment of cardiac surgery patients. She acts as the liaison with the surgical teams of the Universitair Ziekenhuis Brussel.

Since 2018 she is head of de the newly created Department of Clinical Nutrition, treating hospitalized and ambulatory patients, such as home parenteral patients. From 2012 on she is president of the Nutrition Team at Vrije Universiteit Brussel/Universitair Ziekenhuis Brussel. The multidisciplinary Team realizes hospital-wide a higher quality of care concerning nutrition: standardized nutritional screening at admission, protocol-guided nutritional therapy on the ward and in ICU, quality-improvement of nutritional therapy in the Hemodialysis population, data gathering and benchmarking etc.

Her scientific work is focused on clinical research in critically ill patients and resulted in a PhD Thesis entitled “Energy Expenditure and Nutritional Therapy in Critically ill Patients” in 2015. The research group of the Vrije Universiteit Brussel/Universitair Ziekenhuis Brussel (Brussels Health Campus) is renowned in different domains of clinical research.

The domains of expertise comprise nutrition in critical care setting, metabolism and nutrition of ICU and cardiac surgery patients and nutrition in oncology.

Professor De Waele acts as a promotor and co-promotor for several doctorandi, and as a clinical tutor at the Vrije Universiteit Brussel for medical students, pharmacists and dieticians in formation. She has published more than seventy articles in peer-reviewed journals, including 10 as first author.

She is member of ISICEM, ESICM, ESPEN, SIZ and reviewer for several high-end peer-reviewed medical journals. Since 2017 she is IT and communication manager of the European Society for Clinical Nutrition and Metabolism.

Further Reading

The CoCoS trial: Caloric Control in Cardiac Surgery patients promotes survival, an interventional trial with retrospective control

De Waele E¹, Nguyen D², De Bondt K³, La Meir M⁴, Diltor M², Honoré PM², Spapen H², Pen JJ⁵

Background & aims:

Malnutrition is widespread among cardiac surgery patients and is independently related to an adverse postoperative evolution or outcome. We aimed to assess whether nutrition therapy (NT) could alter caloric deficit, morbidity, and mortality in patients scheduled for non-emergency coronary artery bypass graft (CABG) or aortic valve surgery.

Methods:

351 patients undergoing either elective CABG or aortic valve surgery were studied. Patients receiving NT were enrolled from January 2013 until December 2014. A retrospective control group (CT) consisted of 142 matched patients. The primary endpoint was to evaluate whether NT could limit caloric deficit (Intake to Need Deviation). Secondary endpoints addressed the potential effect of NT on morbidity and mortality. Patients were followed for one year after surgery.

Results:

There was no significant difference in patient, laboratory or mortality profile between the groups. Caloric deficit could be limited in the intervention group, essentially by providing oral feeding and oral supplements. A minority of patients required enteral or parenteral nutrition during their hospital stay. Caloric deficit increased after the second postoperative day because

more patients were switched to oral feeding and intravenous infusions were omitted. Combining CABG and aortic valve surgery, male patients in the NT group had significantly less arrhythmia than in the CT group (7% versus 31%; $P = 0.0056$), while females in the NT group had significantly less pneumonia than in the CT group (7% versus 22%; $P = 0.0183$). Survival was significantly higher in female NT patients compared to CT patients, both for CABG (100% versus 83%; $P = 0.0015$) and aortic valve surgery (97% versus 78%; $P = 0.0337$).

Conclusion:

The results suggest that NT beneficially affects morbidity and mortality in elective cardiac surgery patients. The impact of NT seems more pronounced in women than in men.

Reprinted from *Clinical Nutrition*; 37(3) DeWaele et al. The CoCoS trial: Caloric Control in Cardiac Surgery patients promotes survival, an interventional trial with retrospective control 37(3):864-869; (2018) with permission from Elsevier.

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Prof. Paul Wischmeyer

Professor of Anesthesiology and Surgery with Tenure, Director-Perioperative Research, Duke Clinical Research Institute

Paul E. Wischmeyer, MD, EDIC, is a critical care, perioperative and nutrition physician who serves as a Professor with Tenure of Anesthesiology and Surgery at Duke University School of Medicine in Durham, NC. He also serves as the Associate Vice Chair for Clinical Research in the Dept. of Anesthesiology, Director of the Nutrition Team at Duke Hospital, and Director of Perioperative Research at the Duke Clinical Research Institute. Prof. Wischmeyer earned his medical degree with honors at The University of Chicago Pritzker School of Medicine where he was elected in the honor society of Alpha Omega Alpha for outstanding academic achievement. He completed his residency in anesthesiology/critical care, fellowship in clinical pharmacology, and the NIH Clinical Research Scientist Training Program at The University of Chicago.

Prof. Wischmeyer's clinical and research focus is in nutrition, perioperative care, and critical care to help patients prepare and recover from critical illness and surgery. His research interests include ICU and surgical nutrition therapy, perioperative optimization, post-illness lean body mass and functional recovery, and role of probiotics/microbiome in illness. His research group has been awarded NIH and other peer-reviewed grants to perform research ranging from basic mechanistic cell work to large-scale multicenter clinical trials in the fields of critical care, perioperative medicine, nutrition and metabolism, microbiome/probiotics, and interventions to improve lean body mass and functional outcomes. For his research work

and clinical work, Prof. Wischmeyer has received numerous awards from national and international societies, including the Jeffrey Silverstein Award and Memorial Lecture for Humanism in Medicine from the American Delirium Society, the John M. Kinney Award for the most significant contribution to the field of general nutrition, the Stanley Dudrick Research Scholar Award by the American Society for Parenteral and Enteral Nutrition, and the Lifetime Achievement Award of the International Parenteral Nutrition Education and Methodology Advancement for significant contributions to the field of nutrition. Prof. Wischmeyer has over 150 publications in nutrition, critical care, and perioperative care (with an H-index of 49 and 25 papers with > 100 citations), including publications in the New England Journal of Medicine. Finally, he has been an invited speaker at numerous national and international medical meetings, delivering over 700 invited presentations over his career. He is also passionate about training and preparing new young physicians and scientists for careers in academic medicine.

Further Reading

Are we creating survivors... or victims in critical care? Delivering targeted nutrition to improve outcomes

P.E. Wischmeyer

Over the last 10 years, we are proud of the fact we have finally begun to reduce in-hospital mortality following severe sepsis in some countries worldwide¹. Further, mortality from acute lung injury has fallen dramatically, as the control group mortality in a recent large Acute Respiratory Distress Syndrome Research Network (ARDSnet) trial was strikingly only 16%². But the fundamental question that must be asked is 'are we winning many battles in our ICUs, but ultimately losing the war?'

Despite these improvements in ICU outcome, the same data indicating we have reduced sepsis hospital mortality by half in the last 10 years, also reveal 'we have tripled the number of patients going to rehabilitation settings¹. Moreover, of these new 'ICU survivors,' how many even survived a year? Troubling data from recent years reveal as much as '40–50% of the mortality within 12 months of an ICU admission occurs after the patient leaves the ICU'³. Commonly, patients are placed in nursing homes or rehabilitation centers, never to return home to their loved ones or return to a meaningful quality of life (QoL).

Thus, leading authorities from large critical care trials groups are indicating given low ICU mortality and the high proportion of patients discharged to rehabilitation centers, that QoL, not mortality, should become the primary endpoint of future large ICU trials¹. More practically, for all of us as ICU caregivers, we all must ask ourselves 'Are we creating survivors... or victims' in our ICU care.

Reprinted from: Wischmeyer et al. Are we creating survivors... or victims in critical care? Delivering targeted nutrition to improve outcomes. *Current opinion in critical care*. Volume 22 (4); 279-284, 2016. <https://insights.ovid.com/pubmed?pmid=27327244> from Wolters.

¹ Kaukonen KM, Bailey M, Suzuki S, et al. Mortality related to severe sepsis and septic shock among critically ill patients in Australia and New Zealand, 2000– 2012. *JAMA* 2014; 311:1308–1316.

² Rice TW, Wheeler AP, Thompson BT, et al. Enteral omega-3 fatty acid, gamma-linolenic acid, and antioxidant supplementation in acute lung injury. *JAMA* 2011; 306:1574–1581.

³ Weycker D, Akhras KS, Edelsberg J, et al. Long-term mortality and medical care charges in patients with severe sepsis. *Crit Care Med* 2003; 31:2316– 2323.

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