Addendum

SUN-LB441
ACCURACY OF PREDICTIVE EQUATIONS FOR RESTING ENERGY EXPENDITURE IN ONCOLOGY PATIENTS; A CROSS-SECTIONAL STUDY

S. Verschure-Dorsman[1]*, E. Heijkoop[1], J. Vonk[1], L. Kemperman[1], S. Tjon A Joe[1]. [1]Netherlands Cancer Institute, Amsterdam, Netherlands

Rationale: The WHO equation seems to have the best predictive value for estimating resting energy expenditure (REE) for malnourished patients. However, for cancer patients there is no consensus about which equation to use. Objective of this study is to investigate which predictive equation gives the most optimal estimation of REE in malnourished cancer patients.

Methods: Patients with different types of cancer were included, all 18 years or older. REE was measured with indirect calorimetry (ventilated hood) and compared with three frequently used equations; the Harris and Benedict 1919, the Harris and Benedict 1984 (Roza and Shizgal) and the WHO equation. Agreement was defined as a measurement within 15% of measured REE. Standard deviations and correlation coefficients were also assessed.

Results: Preliminary results included 8 patients with different types of cancer with a mean age of 52 years. Mean BMI was 21 kg/m^2. Mean REE measured by ventilated hood was 1127 ± 506 kcal. Of all three equations, the Harris & Benedict 1919 gave the most accurate estimation ($1591,1 \pm 284,3$). Agreement within 15% was met in only one out of eight patients. Moreover, all three equations overestimated REE with an average of 40%.

Conclusion: In oncology patients, all predictive equations overestimated REE. Measuring REE with indirect calorimetry is preferred. If this is not possible, the best equation for oncology patients is the Harris and Benedict 1919, however further researched is needed.

References

Gandy J. Manual of dietetic practice. Vijfde druk. Wiley Blackwell and BDA The Association for UK Dietitians. 2014. p. 325–327, 856.

Harris JA, Benedict FG. A Biometric Study Of Human Basal Metabolism. 1918.

Roza AM, Shizgal HM. The Harris Benedict equation reevaluated: resting energy requirements and the body cell mass. 1984. http://zakboekdietetiek.nl/wp-content/uploads/2015/06/roza-1984.pdf

Kruizenga HM, Hofsteenge GH, Weijs PJ. Predicting resting energy expenditure in underweight, normal weight, overweight, and obese adult hospital patients. Nutr Metab. 2016;24:1–9.

Weijs PJ, Kruizenga HM, van Dijk AE et al Validation of predictive equations for resting energy expenditure in adult outpatients and inpatients. Clin Nutr. 2008;27:150–7.

Disclosure of Interest: None declared

SUN-LB442
IMPACT OF DIETARY PROTEIN SUPPLEMENTATION ON LENGTH OF HOSPITAL STAY AND MORTALITY IN OLDER ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

J. Verstappen[1]*, C. van Dronkelaar[1], M. Streppel[1], M. Tieland[1], G. Biolo[2], Y. Boirio[3], O. Rooijackers[4], J. Kondrup[5], P. Weijs[1]. [1]Lectoraat Gewichtsmanagement, Hogeschool Van Amsterdam, Amsterdam, Netherlands, [2]Department of Medical, Surgical and Health Sciences, Clinica Medica, ASUITs, University of Trieste, Trieste, Italy, [3]Department of Clinical Nutrition, University of Clermont Auvergne, Clermont-Ferrand, France, [4]Anesthesiology and Intensive Care, Karolinska Institutet and Karolinska University Hospital, Stockholm, Sweden, [5]Clinical Nutrition Unit, Rigshospitalet University Hospital, Copenhagen, Denmark

Rationale: Optimal protein intake could reduce length of stay and mortality in hospitalized older adults. The objective of this systematic review is to assess the impact of dietary protein on length of hospital stay and mortality in patients aged >65 years.

Methods: MEDLINE was searched for original articles published between 1946 and June 2017. Evidence from intervention studies, cohort studies, prospective case control studies, systematic reviews and meta-analyses were included. Two independent reviewers selected relevant articles, based on predefined criteria regarding type of intervention, study outcome, study population, and study design. The quality of the studies was assessed and evidence was graded as 'convincing', 'probable', 'limited-suggestive' or 'limited-no conclusion'.

Results: Out of 4486 studies, 6 studies were included. Of those, 5 were randomized clinical trials (RCTs) and 1 prospective cohort study. The studies used different procedures of protein supplementation: hospital diet, oral nutritional supplements, amino acid (AA) supplementation and AA infusion. The overall protein intake was 1.24 g/kg bodyweight per day. Five out of six RCTs showed that dietary protein had no significant impact on length of hospital stay. Two studies investigated mortality but found no effect. The evidence was graded as limited-suggestive for an association between higher protein intake and shorter length of stay and lower mortality in hospitalized elderly patients.

Conclusion: This systematic review showed no added value of protein intake on length of stay or mortality in older adults that ingested ample daily protein intake.

Disclosure of Interest: None declared

SUN-LB443
A NEW WHEY-BASED, HIGH-PROTEIN ENTERAL FORMULA REACHED TARGET PROTEIN AMOUNT AFTER 72 HOURS IN INTENSIVE CARE PATIENTS

J. Scheuzger[1]*, F. Jockers[1], A. Hollinger[1], C. Kiss[1], M. Siegemund[1]. [1]Universitätsspital Basel, Basel, Switzerland

Rationale: Survivors of intensive care suffer from muscle wasting that delay rehabilitation and hamper their activities for daily living for years after. Enteral feeding with high protein content may help to attenuate muscle breakdown and increase muscle protein synthesis.

Methods: We prospectively examined tolerance, energy, and hydrolysed whey protein delivery of a new ICU high in protein enteral formula (Fresubin Intensive; Fresenius Kabi, Germany) in 23 critically ill, ventilated patients requiring enteral feeding. Protein target was set to achieve ≥1.3 g/kg/day at day 3; energy target was set at 20 kcal/kg/day. For comparison, we retrospectively evaluated 23 comparable patients of the same period receiving the usual enteral formula

(Isosource Protein Fibre; Nestle Health Science, Switzerland). We compared the two groups with the two-sample Wilcoxon-Mann-Whitney test according to non-normally distributed values.

Results: The majority of patients were male with average age of 69 years. Body mass index was 25 ± 5 kg/m^2 in the treatment group and 28 ± 5 kg/m^2 in the control group. Protein delivery was significantly higher after 3 days in the treatment group. Energy (kcal) was significantly lower after 2 days, but not by day 3. Renal function parameters were different from day one with significant higher creatinine (104 μmol/L; IQR (86–151) vs. 75; (48–92)) but not blood urea nitrogen (8.8 mmol/L IQR (5.6–10.8) vs. 5.7; (4.6–8.3)) levels in the treatment group. These differences remained until end of day 3. We did not find an increased number of gastrointestinal intolerance episodes with the new formula.

	48 hours			72 hours		
	Treatment group	Control group	p	Treatment group	Control group	p
Protein	88	74	0.136	125	87	<0.001
g/day	(62–110)	(64–83)		(95–150)	(74–97)	
Energy	1074	1463	0.001	1527	1732	0.105
Kcal/day	(760–1342)	(1269–1654)		(1154–1832)	(1471–1921)	
Creatinine	112	69	<0.001	117.5	69	<0.001
(umol/l)	(92–139)	(60–88)		(80–163)	(55–92)	
BUN	10.2	7.6	0.049	11.8	8.8	0.061
(mmol/l)	(7.0–17.3)	(6.25–10.0)		(7.4–16.5)	(5.9–11.15)	

Conclusion: The new ICU-specific enteral formula was well-tolerated and achieved the protein target of ≥ 1.3 g/kg within 72 hours without exceeding the energy target.

Disclosure of Interest: J. Scheuzger Grant / Research Support from: Fresenius Kabi, Germany, F. Jockers Grant / Research Support from: Fresenius Kabi, Germany, A. Hollinger Grant / Research Support from: Fresenius Kabi, Germany, C. Kiss Grant / Research Support from: Fresenius Kabi, Germany, M. Siegemund Grant / Research Support from: Fresenius Kabi, Germany

SUN-LB444
NUTRITIONAL STATUS AND QUALITY OF LIFE IN HIV-INFECTED PATIENTS

B. F. De Carvalho[1]*, A. C. Moreira[2], S. Policarpo[3]. [1]*Nutrition and Dietetics, Faculdade de Medicina da Universidade de Lisboa, [2]Nutrition and Dietetics, Escola Superior Tecnologia da Saúde de Lisboa, [3]Serviço de Dietética e Nutrição, Hospital de Santa Maria, Lisbon, Portugal*

Rationale: Though some studies have looked at the impact nutritional status has on quality of life (QoL) in patients with chronic diseases, few have studied this in HIV-infected individuals.

Methods: Individuals with an HIV diagnosis performed in the fourteen months prior to a medical visit to one of Lisbon's central hospitals were eligible. Nutritional status was assessed by anthropometry, body composition analysis, and dietary intake. QoL was assessed using the WHOQOLHIV-BREF questionnaire. Patients maintained follow up by a Dietician; after one year anthropometric data concerning weight change was collected and compared with data at baseline.

Results: Fifty-one subjects were eligible for enrolment; the majority were male, Caucasian, employed, single, and under highly active antiretroviral therapy (HAART). Lower QoL scores were observed in subjects with inadequate energy intakes, reported weight loss, and a high waist circumference in bivariate analysis ($p < 0.05$); the same variables influenced QoL negatively after adjusting for confounders in multivariate analysis ($p < 0.05$). Various sociodemographic characteristics such as level of education, age, gender, and current health problems also predicted QoL significantly ($p < 0.05$). After one year, anthropometric data was available for 45 patients. Most patients gained weight after 1 year (69%). Lower quality of life scores at baseline were associated to a greater percentage variation in weight after one year in the physical dimension ($p < 0.05$). A sub-analysis excluding patients who lost weight, showed that a higher percentage weight gain was associated to a worst QoL at baseline in the dimension concerning level of independence ($p < 0.05$).

Conclusion: Various aspects of nutritional status were responsible for the variations observed in QoL, suggesting a potential for nutritional intervention in improving QoL in this population. A reduced metabolic demand from viral replication may explain the anthropometric results observed at follow up, possibly suggesting improved clinical outcomes.

References

Ockengaa J, Grimbleb R, Jonkers-Schuitemac C, Macalland D, Melchiore JC, Sauerweinf HP. ESPEN Guidelines on Enteral Nutrition: Wasting in HIV and other chronic infectious diseases. Clin Nutr 2006;25:319–29.

Disclosure of Interest: None declared

MON-LB444
EFFECT OF ACTIVE REHABILITATION ON SARCOPENIA IN ICU

J. S. Lee[1]*, S.-K. Hong[1]. [1]*ASAN Medical Center, Seoul, Korea, Republic Of*

Rationale: Sarcopenia progressing rapidly during initial ICU treatment. If the patients have severe sarcopenia, they have limited performance and negative effects on clinical outcome. Measurement of rectus femoris muscle with ultrasound is known to be reliable in recognizing sarcopenia. The aim of this study was to investigate the inhibitory factors of sarcopenia.

Methods: This was a single-center prospective observational study. Eighteen patients who stayed Surgical intensive Care Units more than 3 weeks were enrolled. Rectus femoris muscle cross sectional area (CSA) was measured by ultrasound at on days 1, 7, 14, and 21. Three weeks after the ICU admission, patients were divided into two groups: those with 30% or more muscle loss and those without. The relative factors of two groups were compared and analyzed.

Results: There was no difference between the two groups in term of age, gender, BMI, APACHE II, nutrition status at admission, calories and proteins supplied for 3 weeks. In the group with 30% or more muscle loss, the number of patient who had active rehabilitation for 3 weeks was significantly lower. ($P = 0.038$) In addition, the frequency of active rehabilitation for 3 weeks was also significantly lower. ($P = 0.022$)

Conclusion: Active rehabilitation inhibits the progression of sarcopenia.

Disclosure of Interest: None declared