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Introduction

Welcome to Fresenius Kabi’s Quarterly Abstract Bulletin for enteral nutrition. We have reviewed the following journals over the past three months, and selected any nutrition support related articles:

- Age and Ageing
- American Journal of Clinical Nutrition
- Archives of diseases in Childhood
- BMJ
- British Journal of Community Nursing
- British Journal of Nursing
- British Journal of Nutrition
- Clinical Nutrition
- Complete Nutrition
- Critical Care Medicine
- Current Opinion in Clinical Nutrition and Metabolic Care
- Dysphagia
- European Journal of Clinical Nutrition
- Gastrointestinal Nursing
- GUT
- International Journal of Palliative Nursing
- Intensive Care Medicine
- Intensive and Critical Care Nursing
- Journal of Community Nursing
- Journal of Human Nutrition and Dietetics
- Journal of Parenteral and Enteral Nutrition
- Journal of the American Geriatric Society
- Journal of Woundcare
- The Lancet
- Nursing and Residential Care
- Nursing Children and Young People
- Nursing in Practice
- Nursing Older People
- Nursing Standard
- Nursing Times
- Nutrition
- Nutrition in Clinical Practice
- Proceedings of the Nutrition Society

We do recommend that the original article is used for the full details and results.

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This publication and previous editions are also available online at www.fresenius-kabi.co.uk under the nutrition service section.
n-3 PUFAs in cancer, surgery, and critical care: a systematic review on clinical effects, incorporation, and washout of oral or enteral compared with parenteral supplementation

B S van der Meij, M A E van Bokhorst-de van der Schueren, J A E Langius, I A Brouwer, and P A M van Leeuwen


Abstract

BACKGROUND: n-3 (omega-3) Fatty acids (FAs) may have beneficial effects in patients with cancer or in patients who undergo surgery or critical care. OBJECTIVE: Our aim was to systematically review the effects of oral or enteral and parenteral n-3 FA supplementation on clinical outcomes and to describe the incorporation of n-3 FAs into phospholipids of plasma, blood cells, and mucosal tissue and the subsequent washout in these patients. DESIGN: We investigated the supplementation of n-3 FAs in these patients by using a systematic literature review. RESULTS: In cancer, the oral or enteral supplementation of n-3 FAs contributed to the maintenance of body weight and quality of life but not to survival. We did not find any studies on parenteral supplementation of n-3 FAs in cancer. In surgical oncology, we did not find any studies on enteral supplementation of n-3 FAs. However, postoperative parenteral supplementation in surgical oncology may reduce the length of a hospital stay. For general surgery, we did not find any studies on enteral supplementation of n-3 FAs, and evidence on parenteral supplementation was insufficient. In critical care, enteral supplementation of n-3 FAs had beneficial effects on clinical outcomes; evidence on parenteral supplementation in critical care was inconsistent. The incorporation of n-3 FAs in plasma and blood cells was slower with enteral supplementation (4-7 d) than with parenteral supplementation (1-3 d). The washout was 5-7 d. CONCLUSIONS: This review shows the beneficial effects of n-3 FA supplementation in cancer, surgical oncology, and critical care patients. Supplementation in these specific patient populations could be considered with the route of administration taken into account.
**Effect of an enteral diet enriched with eicosapentaenoic acid, gamma-linolenic acid and anti-oxidants on the outcome of mechanically ventilated, critically ill, septic patients**


Clinical Nutrition (2011) 30 (5): 578-584

**Abstract**

**BACKGROUND & AIMS:** To assess the effect of an enteral diet enriched with eicosapentaenoic acid (EPA), gamma-linolenic acid (GLA), and anti-oxidants on the incidence of organ dysfunction and nosocomial infections in septic patients with acute lung injury or acute respiratory distress syndrome (ARDS) compared with a standard enteral diet. **METHODS:** This prospective, randomized, open-label study was performed in 11 Spanish intensive care units (ICU). Adult patients with sepsis and acute lung injury or ARDS were randomly allocated to receive either an EPA-GLA diet or a control diet. **RESULTS:** Of the 198 patients that were eligible, 160 were randomized and 132 were studied. Patient demographics, APACHE II and SOFA scores, and nutritional variables on admission were similar between the EPA-GLA diet and control diet groups. The EPA-GLA diet group showed a trend toward a decreased SOFA score, but it was not significant. No differences were observed in the PaO2/FiO2 ratio or the days on mechanical ventilation between the groups. Incidence of infections was similar in the groups. The control group stayed longer in the ICU than the EPA-GLA diet group (16 vs. 18; p = 0.02). **CONCLUSIONS:** A diet enriched with EPA, GLA, and anti-oxidants does not improve gas exchange or decrease the incidence of novel organ failures in critically ill septic patients with acute lung injury or ARDS. Patients treated with the EPA-GLA diet stayed in the ICU for less time, but we did not find any differences in infectious complications.

**Nutrition support in intensive care units in England: a snapshot of present practice**

M N Sharifi, A Walton, G Chakrabarty, T Rahman, P Neild and A Poullis


**Abstract**

Nutrition support is an important part of care management in critically ill patients, not only to prevent and treat malnutrition but also it has a significant impact on recovery from illness and overall outcome. There is little information available about present nutritional support practice for patients in intensive care units (ICU) in the UK. This survey was designed to evaluate the present nutrition support practice in ICU and high dependency units (HDU) in England. Data were gathered by a 72 h phone survey from 245 ICU and HDU in 196 hospitals in England. A questionnaire was completed over the telephone, including general information, nutrition support and teams involved in the nutrition management in the ICU. Of 1286 total patients in the ICU, 703 (54·6 %) were receiving nasogastric feeding, two (1·5 %) were receiving feeding via a percutaneous endoscopically placed gastrostomy tube and two (1·5 %) were receiving nasojejunal feeding. One hundred and forty-seven (11·4 %) patients were on parenteral feeding during the study period. A nutrition support team was not available in 158 (83·1 %) ICU and there was no dietitian or specialist nutrition nurse to cover ICU in nine (4·7 %) hospitals. In conclusion, the present survey reported an increased trend in usage of enteral feeding in ICU in England, and a reduction in the use of parenteral nutrition compared with previous surveys. However, we are still far from integrating nutrition into care management in the ICU.
Optimal amount of calories for critically ill patients: depends on how you slice the cake!

D K Heyland, N Cahill and A G Day
Critical Care Medicine (2011) 39 (12): 2619-2626

Abstract

OBJECTIVE: The optimal amount of calories required by critically ill patients continues to be controversial. The objective of this study is to examine the relationship between the amount of calories administered and mortality. DESIGN: Prospective, multi-institutional audit. SETTING: Three hundred fifty-two intensive care units from 33 countries. PATIENTS: A total of 7,872 mechanically ventilated, critically ill patients who remained in the intensive care unit for at least 96 hrs. INTERVENTIONS: None. MEASUREMENTS AND MAIN RESULTS: We evaluated the association between the amount of calories received and 60-day hospital mortality using various sample restriction and statistical adjustment techniques and demonstrate the influence of the analytic approach on the Results. In the initial unadjusted analysis, we observe a significant association between increased caloric intake and increased mortality (odds ratio 1.28; 95% confidence interval 1.12–1.48 for patients receiving more than two-thirds of their caloric prescription vs. those receiving less than one-third of their prescription). Excluding days after permanent progression to oral intake attenuated the estimates of harm (unadjusted analysis: odds ratio 1.04; 95% confidence interval 0.90–1.20). Restricting the analysis to patients with at least 4 days in the intensive care unit before progression to oral intake and excluding days of observation after progression to oral intake resulted in a significant benefit to increased caloric intake (unadjusted odds ratio 0.73; 95% confidence interval 0.63–0.85). When further adjusting for both evaluable days and other important covariates, patients who received more than two-thirds of their caloric prescription are much less likely to die than those receiving less than one-third of their prescription (odds ratio 0.67; 95% confidence interval 0.56–0.79; p < .0001). When treated as a continuous variable, the overall association between the percent of the caloric prescription received and mortality is highly statistically significant with increasing calories associated with decreasing mortality (p < .0001). CONCLUSIONS: The estimated association between the amount of calories and mortality is significantly influenced by the statistical methodology used. The most appropriate available analyses suggest that attempting to meet caloric targets may be associated with improved clinical outcomes in critically ill patients.

Early enteral nutrition improves outcomes of open abdomen in gastrointestinal fistula patients complicated with severe sepsis

Y Yuan, J Ren, G Gu, J Chen and J Li

Abstract

BACKGROUND: Although nutrition therapy is favorably considered as an assistant therapeutic measure in critical illness, little data evaluate its role in gastrointestinal fistula patients with severe sepsis after an open abdomen. The purpose of this study is to evaluate the role of early nutrition therapy in that population. METHODS: This is a retrospective review of patients who underwent open abdomen management for gastrointestinal fistula and severe sepsis from January 2001 to June 2009. Nutrition therapy, fistula, abdominal closure, and demographics were noted. Succus entericus reinfusion (SER) was performed for high-output volume or multiple fistulae. Patients were divided into two groups based on whether enteral nutrition (EN) was initiated within 14 days after admission. Delivery route of nutrients, mortality, complications, and time to abdominal closure were compared among groups. RESULTS: Eighty-two patients were included. Fifty-six (68.3%) patients survived to discharge. Forty-one (50%) patients received SER. EN was initiated within 14 days in 36 patients, with a mean initiation time at 8.3 ± 3.4 days; 46 patients did not start any EN within 14 days (29.9 ± 20.9 days). The mean age, BMI, APACHE II score, and fistula characteristics were similar between groups. The abdominal closure was accomplished more rapidly in patients fed within 14 days (142.8 vs 184.5 days, P = .017), with decreased mortality (11.1% vs 47.8%, P < .001). CONCLUSIONS: Nutrition therapy plays an important role in the management of gastrointestinal fistula with severe sepsis. Early EN could be successfully delivered for that population, with improved mortality risk.
Prospective multicentre randomised controlled trial of early enteral nutrition for patients undergoing major upper gastrointestinal surgical resection

R Barlow, P Price, T D Reid, S Hunt, G W B Clark, T J Havard, M C A Puntis and W G Lewis


Abstract

BACKGROUND & AIMS: The evidence in support of Early Enteral Nutrition (EEN) after upper gastrointestinal surgery is inconclusive. The aim of this study was to determine if EEN improved clinical outcomes and shortened length of hospital stay. METHODS: Open, prospective multicentre randomised controlled trial within a regional UK Cancer Network. One hundred and twenty-one patients with suspected operable upper gastrointestinal cancer (54 oesophageal, 38 gastric, 29 pancreatic) were studied. Patients were randomised to receive EEN (n = 64) or Control management postoperatively (nil by mouth and IV fluid, n = 57). Analysis was based on intention-to-treat and the primary outcome measure was length of hospital stay.

RESULTS: Operative morbidity was less common after EEN (32.8%) than Control management (50.9%, p = 0.044), due to fewer wound infections (p = 0.017), chest infections (p = 0.036) and anastomotic leaks (p = 0.055). Median length of hospital stay was 16 days (IQR = 9) after EEN compared with 19 (IQR = 11) days after Control management (p = 0.023). CONCLUSIONS: EEN was associated with significantly shortened length of hospital stay and improved clinical outcomes. These findings reinforce the potential benefit of early oral nutrition in principle and as championed within enhanced recovery after surgery programmes, and such strategies deserve further research in the arena of upper GI surgery.

Delayed enteral feeding impairs intestinal carbohydrate absorption in critically ill patients

N Q Nguyen, L K Besanko, C Burgstad, M Bellon, R H Holloway, M Chapman, M Horowitz and R J L Fraser


Abstract

OBJECTIVES: Delay in initiating enteral nutrition has been reported to disrupt intestinal mucosal integrity in animals and to prolong the duration of mechanical ventilation in humans. However, its impact on intestinal absorptive function in critically ill patients is unknown. The aim of this study was to examine the impact of delayed enteral nutrition on small intestinal absorption of 3-O-methyl-glucose. DESIGN: Prospective, randomized study. SETTING: Tertiary critical care unit. PATIENTS: Studies were performed in 28 critically ill patients. INTERVENTIONS: Patients were randomized to either enteral nutrition within 24 hrs of admission (14 “early feeding”: 8 males, 6 females, age 54.9 ± 3.3 yrs) or no enteral nutrition during the first 4 days of admission (14 “delayed feeding”: 10 males, 4 females, age 56.1 ± 4.2 yrs). MEASUREMENTS AND MAIN RESULTS: Gastric emptying (scintigraphy, 100 mL of Ensure (Abbott Australia, Kurnell, Australia) with 20 MBq 99mTc-sulphur colloid), intestinal absorption of glucose (3 g of 3-O-methyl-glucose), and clinical outcomes were assessed 4 days after intensive care unit admission. Although there was no difference in gastric emptying, plasma 3-O-methyl-glucose concentrations were less in the patients with delayed feeding compared to those who were fed earlier (peak: 0.24 ± 0.04 mmol/L vs. 0.37 ± 0.04 mmol/L, p < .02) and integrated (area under the curve at 240 mins: 38.5 ± 7.0 mmol/min/L vs. 63.4 ± 8.3 mmol/min/L, p < .04). There was an inverse correlation between integrated plasma concentrations of 3-O-methyl-glucose (area under the curve at 240 mins) and the duration of ventilation (r = −.51; p = .006). In the delayed feeding group, both the duration of mechanical ventilation (13.7 ± 1.9 days vs. 9.2 ± 0.9 days; p = .049) and length of stay in the intensive care unit (15.9 ± 1.9 days vs. 11.3 ± 0.8 days; p = .048) were greater. CONCLUSIONS: In critical illness, delaying enteral feeding is associated with a reduction in small intestinal glucose absorption, consistent with the reduction in mucosal integrity after nutrient deprivation evident in animal models. The duration of both mechanical ventilation and length of stay in the intensive care unit are prolonged. These observations support recommendations for “early” enteral nutrition in critically ill patients.
Provision of balanced nutrition protects against hypoglycemia in the critically ill surgical patient

R M Kauffmann, R M Hayes, J M Jenkins, P R Norris, J J Diaz, A K May and B R Collier


Abstract

BACKGROUND: Intensive insulin therapy lowers blood glucose and improves outcomes but increases the risk of hypoglycemia. Typically, insulin protocols require a dextrose solution to prevent hypoglycemia. The authors hypothesized that the provision of balanced nutrition (enteral nutrition [EN] or parenteral nutrition [PN]) would be more protective against hypoglycemia (≤50 mg/dL) than carbohydrate alone. METHODS: A retrospective analysis was performed of patients treated with intensive insulin therapy and surviving ≥24 hours. The computer-based insulin protocol requires infusion of D10W at 30 mL/h if EN or PN is not provided. Nutrition provision was assessed in 2-hour increments, comparing periods of blood glucose control with and without balanced nutrition. The risk of hypoglycemia for each blood glucose measurement was estimated by multivariable regression. RESULTS: In total, 66,592 glucose measurements were collected on 1392 patients. Hypoglycemic events occurred in 5.8/1000 glucose tests after 2 hours without balanced nutrition compared to 2.2/1000 tests when balanced nutrition was given in the preceding 2 hours. In multivariable regression models, balanced nutrition was the strongest protective factor against hypoglycemia. Patients who did not receive balanced nutrition in the preceding 2 hours had a 3 times increase in the odds of a hypoglycemic event at their next glucose check (odds ratio = 3.6, P < .001). Providing carbohydrate alone was not protective. CONCLUSIONS: Balanced nutrition is associated with reduced risk of hypoglycemia. These results suggest that balanced nutrition should be given when insulin therapy is initiated. Future studies should evaluate the efficacy of EN vs PN in preventing hypoglycemia.

Predominant copper deficiency during prolonged enteral nutrition through a jejunostomy tube compared to that through a gastrostomy tube

S Nishiwaki, M Iwashita, N Goto, M Hayashi, J Takada, T Asano, A Tagami, H Hatakeyama, T Hayashi, T Maeda and K Saito


Abstract

BACKGROUND & AIMS: Trace element deficiencies are known to occur during long-term enteral nutrition feeding. We compared the serum concentrations of trace elements between patients treated with gastrostomy and those treated with jejunostomy. METHODS: Our subjects were 36 patients who underwent percutaneous endoscopic gastrostomy (PEG group) and 23 patients who underwent percutaneous endoscopic jejunostomy (PEJ group) and were maintained with enteral tube feeding for more than one year. The serum concentrations of copper, zinc, selenium, and iron were measured in the two groups. Clinical manifestations and the effectiveness of supplementation therapy against copper deficiency were also investigated. RESULTS: From 6 months after the onset of enteral feeding, the copper concentration of the PEJ group was significantly decreased compared with that of the PEG group (p < 0.001). There were no significant differences in the concentrations of zinc, selenium, or iron between the two groups. Severe copper deficiency was observed in 6 patients of the PEJ group and was accompanied with neutropenia and anemia. The copper deficiency was successfully treated in all of these patients by supplementation with 10-40 g of cocoa powder a day which was equivalent to a total daily dose of 1.36-2.56 mg of copper. CONCLUSIONS: Prolonged PEJ tube nutrition tends to result in copper deficiency, and cocoa supplementation is effective for treating such copper deficiency.
Comparison of 70/30 biphasic insulin with Glargine/Lispro regimen in non-critically ill diabetic patients on continuous enteral nutrition therapy

E Hsia, S A Seggelke, J Gibbs, N Rasouli and B Draznin

Abstract
Despite significant advances in inpatient diabetes management, it is still a challenge to choose the safest and most efficacious subcutaneous insulin regimen for diabetic patients on continuous enteral nutrition (EN) therapy. The authors conducted a retrospective analysis of glycemic control in 22 non-critically ill diabetic patients, receiving at least 3 days of continuous EN. Patients received different insulin regimens while on continuous EN, including a basal/bolus glargine/lispro regimen (group 1, n = 8), 70/30 biphasic insulin twice daily (group 2, n = 8), and 70/30 biphasic insulin 3 times a day (group 3, n = 6). The glucose data from 72 hours from the initiation of EN were analyzed (12 point-of-contact glucose measurements per patient). Overall, the degree of control was comparable in all groups, with target range maintained more consistently in group 3 (70/30 insulin administered 3 times daily). In this group, 69% of values were in the target range (140-180 mg/dL) as compared with 24% in glargine/lispro group and 22% in the 70/30 insulin bid group. Eight hypoglycemic episodes occurred among the 3 groups: 5 episodes in group 1 (5.4%), 2 episodes in group 2 (2.1%), and 1 episode in group 3 (1.4%) (P = .05, groups 2 and 3 vs group 1). Administration of 70/30 biphasic insulin 3 times daily is a safe therapeutic regimen in diabetic patients on continuous EN as it maintains glycemia in the target range and might produce fewer episodes of hypoglycemia.

Long term nutritional status and quality of life following major upper gastrointestinal surgery – a cross-sectional study

S Carey, D Storey, A V Biankin, D Martin, J Young and M Allman-Farinelli

Abstract
BACKGROUND & AIMS: Major upper gastrointestinal surgery results in permanent alterations to the gastrointestinal tract and previously been shown to impair nutritional status. The aim of this study was to assess long term nutritional status and quality of life in people having had major upper gastrointestinal surgery, and the relationship between the two measures. METHODS: People having had major upper gastrointestinal surgery greater than 6 months ago were recruited. Nutrition assessment included weight, anthropometry, Subjective Global Assessment, dietary intake and assessment of gastrointestinal symptoms; quality of life was assessed using the EORTC QLQ-C30 questionnaire. Associations between nutritional status, type of surgery and quality of life were analysed. RESULTS: Thirty people were recruited with fourteen people showing a degree of malnutrition according to subjective global assessment. Total gastrectomy and oesophagectomy surgery resulted in significantly higher percent weight loss than those having undergone pancreatodudodenectomy (p = 0.01). Subjective global assessment correlated with quality of life (p = 0.003). Subjective global assessment and gastrointestinal symptoms were both significant variables in explaining quality of life (p < 0.001). CONCLUSIONS: Nutritional status in this group was significantly compromised, and impacted on quality of life. Individualised nutrition intervention to address malnutrition and gastrointestinal symptoms should be integrated into post surgery management.
Perioperative nutrition in malnourished surgical cancer patients – a prospective, randomized, controlled clinical trial

S Klek, M Sierzega, P Szybinski, K Szczepanek, L Scislo, E Walewska and J Kulig


Abstract

BACKGROUND & AIMS: Malnourished surgical patients are supposed to benefit from perioperative nutrition. It is unclear, however, whether enteral intervention really surpasses the parenteral one, and whether the modification of standard formula matters. The aim of the study was to evaluate the clinical value of the route and type of perioperative nutritional support.

METHODS: A group of 167 malnourished patients (91 M, 76 F, mean age 61.4 years) operated between June 2001 and December 2008 was randomly assigned during postoperative period to four groups according to nutritional intervention: enteral and parenteral, standard or immunomodulating. All patients received parenteral nutrition before surgery for 14 days, which provided homogenous groups for the postoperative evaluation. The trial was designed to test the hypothesis that enteral nutrition and/or immunonutrition can reduce the incidence of postoperative complications.

RESULTS: The incidence of individual complications was comparable among all four groups (p > 0.05). Infectious complications occurred in 23 of 84 patients with standard diets and in 20 of 83 patients receiving immunomodulatory formula (odds ratio 0.84; 95% CI 0.42 to 1.69). There were no significant differences in infectious complications’ ratio in patients receiving enteral (24/84 patients) and parenteral formulas (19/83 patients). Neither immunomodulating formulas nor enteral feeding significantly affected the length of hospitalization, overall morbidity and mortality rates. CONCLUSIONS: Results demonstrated that postoperative nutritional intervention generates comparable results regardless of the route and formula used and that preoperative intervention is of the utmost importance.

Importance of early nutritional screening in patients with gastric cancer

C Gavazzi, S Colatruglio, A Sironi, V Mazzaferro and R Miceli


Abstract

In the present study, we evaluated the relationship between nutritional status, disease stage and quality of life (QoL) in 100 patients recently diagnosed with gastric carcinoma. The patients’ nutritional status was investigated with anthropometric, biochemical, inflammatory and functional variables; and we also evaluated the nutritional risk with the Nutritional Risk Screening 2002. Oncological staging was standard. QoL was evaluated using the Functional Assessment of Anorexia/Cachexia Therapy questionnaire. The statistical correlation between nutritional risk score (NRS) and oncological characteristics or QoL was evaluated using both univariable and multivariable analyses. Weight loss and reduction of food intake were the most frequent pathological nutritional indicators, while biochemical, inflammatory and functional variables were in the normal range. According to NRS, thirty-six patients were malnourished or at risk for malnutrition. Patients with NRS ≥ 3 presented a significantly greater percentage of stage IV gastric cancer and pathological values of C-reactive protein, while no correlation was found with the site of tumour. NRS was negatively associated with QoL (P < 0.001) and this relation was independent from oncological and inflammatory variables as confirmed by multivariable analysis. In the present study, we found that in patients with gastric cancer malnutrition is frequent at diagnosis and this is likely due to reduction in food intake. Moreover, NRS is directly correlated with tumour stage and inversely correlated with QoL, which makes it a useful tool to identify patients in need of an early nutritional intervention during oncological treatments.
Development and validation of a nutrition screening tool for hospitalized cancer patients

J Kim, G Wie, Y Cho, S Kim, S Kim, K Son, S Park, B Nam and H Joung

Abstract

BACKGROUND & AIMS: Although various nutrition screening tools are used, they are not specific for the screening of malnourished cancer patients. The objective of this study was to develop a nutrition screening tool that could be used to identify cancer patients at risk for malnutrition. METHODS: Of 3010 cancer patients admitted to the National Cancer Center of Korea between April 1 and June 2, 2008, the nutritional status of 1057 patients was assessed by the Scored Patient-Generated Subjective Global Assessment (PG-SGA). Variables used in current nutrition screening tools were analyzed to select indices for a developing malnutrition screening tool for cancer patients (MSTC). The equation for the MSTC was established using receiver operating characteristics curves. Sensitivities and specificities of the MSTC were calculated using the PG-SGA as gold standard. RESULTS: The MSTC was calculated as follows: MSTC = −0.116 + (1.777 × intake change) + (1.304 × Eastern Cooperative Oncology Group performance status) + (1.568 × weight loss) + (−0.187 × body mass index). The MSTC had a sensitivity of 94.0%, a specificity of 84.2%, and high agreement (κ = 0.70, P < 0.0001) with the PG-SGA. CONCLUSIONS: The MSTC appears to be a valid nutrition screening tool for determining nutritional risk in hospitalized cancer patients.

Nutritional status of older patients admitted to hospital for surgery

J Stewart
British Journal of Community Nursing (2011) 16 (11): S18 - S20

Abstract

This article summarizes the nutrition-related findings of an NCEPOD review into the care received by patients aged 80 years and over who died in hospital within 30 days of surgery. METHOD: Data were collected on 1758 elderly patients (aged >80) who underwent surgery and died during the same hospital admission during April to June 2008. Questionnaires were sent to the surgeon and anaesthetist responsible for the patient and photocopied case note extracts were requested. Cases returned were reviewed by a group of specialists and assessment made of a number of aspects of care provided. The assessment of patient nutrition was one area. RESULTS: From the surgical questionnaire, and where the question was answered (n=967), 93 patients had malnutrition on admission and only 55/93 were given nutritional support. From the case notes (n=902) only 118 patients had height recorded and 212 weight recorded. Formal nutritional assessment was made in only a minority of patients. CONCLUSION: Nutritional assessment in hospital is poor in an elderly surgical population. However, it must also be recognised that 93 patients were malnourished on admission and this may have been missed in the community.
Energy expenditure in chronic obstructive pulmonary disease—evaluation of simple measures

F Slinde, A M Grönberg, U Svantesson, L Hulthén and S Larsson
European Journal of Clinical Nutrition 65 (12): 1309-1313

Abstract

BACKGROUND/OBJECTIVES: Almost 50% of all chronic obstructive pulmonary disease (COPD) patients become underweight. One possible reason for nutritional treatment to fail could be miscalculation of patients’ energy requirements. The aim of this study was, therefore, to evaluate simple measures that may be used to assess the energy requirement of COPD patients. SUBJECTS/METHODS: This cross-sectional evaluation study includes 68 COPD patients (42 women). Resting metabolic rate (RMR) was assessed by indirect calorimetry, while total energy expenditure (TEE) was assessed by a 7-day monitoring using the ActiReg. Simple measures to evaluate was body weight (kg) multiplied by 125 kJ (30 kcal), predicted RMR multiplied by 1.7 and two simple questionnaires. RESULTS: Mean physical activity level (PAL) from the ActiReg was 1.46. Calculation of energy expenditure multiplying body weight with 125 kJ resulted in a TEE of 8614 kJ compared with ActiReg 8317 kJ (P=0.10). To multiply predicted RMR by 1.7 resulted in a statistically significant overestimation of 1335 kJ (P<0.01). Both questionnaires showed a clear ‘dose-response’ regarding PAL from ActiReg in the different activity categories. CONCLUSIONS: This study shows that simple measures of energy expenditure could, on group level, assess COPD patient’s energy needs. However, for individual assessment of energy need, more thorough procedures are necessary.

Nutritional state, energy intakes and energy expenditure of amyotrophic lateral sclerosis (ALS) patients

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Clinical Nutrition (2011) 30 (5): 553-559

Abstract

Amyotrophic lateral sclerosis (ALS) alters nutritional state, energy intake and energy expenditure. This article aims at reviewing present knowledge on these topics in order to determine energy requirements for maintaining a neutral energy balance in ALS patients. Maintaining a neutral energy balance prevents malnutrition and its complications and may improve physical functioning, quality of life and survival. Prevalence of malnutrition varies between 16 and 55% in ALS patients. Energy intakes are below recommended dietary allowances in 70% of ALS patients at least. These elements suggest a chronic negative energy balance with an imbalance between requirements and intakes. While insufficient intakes can be compensated with nutritional support, the energy requirements are unclear. Studies generally report hypermetabolism in ALS patients. Estimation of total energy expenditure and as a corollary energy needs, necessitates taking into account this hypermetabolism, physical activity and possibly mechanical ventilation. The review suggests a flow chart for optimal nutritional follow-up in clinics. Further studies are required to assess whether optimal nutritional follow-up improves outcome.
The CP-MST, a malnutrition screening tool for institutionalized adult cerebral palsy patients

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Abstract

BACKGROUND &AIMS: Progress in management of cerebral palsy (CP) patients has helped to increase life expectancy, but has also revealed nutritional consequences of this disability. The aims of this study were to determine the prevalence of malnutrition in long-term-institutionalized adult patients with CP and to propose specific malnutrition screening tool.

METHODS: Practitioners at 15 specialized institutions hosting CP patients assessed their nutritional status and completed a binary questionnaire containing thirteen questions related to factors suspected of increasing malnutrition. Moderate malnutrition was defined as the following: loss of weight (%) ≥5 to <10 or BMI ≥16 to <18.5 or albuminemia (g/l) ≥30 to <35. Markers of malnutrition were identified by bivariate analysis (ANOVA and Chi-square). Stepwise factorial discriminant analysis was used to determine the best subset of parameters for use in computation of a screening score.

RESULTS: A total of 365 patients age 35.7 ± 9.0 years were identified. Malnutrition was severe in 25%, moderate in 33% and absent in 42% of cases. The four strongest factors associated with malnutrition were used to build a three-level malnutrition screening tool for CP adult patients (CP-MST) as follows: body weight <40 kg (10 points), sitting position uncomfortable or impossible (4 points), partial or total help to feed (4 points) and suspicion of gastro-esophageal reflux (3 points), (P < 0.0001): A screening score higher than 10 points indicated high risk with malnutrition probability of 90%, and detected 37% of malnourished patients. Conversely, a score equal to 0 excluded severe malnutrition in 90% of cases. CONCLUSION: In light of the fact that 58% of these patients were malnourished, the CP-MST would appear to be useful for detecting malnutrition, underlining the need for a multidisciplinary approach in CP patients.

Nutritional screening and mortality in newly institutionalised elderly: a comparison between the Geriatric Nutritional Risk Index and the Mini Nutritional Assessment

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Abstract

BACKGROUND &AIMS: Several tools are available for nutritional screening. We evaluated the risk of mortality associated with the Geriatric Nutritional Risk Index (GNRI) and the Mini Nutritional Assessment (MNA) in newly institutionalised elderly. METHODS: A prospective observational study involving 358 elderly newly admitted to a long-term care setting. Hazard ratios (HR) for mortality among GNRI categories and MNA classes were estimated by multivariable Cox's model. RESULTS: At baseline, 32.4% and 37.4% of the patients were classified as being malnourished (MNA <17) and at severe nutritional risk (GNRI <92), respectively, whereas 57.5% and 35.2%, respectively, were classified as being at risk for malnutrition (MNA 17-23.5) and having low nutritional risk (GNRI 92-98). During a median follow-up of 6.5 years [25th-75th percentile, 5.9-8.6], 297 elderly died. Risk for all-cause mortality was significantly associated with nutritional risk by the GNRI tool (GNRI<92 HR = 1.99 [95%CI, 1.38-2.88]; GNRI 92-98 HR = 1.51 [95%CI, 1.04-2.18]) but not with nutritional status by the MNA. A significant association was also found with cardiovascular mortality (GNRI <92 HR = 1.79 [95%CI, 1.23-2.61]). CONCLUSIONS: Nutritional risk by GNRI but not nutritional status by MNA was associated with higher mortality risk. Present data suggest that in the nutritional screening of newly institutionalised elderly the use of the GNRI should be preferred to that of the MNA.
Polypharmacy and nutritional status in elderly people

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Abstract

PURPOSE OF REVIEW: Increasing use of drugs among elderly people has raised concerns about possible negative health outcomes, including malnutrition, associated with polypharmacy. Evidence about the association of polypharmacy with nutritional status is scarce. This review summarizes the relevant evidence regarding polypharmacy and nutritional status in elderly people. RECENT FINDINGS: The probability of nutritional problems as a consequence of drugs is highest in elderly people suffering from several diseases. Drug treatment may contribute to poor nutritional status by causing loss of appetite, gastrointestinal problems, and other alterations in body function. Some recently published studies add evidence on possible association between increasing number of drugs and malnutrition. Studies indicate also an association between polypharmacy and weight changes. In addition, there are available studies that have shown deficits in the intake of specific macronutrients and micronutrients (e.g. fiber, glucose, and specific vitamins) for those with a high number of drugs in use. SUMMARY: On the basis of available evidence, the role of polypharmacy on nutritional status among elderly people is unclear. Some diseases promote malnutrition; thus, the independent role of drugs for nutritional status is challenging to determine. Longitudinal studies with careful adjustment for underlying diseases are needed to explore association between polypharmacy and malnutrition. Nutritional evaluation should be a routine part of comprehensive geriatric assessment that is conducted ideally in multiprofessional teams, including physician, pharmacist, and dietitian.

Nutritional intervention and quality of life in palliative care patients

M Fleming, C J Hollins Martin and C R Martin
British Journal of Nursing (2011) 20 (20): 1320-1324

Abstract

Quality of life measures can be used by health professionals to assess effectiveness of nutritional interventions administered to palliative care patients. Stabilizing, maintaining and attempting to increase weight in palliative care patients through the support of oral feeding, and provision of artificial feeding, has been shown to mediate the metabolic and physical wasting effects of the disease process and improve general comfort. A quality of life instrument is a multidimensional questionnaire that health professionals can use to measure domains relating to physical, psychological and social aspects of living, and health and disease outcomes. There are three instruments specifically designed to assess quality of life in patients receiving palliative care. These are: The Palliative Care Quality of life Instrument, The Assessment of Quality of Life at the End of Life (AQEL), and The Spitzer Quality of Life Index (SQLI). General use quality of life measures are multifaceted; however, for use with palliative care patients, they have added dimensions of spirituality, existential issues (purpose and meaning of life), family members’ perceptions of quality of care, symptom control and family support. Use of quality of life scales provides health professionals and organizations with an ideal measure for planning, targeting and evaluating health interventions.
Nurses’ knowledge of the provision of oral care for patients with dysphagia

Y Durgude and N Cocks
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Abstract
There has been little research on the provision and adaptation of oral care for patients with dysphagia in nursing homes. This study collected data via a questionnaire specifically on the knowledge of oral hygiene and the current oral care practices for patients with dysphagia. Fifty-three registered nurses (RNs) completed the questionnaires. The results of the questionnaire indicated that although RNs gave more oral care daily to their patients with dysphagia than to their patients without dysphagia, they had limited knowledge of drugs that affect oral care and of medical conditions associated with poor oral hygiene. Of particular concern was the limited knowledge of the link between dysphagia, oral hygiene and pneumonia and that some of the current oral care practices may be putting patients who have dysphagia at increased risk of developing pneumonia. These results are discussed in light of previous research on the topic and recommendations are made with regards to oral care training.
This article reviews the current research and nutrition recommendations gained from prospective trials, retrospective analyses, and expert opinions based on the authors’ practices in Galveston, Texas, and Vienna, Austria.

Payne C (2011) Reducing variable consistency in thickened drinks. Nursing & Residential Care 13 (10): 469 - 473. This study discusses the variation in consistency of thickened drinks and what to consider when thickening drinks in order to deliver to the patient the recommended consistency.

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Stone C, Reif W and Brotherton A (2011) Improving nutritional care – quality, innovation, productivity and prevention. Compete Nutrition 11 (5): 21-23. This article discusses the work that has been undertaken in one area of the UK to improve nutritional care.
