## Contents

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibre-supplemented tube feeding in the hospitalised elderly</td>
<td>4</td>
</tr>
<tr>
<td>Vandewoude MFJ et al.</td>
<td></td>
</tr>
<tr>
<td>Early enteral feeding in newborn surgical patients</td>
<td>4</td>
</tr>
<tr>
<td>Ekingen G et al.</td>
<td></td>
</tr>
<tr>
<td>Enteral nutrition in critically ill patients with severe hemodynamic failure after cardiopulmonary bypass</td>
<td>5</td>
</tr>
<tr>
<td>Berger MM et al.</td>
<td></td>
</tr>
<tr>
<td>Hypocaloric feeding of obese patients in the intensive care unit</td>
<td>5</td>
</tr>
<tr>
<td>Dickerson RN</td>
<td></td>
</tr>
<tr>
<td>Predicted vs Measured Energy Expenditure in Critically Ill, Underweight Patients</td>
<td>6</td>
</tr>
<tr>
<td>Campbell CG et al.</td>
<td></td>
</tr>
<tr>
<td>Implementation of a Nutrition Support Protocol Increases the Proportion of Mechanically Ventilated Patients Reaching Enteral Nutrition Targets in the Adult Intensive Care Unit</td>
<td>6</td>
</tr>
<tr>
<td>Mackenzie SL et al.</td>
<td></td>
</tr>
<tr>
<td>Percutaneous radiologic gastrostomy versus nasogastric tube in critically ill patients</td>
<td>7</td>
</tr>
<tr>
<td>Roy PM et al.</td>
<td></td>
</tr>
<tr>
<td>Assessing the Metabolic and Clinical Consequences of Early Enteral Feeding in the Malmouriished Patient</td>
<td>7</td>
</tr>
<tr>
<td>Flesher ME et al.</td>
<td></td>
</tr>
<tr>
<td>Effect of timing and method of enteral tube feeding for dysphagic stroke patients (FOOD): a multicentre randomised controlled trial</td>
<td>8</td>
</tr>
<tr>
<td>Dennis MS, Lewis SC, Warlow C; The FOOD Trial Collaboration</td>
<td></td>
</tr>
<tr>
<td>Food habits and appetite of elderly women at the time of a femoral neck fracture and after nutritional and anabolic support</td>
<td>8</td>
</tr>
<tr>
<td>Carlsson P et al.</td>
<td></td>
</tr>
<tr>
<td>Evidence-based strategies for the use of oral nutritional supplements</td>
<td>9</td>
</tr>
<tr>
<td>Todorovic V</td>
<td></td>
</tr>
<tr>
<td>Effect of nutritional supplements on wound healing in home-nursed elderly: a randomized trial</td>
<td>9</td>
</tr>
<tr>
<td>Collins CE et al.</td>
<td></td>
</tr>
<tr>
<td>The administration of an oral carbohydrate-containing fluid prior to major elective upper-gastrointestinal surgery preserves skeletal muscle mass postoperatively - a randomised clinical trial</td>
<td>10</td>
</tr>
<tr>
<td>Yuill KA et al.</td>
<td></td>
</tr>
<tr>
<td>Routine oral nutritional supplementation for stroke patients in hospital (FOOD): a multicentre randomised controlled trial</td>
<td>10</td>
</tr>
<tr>
<td>Dennis MS, Lewis SC, Warlow C; The FOOD Trial Collaboration</td>
<td></td>
</tr>
<tr>
<td>Home enteral nutrition in children: an 11-year experience with 416 patients</td>
<td>11</td>
</tr>
<tr>
<td>Daveluy W et al.</td>
<td></td>
</tr>
<tr>
<td>Comparison between handgrip strength, subjective global assessment, and prognostic nutritional index in assessing malnutrition and predicting clinical outcome in cirrhotic outpatients</td>
<td>11</td>
</tr>
<tr>
<td>Álvares-da-Silva MR and Reverbel da Silveira T</td>
<td></td>
</tr>
<tr>
<td>Development and validation of a hospital screening tool for malnutrition: the short nutritional assessment questionnaire (SNAQ®)</td>
<td>12</td>
</tr>
<tr>
<td>Kruizenga HM et al.</td>
<td></td>
</tr>
<tr>
<td>The Subjective Global Assessment reliably identifies malnutrition-related muscle dysfunction</td>
<td>12</td>
</tr>
<tr>
<td>Norman K et al.</td>
<td></td>
</tr>
<tr>
<td>Nutritional status and clinical outcomes of older patients in rehabilitation</td>
<td>13</td>
</tr>
<tr>
<td>Neumann SA et al.</td>
<td></td>
</tr>
<tr>
<td>References</td>
<td>14</td>
</tr>
</tbody>
</table>
Fibre-supplemented tube feeding in the hospitalised elderly

Vandewoude MFJ, Paridaens KMJ, Suy RAL, Boone MAA and Strobbe H

Age and Ageing 2005 34(2):120-124

Abstract

Objectives: To evaluate the effect of fibre supplementation in enteral feeding on bowel function in hospitalised geriatric patients, and to assess its metabolic and nutritional efficiency. Design: Prospective randomised controlled trial with stratification for diabetes. Setting: Department of Geriatrics at the University of Antwerp. Subjects: During 30 months (January 2000–June 2002) every hospitalised patient requiring tube feeding was assessed for eligibility (n = 183). Finally 172 patients (19% diabetics) were randomised. Methods: An enteral nutritional regimen consisting of 30 kcal/kg in 2000 ml with a calorie/nitrogen ratio of 156 with or without fibre was instituted. At weekly intervals, stool output was qualitatively evaluated by recording frequency, volume (small <1/2 cup, large >1/2 cup) and consistency (solid-formed, soft-pasty or liquid-watery). Nutritional and metabolic effects were evaluated through laboratory analysis. Results: Overall mortality was 24% with a trend for excess mortality in diabetic patients (33.3% versus 21.6% in non-diabetics; P = 0.176). There was no difference in duration of feeding between the fibre group (27.5 days; 95% CI = 19.1–35.9) and the no fibre group (27.9 days; 95% CI = 20.2–35.5). In the fibre-supplemented group, stool frequency was lower (4.1 per week; 95% CI = 3.7–4.6) than in controls (6.3 per week; 95% CI = 5.6–6.9). Qualitatively, stool consistency was higher (P < 0.001) but no difference in volume was noted. There were no differences in final laboratory parameters between groups. Conclusions: Fibre supplementation improved bowel function with reduced stool frequency and more solid stool consistency. It did not affect the nutritional efficiency of enteral feeding in hospitalised geriatric patients. Diabetes may be a risk factor for mortality in malnourished patients requiring tube feeding.

Early enteral feeding in newborn surgical patients

Ekingen G, Ceran C, Guvenc BH, Tuzlaci A, Kahraman H

Nutrition (2005) 21(2):142-146

Abstract

Objective: We report the results of a multicenter prospective trial of early enteral trophic feeding in a group of 56 neonates who required abdominal surgery for a variety of congenital anomalies. Methods: In this clinical study, 33 neonates were fed in the early postoperative period (early enteral nutrition [EEN] group), and the remaining 23 (control [C] group) were fasted until resolution of postoperative ileus. Patients in the EEN group (Kocaeli feeding protocol) received 3 to 5 ml of breast milk every hour through a nasogastric feeding tube, starting a mean of 12 h (8 to 20 h) after surgery. The nasogastric tube was clamped for 40 min after each infusion and then opened for drainage. Groups were further divided into two subgroups according to whether an intestinal anastomosis or laparotomy was performed. The change in daily gastric drainage, time to first stool, day of toleration to full oral feeding, and length of hospital stay were compared. Blood bilirubin levels, white blood cell count, and C-reactive protein levels were monitored. Results: The time to first stool and day of toleration to full oral feeding occurred significantly sooner, whereas nasogastric tube drainage duration and hospital stay were significantly shorter in the EEN-anastomosis group than in the C-anastomosis group. Time to first stool occurred significantly sooner in the EEN-laparotomy group than in the C-laparotomy group, although other parameters did not differ. Neither anastomatic leakage nor dehiscence was observed in any group. There were two cases of wound infection and two of exitus among patients in the C group. Conclusion: Postoperative, early intragastric, small-volume breast milk feeding is well tolerated by newborns. It is a reliable and feasible approach in neonates even in the presence of an intestinal anastomosis after abdominal surgery.
Enteral nutrition in critically ill patients with severe hemodynamic failure after cardiopulmonary bypass

Berger MM, Reveley JP, Cayeux MC, Chiolero RL


Abstract

Background & aims: The study was designed to investigate and quantify nutritional support, and particularly enteral nutrition (EN), in critically ill patients with severe hemodynamic failure. Methods: Prospective, descriptive study in a surgical intensive care unit (ICU) in a university teaching hospital: patients aged 67±13 yrs (mean±SD) admitted after cardiac surgery with extracorporeal circulation, staying ≥5 days in the ICU with acute cardiovascular failure. Severity of disease was assessed with SAPS II, and SOFA scores. Variables were energy delivery and balance, nutrition route, vasopressor doses, and infectious complications. Artificial feeding delivered according to ICU protocol. EN was considered from day 2–3. Energy target was set 25 kcal/kg/day to be reached stepwise over 5 days. Results: Seventy out of 1114 consecutive patients were studied, aged 67±17 years, and staying 10±7 days in the ICU. Median SAPS II was 43. Nine patients died (13%). All patients had circulatory failure: 18 patients required intra-aortic balloon-pump support (IABP). Norepinephrine was required in 58 patients (83%). Forty patients required artificial nutrition. Energy delivery was very variable. There was no abdominal complication related to EN. As a mean, 1360±620 kcal/kg/day could be delivered enterally during the first 2 weeks, corresponding to 70±35% of energy target. Enteral nutrient delivery was negatively influenced by increasing dopamine and norepinephrine doses, but not by the use of IABP. Conclusion: EN is possible in the majority of patients with severe hemodynamic failure, but usually results in hypocaloric feeding. EN should be considered in patients with careful abdominal and energy monitoring.

Hypocaloric feeding of obese patients in the intensive care unit

Dickerson RN

Current Opinion in Clinical Nutrition & Metabolic Care 2005 8(2):189-196

Abstract

Purpose of review: Given the increased awareness of the detrimental complications of overfeeding, particularly hyperglycemia, the safety and efficacy of specialized nutritional support for the critically ill obese patient is of major concern. The intent of this review is to provide the scientific foundation, supporting and conflicting literature, for the implementation of hypocaloric, high-protein specialized nutritional support for acutely ill, hospitalized patients with obesity. Recent findings: Similar anabolic equivalencies can be achieved with hypocaloric, high-protein nutritional support compared with a more traditional higher calorie, lower protein regimen. The provision of additional calories worsens hyperglycemia, results in a further accumulation of fat mass, and increases the potential for overfeeding without significant net protein anabolism gain. Summary: The current literature indicates that hypocaloric, high-protein enteral or parenteral nutrition is promising as the standard of practice for the metabolic support of the critically ill obese patient. The achievement of net protein anabolism and the avoidance of overfeeding complications are the primary goals, with fat weight loss a welcome secondary benefit.
Predicted vs Measured Energy Expenditure in Critically Ill, Underweight Patients

Campbell CG, Zander E, Thorland W

Abstract
A retrospective analysis was conducted to compare 4 energy-prediction equations against measured resting energy expenditure (MREE) determined via indirect calorimetry. Data from a heterogeneous group of 42 critically ill, severely underweight (59.50 ± 17.30 kg; 77.1 ± 9.7% ideal body weight [IBW]) male patients were assessed. The Hamwi formula was used to determine IBW. The Harris-Benedict (HB) equation was calculated for patients <90% IBW using both current body weight (CBW) and IBW. Energy needs were also estimated with an Ireton-Jones formula for all mechanically ventilated patients (n = 37). For patients <85% IBW (n = 31), an adjusted body weight was determined ([CBW + IBW]/2) and used in the HB formula. The HB formula using the IBW, CBW, and adjusted body weight was significantly different (p < .05) than MREE. The Ireton-Jones equation was not significantly different (p > .05) from MREE but tended to overestimate energy needs (109.3% ± 16.8% MREE). Conversely, using the CBW or IBW in the HB underestimated the patient's energy needs; 77.0% ± 11.6% MREE and 90.9 ± 16.1% MREE, respectively. For patients <85% IBW, use of the adjusted body weight in the HB represented 84.2% ± 13.9% MREE. The average caloric need was 31.2 ± 6.0 kcal/kg CBW. Indirect calorimetry remains the best method of determining a patient's energy needs. Until a large prospective trial is conducted, a combination of prediction equations tempered with clinical judgment and monitoring the appropriateness of the nutrition prescription remains the best approach to quality patient care.

Implementation of a Nutrition Support Protocol Increases the Proportion of Mechanically Ventilated Patients Reaching Enteral Nutrition Targets in the Adult Intensive Care Unit

Mackenzie SL, Zygun DA, Whitmore BL, Doig CJ, Hameed SM

Abstract
Background: Despite the evidence that enteral feeding reduces morbidity in critically ill patients and is preferred to parenteral nutrition, the delivery of enteral nutrition (EN) is often inadequate. The purpose of this study was to determine whether implementation of an evidence-based nutrition support (NS) protocol could improve EN delivery. Methods: An NS protocol incorporating available scientific evidence; data from a retrospective survey of 30 intensive care unit (ICU) patients; and input from dietitians, intensive care physicians, surgeons, nurses, and pharmacists was developed. The impact of this protocol was evaluated prospectively in 123 consecutive adult patients admitted to a multisystem ICU who were eligible for EN. Results: The percentage of patients who received at least 80% of their estimated energy requirements during their ICU stay increased from 20% before implementation of the NS protocol to 60% after implementation (p < .001). After adjusting for confounders, those in the post-implementation group received significantly more kcal/kg/d than the pre-implementation group (3.71 kcal/kg/d; 95% confidence interval, 1.64 to 5.78; p = .001). Parenteral nutrition kcal/kg/d use was reduced in the post-implementation group (1.6 vs 13%, p = .02). There was no difference in time to initiation of enteral nutrition between groups (1.76 days pre-protocol vs 1.44 days post-protocol implementation, p = .9). Conclusions: The development and use of an evidence-based NS protocol improved the proportion of enterally fed ICU patients meeting their calculated nutrition requirements.
Assessing the Metabolic and Clinical Consequences of Early Enteral Feeding in the Malnourished Patient

Flesher ME, Archer KA, Leslie BD, McCollom RA, Martinka GP


Abstract

Background: It is often thought that enteral feeding should be initiated slowly in those who are severely malnourished. This descriptive study examined the effect of an enteral feeding protocol on the typical metabolic consequences seen in refeeding syndrome. Methods: A retrospective chart review was conducted on 51 patients who had been placed on hospital-wide enteral feeding and electrolyte replacement protocols over a 9-month period to determine whether there were any negative clinical consequences to early feeding. Results: Goal feeding rate was achieved within 17.6 ± 8.7 hours. Forty patients (80%) developed depletions in phosphate, magnesium, or potassium after initiation of enteral feeding, including 93% of those deemed “at risk” and 74% of those “not at risk.” All patients received electrolyte replacement according to protocols, and no patients showed any negative clinical effect. Conclusions: This study showed that malnourished patients at risk for refeeding syndrome can be fed early without observed negative clinical consequences. An electrolyte replacement protocol may be an effective means of minimizing the electrolyte imbalances associated with early feeding. It also demonstrated the significance of applying such protocols to all patients requiring enteral support, as current methods of assessing “risk” for refeeding syndrome may be inadequate.
Effect of timing and method of enteral tube feeding for dysphagic stroke patients (FOOD): a multicentre randomised controlled trial

Dennis MS, Lewis SC, Warlow C; The FOOD Trial Collaboration


Abstract

Background: Undernutrition is common in patients admitted with stroke. We aimed to establish whether the timing and route of enteral tube feeding after stroke affected patients' outcomes at 6 months. Methods: The FOOD trials consist of three pragmatic multicentre randomised controlled trials, two of which included dysphagic stroke patients. In one trial, patients enrolled within 7 days of admission were randomly allocated to early enteral tube feeding or no tube feeding for more than 7 days (early versus avoid). In the other, patients were allocated percutaneous endoscopic gastrostomy (PEG) or nasogastric feeding. The primary outcome was death or poor outcome at 6 months. Analysis was by intention to treat. Findings: Between Nov 1, 1996, and July 31, 2003, 859 patients were enrolled by 83 hospitals in 15 countries into the early versus avoid trial. Early tube feeding was associated with an absolute reduction in risk of death of 5.8% (95% CI -0.8 to 12.5, p=0.09) and a reduction in death or poor outcome of 1.2% (-4.2 to 6.6, p=0.7). In the PEG versus nasogastric tube trial, 321 patients were enrolled by 47 hospitals in 11 countries. PEG feeding was associated with an absolute increase in risk of death of 1.0% (-10.0 to 11.9, p=0.9) and an increased risk of death or poor outcome of 7.8% (0.0 to 15.5, p=0.05). Interpretation: Early tube feeding might reduce case fatality, but at the expense of increasing the proportion surviving with poor outcome. Our data do not support a policy of early initiation of PEG feeding in dysphagic stroke patients.

Food habits and appetite of elderly women at the time of a femoral neck fracture and after nutritional and anabolic support

Carlsson P, Tidermark J, Ponzer S, Söderqvist A, Cederholm T


Abstract

Objective: To study appetite and food choices in lean elderly women at the time of a femoral neck fracture and after 6 months of nutritional and anabolic intervention. Subjects and methods: Forty-five nondemented women >70 years of age (mean ± SD: 83 ± 5 years) with a recent hip fracture and body mass index <24 kg/m² (mean: 20.5 ± 2.3) were interviewed about their appetite and dietary habits prior to fracture. The patients were randomized to treatment with a protein-rich liquid supplement (PR; 200 kcal and 20 g protein day⁻¹) alone or in combination with nandrolone decanoate injections (PR/N) 25 mg i.m. every third week or to a control group (C). A second interview was conducted 6 months later. Results: Reduced appetite before the fracture was reported by 60%. Half of the patients did not have dessert with any of their daily meals, one-third used low-fat margarines and one-third drank water with their meals. The estimated mean daily energy intake was 6.4 ± 1.2 MJ (1541 ± 304 kcal) indicating that three of four subjects did not meet their energy needs. At 6 months, 40% reported reduced appetite. There was no difference in the change of appetite between the three randomized groups. Still, half of the subjects appeared to not meet their energy needs. Protein intake increased in the PR and PR/N groups, in contrast to the controls (P = 0.002). Conclusion: Reduced appetite and insufficient energy intake was recorded in lean elderly women with a femoral neck fracture. Nutritional supplementation alone or in combination with an anabolic steroid increased protein intake without adversely affecting appetite.
Evidence-based strategies for the use of oral nutritional supplements

Todorovic V

Abstract
Prescribable oral nutritional supplements are commonly used as a method of nutritional support in the prevention and treatment of malnutrition in adults. There is growing evidence to suggest that when used appropriately in treatment plans, individuals receiving them will benefit from functional and clinical improvements. The use of supplements in the community has increased over the last decade and questions about the increasing costs and efficacy of the products are often raised within health-care communities. The development of guidelines and protocols for the use of supplements in the community that are based on evidence of need and indicate a clear pathway of care, together with intended benefit, should help to address the issues of costly, inappropriate prescribing.

Effect of nutritional supplements on wound healing in home-nursed elderly: A randomized trial

Collins CE, Kershaw J, Brockington S

Abstract
Objective: The objective was to determine whether provision of oral nutritional supplements, delivered by community nurses, could improve nutritional status and wound healing in home-nursed elderly. Methods: This was a double-blind, randomized trial in 50 elderly patients referred for wound management. Patients received 237 mL/d of 4 or 8 kJ/mL of an oral nutritional supplement for 4 wk. Nutritional status was measured with the Subjective Global Assessment and the Mini-Mental State Examination questionnaire to determine cognitive function and wound characteristics to assess healing. Differences between variables were examined with the Mann-Whitney or Student’s t test for comparing two groups, one-way analysis of variance when there was more than two groups, and chi-square analysis for comparing two categorical variables. Associations between variables were examined with Pearson’s correlation and regression analysis. Results: At baseline, 34% subjects were moderately malnourished and 8% were severely malnourished. In both groups, there was significantly greater improvement in Mini-Mental State Examination scores at week 4 (95% confidence interval -2.0 to -0.001, P = 0.04) and a greater decrease in the wound effusion score (95% confidence interval -2.0 to 0.0, P = 0.045). Median length of stay did not differ between groups (P > 0.05). Conclusions: Malnutrition is common in elderly patients who are nursed at home for wound management. Provision of energy- and protein-dense oral supplements by community nurses is effective in improving some indices of wound healing and cognitive function in this group. Although further study is needed to determine the effect on length of stay, the nutritional needs of this vulnerable group should not be overlooked.
The administration of an oral carbohydrate-containing fluid prior to major elective upper-gastrointestinal surgery preserves skeletal muscle mass postoperatively - a randomised clinical trial

Yuill KA, Richardson RA, Davidson HIM, Garden OJ, Parks RW


Abstract

Aim: Recent evidence suggests that the provision of energy-containing fluids is safe and may impact positively on markers of recovery. The aims of this study were to assess the tolerance of preoperative carbohydrate fluid administration and to determine its effect on postoperative metabolic and clinical responses. Methods: Patients admitted to the Royal Infirmary of Edinburgh for major, elective abdominal surgery were recruited to this double-blind, randomised study and received either a placebo drink or carbohydrate (12.6 g/100 ml) drink (CHOD). Patients consumed 800 ml of their drink on the evening before surgery and 400 ml on the day of surgery 2–3 h before the induction of anaesthesia. Nutritional status was determined using body mass index (BMI) and upper arm anthropometry; all measurements were taken preoperatively, postoperatively and at discharge. Blood glucose and insulin concentrations were also measured preoperatively and on the first postoperative day. Length of hospital stay (LOS) and postoperative complications were recorded. Results: Seventy-two patients were recruited and 65 (34 male:31 female) completed this study. Thirty-four patients were randomised to receive the placebo drink (control group) and 31 patients to receive the carbohydrate drink (CHOD group). Groups were well-matched in terms of gender and age. There were no differences between the two groups at baseline for BMI (control: -25.1±1.7 kg/m²; CHOD -25.2±1.2 kg/m²), upper arm anthropometry or surgical procedure. At discharge loss of muscle mass (arm muscle circumference) was significantly greater in the control group when compared with the CHOD group (control: -1.1±0.15 cm; CHOD -0.5±0.16 cm; P<0.05). Baseline insulin (control: 20.7±4.9 mU/l; CHOD: 24.6±6.2 mU/l) and glucose (control: 6.0±1.4 mmol/l; CHOD 5.7±1.4 mmol/l) were comparable in the two groups and did not differ postoperatively. No complications were recorded as a result of preoperative fluid consumption. Postoperative morbidity occurred in six patients from each group. Median LOS in the control group was 10 days (IQR=6), and 8 days (IQR=4) in the CHOD group. Conclusion: Preoperative consumption of carbohydrate-containing fluids is safe. Provision of a carbohydrate energy source prior to surgery may attenuate depletion of muscle mass after surgery. Further studies are required to determine if this preservation of muscle mass is reflected in improved function and reduced rehabilitation time.

Routine oral nutritional supplementation for stroke patients in hospital (FOOD): a multicentre randomised controlled trial

Dennis MS, Lewis SC, Warlow C; The FOOD Trial Collaboration


Abstract

Background: Undernutrition is common in hospital patients with stroke, can develop or worsen in hospital, and is associated with poor outcomes. We aimed to establish whether routine oral nutritional supplements improve outcome after stroke. Methods: The FOOD trials are a family of three pragmatic, multicentre, randomised controlled trials. We measured the outcomes of stroke patients who could swallow and who were randomly allocated normal hospital diet or normal hospital diet plus oral nutritional supplements until hospital discharge. The primary outcome was death or poor outcome (modified Rankin scale (mRS) grade 3-5), 6 months after enrolment, measured unaware of treatment allocation. Analysis was by intention to treat. Findings: Between Nov 1, 1996, and July 31, 2003, 4023 patients were enrolled by 125 hospitals in 15 countries. Only 314 (8%) patients were judged to be undernourished at baseline. Vital status and mRS at the end of the trial were known for 4012 and 4004 patients, respectively. Supplemented diet was associated with an absolute reduction in risk of death of 0.7% (95% CI -1.4 to 2.7) and an increased risk of death or poor outcome of 0.7% (-2.3 to 3.8). Interpretation: We could not confirm the anticipated 4% absolute benefit for death or poor outcome from routine oral nutritional supplements for mainly well nourished stroke patients in hospital. Our results would be compatible with a 1% or 2% absolute benefit or harm from oral supplements. These results do not support a policy of routine oral supplementation after stroke.
Home enteral nutrition in children: an 11-year experience with 416 patients

Daveluy W, Guimber D, Mention K, Lescut D, Michaud L, Turck D, Gottrand F

Abstract

Background & aims: We report our experience of paediatric home enteral nutrition, as there is little detailed evidence published. Methods: All patients younger than 18 years commencing treatment between January 1990 and December 2000 were included in this retrospective study. Results: The study covered 416 children and adolescents, corresponding to a total of 243,844 days of home enteral nutrition (HEN). The mean (±SD) age of patients commencing treatment was 5.4±5.3 years (range 0.1–17.8). Indications were digestive disorders in 35% of patients, neurological and muscular disorders in 35%, malignancy in 11%, failure to thrive in 8%, and miscellaneous ailments in 9%. Enteral feeding comprised commercially available paediatric industrial diets in 36%, adult-type diet in 35% and infant formulas in 29%. Children received enteral feeding by nasogastric tube (53%), or gastrostomy (41%). A mechanical pump was used in 98% of the patients. The mean duration of treatment was 595±719 days. Conclusions: HEN can be used while treating a large group of chronic diseases of children. It can be started very early in life and is often prolonged over several years.

Comparison between handgrip strength, subjective global assessment, and prognostic nutritional index in assessing malnutrition and predicting clinical outcome in cirrhotic outpatients

Álvares-da-Silva MR and Reverbel da Silveira T

Abstract

Objective: This study compared three methods of assessing malnutrition in cirrhotics and correlated nutritional status with clinical outcome. Methods: This cross-sectional study evaluated nutritional status by subjective global assessment (SGA), prognostic nutritional index (PNI), and handgrip strength (HG) in outpatients with cirrhosis (n = 50) and two control groups with hypertension (n = 46) and functional gastrointestinal disorders (n = 49). Patients with cirrhosis were followed for 1 y to verify the incidence of major complications, the need for transplantation, and death. Results: Among patients with cirrhosis, 88% were Child-Pugh A and only 12% were Child-Pugh B. Among these, prevalences of malnutrition were 28% by SGA, 18.7% by PNI, and 63% by HG (P < 0.05). HG, but not SGA or PNI, predicted a poorer clinical outcome in patients with cirrhosis because major complications such as uncontrolled ascites, hepatic encephalopathy, spontaneous bacterial peritonitis, and hepatorenal syndrome developed in 65.5% of malnourished patients versus 11.8% of well-nourished ones (P < 0.05). No significant differences by any method were seen between the two groups regarding liver transplantation or death. Conclusions: There was a high prevalence of malnutrition in cirrhotic outpatients, especially when assessed by HG, which was superior to SGA and PNI in this study. HG was the only technique that predicted a significant incidence of major complications in 1 y in undernourished cirrhotic patients.
Development and validation of a hospital screening tool for malnutrition: the short nutritional assessment questionnaire (SNAQ©)

Kruizenga HM, Seidell JC, de Vet HCW, Wierdsma NJ, van Bokhorst–de van der Schueren MAE


Abstract

Objective: For the early detection and treatment of malnourished hospital patients no valid screening instrument for the Dutch language exists. Calculation of percentage weight loss and body mass index (BMI) by the nurse at admission to the hospital appeared to be not feasible. Therefore, the short, nutritional assessment questionnaire (SNAQ©), was developed. Research, design and methods: Two hundred and ninety one patients on the mixed internal and surgery/oncology wards of the VU University medical center were screened on nutritional status and classified as well nourished (<5% weight loss in the last 6 months and BMI>18.5), moderately malnourished (5–10% weight loss in the last 6 months and BMI>18.5) or severely malnourished (>10% weight loss in the last 6 months or >5% in the last month or BMI<18.5). All patients were asked 26 questions related to eating and drinking difficulties, defecation, condition and pain. Odds ratio, binary and multinomial logistic regression were used to determine the set of questions that best predicts the nutritional status. Based on the regression coefficient a score was composed to detect moderately (≥2 points) and severely (≥3 points) malnourished patients. The validity, the nurse–nurse reproducibility and nurse–dietitian reproducibility was tested in another but similar population of 297 patients. Results: The questions ‘Did you lose weight unintentionally?’, ‘Did you experience a decreased appetite over the last month?’ and ‘Did you use supplemental drinks or tube feeding over the last month?’ were most predictive of malnutrition. The instrument proved to be valid and reproducible. Conclusion: SNAQ© is an easy, short, valid and reproducible questionnaire for early detection of hospital malnutrition.

The Subjective Global Assessment reliably identifies malnutrition-related muscle dysfunction

Norman K, Schütz T, Kemps M, Lübke HJ, Lochs H, Pirlich M


Abstract

Background: Muscle dysfunction is a common finding in malnourished patients and is associated with poor outcome. We investigated whether the Subjective Global Assessment (SGA) is a valuable tool for identifying malnutrition-related muscle dysfunction. Methods: Two hundred eighty seven consecutive patients were assessed on admission to hospital according to the SGA, anthropometric measurements, and to the results of bioelectrical impedance analysis. The SGA was used as the main criterion for the classification of malnutrition. Muscle function was assessed by handgrip strength. Results: Maximal voluntary handgrip strength was significantly lower in malnourished than in well-nourished male and female patients (45.22 (13.51–67.7) kg versus 30.82(11–48) kg in men; 23.81 (5.60—56.5) kg versus 18.5 (5.90–48.8) kg in women). Handgrip strength tended to decline with age. Handgrip strength was positively correlated to body cell mass (BCM) (r=0.72, P<0.001 in men and: r=0.56, P<0.001 in women) and to body mass index (r=0.271, P=0.03 in men and r=0.183, P=0.02 in women). BCM was identified as a powerful contributor to the variation in handgrip strength (delta r²=0.645, P<0.001). Conclusion: The SGA appears to be a reliable bedside assessment tool for malnutrition and malnutrition-related dysfunction. Patients classified malnourished according to the SGA have an impaired functional status. Every effort should be made to provide both nutritional and physical therapy in order to improve the patients’ outcome.
Nutritional status and clinical outcomes of older patients in rehabilitation

Neumann SA, Miller MD, Daniels L, Crotty M


Abstract

**Background:** Malnutrition is associated with poor outcomes in older adults and those admitted to rehabilitation may be particularly at risk. **Objective:** To assess the nutritional status and outcomes of older adults in rehabilitation. **Subjects and methods:** We recruited 133 adults ≥65 years from consecutive rehabilitation admissions. Nutritional status was assessed using the mini nutritional assessment, body mass index (BMI) and corrected arm muscle area (CAMA). Outcomes measured included length of stay, admission to higher level care, function and quality of life (QOL). **Results:** Sixty-two (47%) subjects were well nourished, 63 (47%) at risk of malnutrition and eight (6%) malnourished. Twenty-two (17%) and 27 (20%) were below the desirable reference values for BMI and CAMA respectively. Subjects at risk of malnutrition/malnourished had longer length of stay ($P=0.023$) and were more likely to be admitted to higher level care ($P<0.05$). These subjects also had poorer function on admission ($P<0.001$) and 90 days ($P=0.002$) and QOL on admission ($P<0.008$) and 90 days ($P=0.001$). Those with low CAMA were twice as likely to be admitted to higher level care ($P<0.05$) and had poorer function at 90 days ($P=0.017$). **Conclusions:** Over half our sample was identified as at risk of malnutrition or malnourished and this was associated with poorer clinical outcomes.
Useful references on Enteral Nutrition Support

- Swann J (2005), Providing solutions to feeding problems. Nursing and Residential Care, 7 (3): 118-121
  This article provides suggestions on how to make mealtimes a pleasurable experience and how to make sure residents receive sufficient nutrition.
  This article discusses the current progress of MUST, successes so far and ways in which to continue the tool’s development.
  This article discusses the importance of gut health in long-term enteral tube feeding.
  This article reports on the recent report issued by the National Patient Safety Agency for checking NG tube placement.
  This article reports on the use of diagnostics tools to assess protein and energy depletion in chronic haemodialysis patients.
  This article reviews the clinical practice and skill set of the intensive care unit dietitian.
  This article reviews the Canadian guidelines for nutritional support in intensive care units.
  This article reports on a prospective study looking at the validity of using elevated residual volumes as a marker for risk of aspiration in critically ill patients.
  This article addresses the basic principles of renal replacement therapy along with the nutritional implications in critically ill patients and presents a patient case to illustrate the clinical application of topics covered in the paper.
  This article describes available methods to assess protein and energy status, with special considerations pertaining to chronic haemodialysis patients.
  This article reports a study exploring the meanings that parents and children attach to food and eating, and how these influence their approaches to the dietary management of cystic fibrosis.
  This article reports on a study undertaken to evaluate the mini nutrition assessment and a screening sheet for malnutrition in elderly people.
  This article discusses how organisational structure and staff members’ routines influence activities related to food and meals in different caring contexts.