July 2022 Nutrition Research Review

Nutrition Considerations in Pediatric Surgical Patients

Publication: Nutrition in Clinical Practice
Authors: Debby S. Martins, Hannah G. Piper
Publish Date: May 2022

Abstract: Children who require surgical interventions are subject to physiologic stress, necessitating a period of healing when nutrition needs may temporarily change. Providing appropriate nutrition to children before and after surgery is an important part of minimizing surgical morbidity. There is a clear link between poor nutrition and surgical outcomes, therefore providing good reason for ensuring an appropriate nutrition plan is in place for children requiring surgery. This review will address recent research investigating nutrition considerations for pediatric surgical patients with a focus on practical tools to guide decision making in the preoperative, intraoperative, and postoperative period.

https://pubmed.ncbi.nlm.nih.gov/35502496/

Unresolved Issues in Perioperative Nutrition: A Narrative Review

Publication: Clinical Nutrition
Authors: Katherine L. Ford, Carla M. Prado, Arved Weimann, Philipp Schuetz, Dileep N. Lobo
Publish Date: May 2022

Abstract: This review focused on areas of perioperative nutrition that are perceived as controversial or are lacking in agreement. A literature search was conducted on 1 March 2022 and relevant high-quality articles published since 2015 were considered for inclusion. The results showed that most malnutrition screening tools are not specific to the surgical population except for the Perioperative Nutrition Screen (PONS). Also, poor muscle health is common in patients with malnutrition and further exacerbates negative health outcomes indicating that prevention, detection and treatment is of high importance in this population. Additionally, postoperative nutritional support benefits surgical outcomes and the importance of nutrition extends beyond the time in hospital and should remain a priority post-discharge. The impact of individual or personalized nutrition based on select patient characteristics remains to be further investigated. Overall, the importance of perioperative nutrition is evident in the literature despite select ongoing areas of contention.

https://www.clinicalnutritionjournal.com/article/S0261-5614(22)00173-X/fulltext

Impact of Malnutrition on Clinical Outcomes in Patients Diagnosed with COVID-19

Publication: Journal of Parenteral and Enteral Nutrition
Authors: Jana Ponce, Alfred Jerrod Anzalone, Kristina Bailey, Harlan Sayles, Megan Timmerman, Mariah Jackson, James McClay, Corrine Hanson, National COVID Cohort Collaborative (N3C) Consortium
Publish Date: June 2022

Abstract: This study aimed to identify the impact of malnutrition on mortality and adverse hospital events in patients hospitalized with COVID-19. This study used data from the National COVID Cohort Collaborative (N3C), a COVID-19 repository containing harmonized, longitudinal electronic health record data from US health systems. The study results showed that of the 343,188 patients hospitalized with COVID-19, 11,206 had a history of malnutrition and 15,711 had hospital-acquired malnutrition. Odds of mortality were significantly higher in patients with a history of malnutrition (odds ratio [OR], 1.71; 95% confidence interval [CI], 1.63-1.79; $P < 0.001$) and hospital-acquired malnutrition (OR, 2.5; 95% CI, 2.4-2.6; $P < 0.001$). Adjusted odds of adverse hospital events were also significantly elevated in both malnutrition groups.

https://pubmed.ncbi.nlm.nih.gov/35672915/

A Systematic Review of the Definitions and Prevalence of Feeding Intolerance in Critically Ill Adults

Publication: Clinical Nutrition ESPEN
Authors: Bethan Jenkins, Philip C Calder, Luise V Marino
Publish Date: June 2022

Abstract: This systematic review was performed of studies in adult critical care patients to evaluate the definitions, relative risk, predictors and clinical outcomes of feeding intolerance (FI) and to propose a uniform definition. 89 unique studies containing a definition of FI were identified. Studies were categorised according to definition of FI into 3 groups: 1) Gastric residual volume (GRV) and/or gastrointestinal (GI) symptoms (n = 74); 2) Ability to achieve EN target (n = 5); 3) Composite definitions (n = 10). Meta-analysis showed a relative risk of FI of 0.55 [95% CI 0.45, 0.68] ($p < 0.00001$). The most frequently reported predictors of FI were use of vasoactive drugs, sedation or use of muscle relaxants, intra-abdominal pressure and APACHE II score. FI is inconsistently defined in the literature but is reportedly common amongst critically ill adults. FI is most frequently defined by the presence of raised GRV and GI symptoms. However, studies show GRV to correlate poorly with delayed gastric emptying and this review demonstrated no correlation between GRV threshold and prevalence of FI. A standardised definition of FI is essential for future research and clinical practice. We propose a definition of FI including a failure to reach EN targets in addition to presence of GI symptoms.

https://pubmed.ncbi.nlm.nih.gov/35623881/

Growth and Gastrointestinal Tolerance in Healthy Term Infants Fed Milk-Based Infant Formula Supplemented with Five Human Milk Oligosaccharides (HMOs): A Randomized Multicenter Trial

Publication: Nutrients
Authors: John Lasekan, Yong Choe, Svyatoslav Dvoretskiy, Amy Devitt, Sue Zhang, Amy Mackey, Karyn Wulf, Rachael Buck, Christine Steele, Michelle Johnson and Geraldine Baggs
Publish Date: July 2022

Abstract: Five of the most abundant human milk oligosaccharides (HMOs) in human milk are 2'-fucosyllactose (2'-FL), 3-fucosyllactose (3-FL), lacto-N-tetraose (LNT), 3'-sialyllactose (3'- SL) and 6'-sialyllactose (6'-SL). This randomized, double-blind, controlled parallel feeding trial evaluated growth in healthy term infants fed a control milk-based formula (CF; n = 129), experimental milk-based formula (EF; n = 130) containing five HMOs (5.75 g/L; 2'-FL, 3-FL, LNT, 3'-SL and 6'-SL) or human milk (HM; n = 104). Results showed no significant differences (all $p \geq 0.337$, protocol evaluable cohort) were observed among the three groups for weight gain per day from 14 to 119 days (D) of age, irrespective of COVID-19 or combined non-COVID-19 and COVID-19 periods. There were no differences ($p \geq 0.05$) among the three groups for gains in weight and length from D14 to D119. Compared to the CF group, the EF group had more stools that were soft, frequent and yellow and were similar to the HM group. Serious and non-serious adverse events were not different among groups, but more CF-fed infants were seen by health care professionals for illness from study entry to D56 ($p = 0.044$) and D84 ($p = 0.028$) compared to EF-fed infants. The study demonstrated that the EF containing five HMOs supported normal growth, gastrointestinal (GI) tolerance and safe use in healthy term infants.

https://pubmed.ncbi.nlm.nih.gov/35807803/