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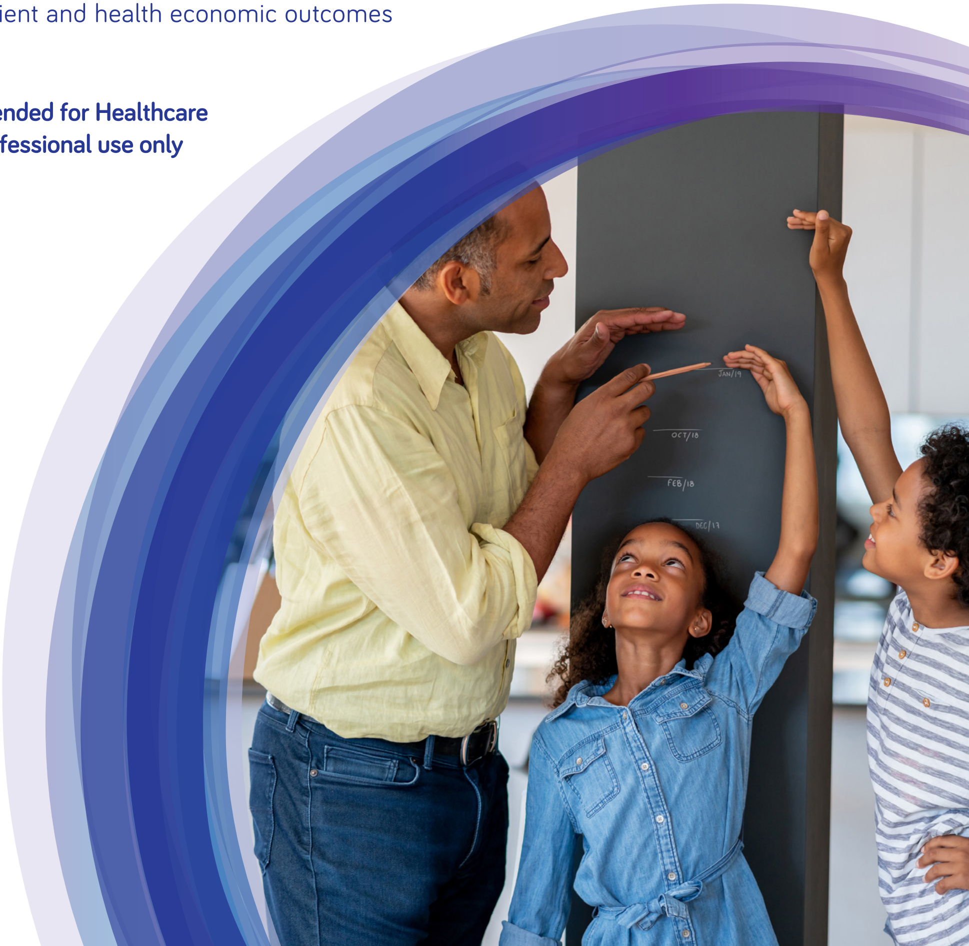

EFFECT OF ORAL NUTRITIONAL SUPPLEMENTS ON CLINICAL OUTCOMES IN CHILDREN WITH FALTERING GROWTH: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Presented at Nutrition and Growth 2022

Introduction:

Oral nutritional supplements (ONS) are used in the management of paediatric faltering growth (FG). The systematic review and meta-analysis aims to summarise the available evidence regarding ONS use in children with, or at risk of, FG.

Method:

A systematic search (up to Nov 2021) identified 10 randomised controlled trials (RCT) comparing changes in a range of nutritional and clinical outcomes amongst children with, or at risk of, FG (n=1116; weighted mean age 5y (range 2.7-10.4y); 59% male) receiving ONS (with or without nutritional counselling) compared to control (nutritional counselling, usual care, placebo).

Results:

ONS use (contribution to intake 412kcal/d, 16.3g/d protein; duration 116 days (weighted means)) was associated with significantly greater gains in weight (mean difference (MD) 0.396kg, 95% CI 0.357 – 0.435, $p < 0.0001$; 4 RCT), height (MD 0.297cm, 95% CI 0.025 – 0.570, $p < 0.0001$; 3 RCT) and total nutritional intake (MD 52.831kcal/d, 95% CI 28.887-76.776, $p < 0.0000$; 3 RCT) with no reduction in food intake. Mean compliance to prescribed dose was 98% (94-100%; 3 RCT). Heterogeneous reporting of clinical outcomes limited the ability to draw further conclusions, although the available data suggests ONS use may be associated with a reduced incidence of infections (3 RCT).

Conclusion:

This systematic review provides evidence to support the use of ONS in the clinical management of children with, or at risk, of FG from various aetiologies including acute and chronic health conditions. Further research to explore effects of ONS on a wider range of clinical outcomes is warranted.

A SURVEY OF THE USE OF BOLUS TUBE FEEDING IN PAEDIATRIC PATIENTS RECEIVING HOME ENTERAL TUBE FEEDING IN THE UK

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Presented at ESPGHAN 2018. Published in Journal of Pediatric Gastroenterology and Nutrition (2018), Vol. 66, Suppl 2: p1045 (Abridged)

Introduction:

Anecdotal evidence suggests bolus feeding is common in paediatric patients receiving home enteral tube feeding (HETF), yet there is limited information on practice. A preliminary survey in UK paediatric HETF patients was conducted to: i) estimate the number of paediatric HETF patients on bolus tube feeding regimens and; ii) characterise these patients and their regimens.

Method:

A cross-sectional survey of paediatric HETF patients receiving bolus tube feeding was undertaken across 9 UK HETF services (Apr-Aug 2017). Dietitians estimated the number of paediatric bolus fed patients from their total caseload, and for a subset of these completed a standardized questionnaire, including demographics (age, gender, medical diagnoses) and tube feeding regimen details (duration, tube type, reasons, daily feed regimen), using dietetic notes (n=155).

Results:

Bolus fed patients represented 60% (n=382/635) of paediatric HETF patients, which may equate to ~9,600 paediatric bolus tube fed patients in the UK. The survey cohort (n=155/635) had a mean age of 8y (SD 5y, range 1-16y), 57% were male and all lived at home. The patient group was diverse, with diagnoses of cerebral palsy (27%) and developmental delay (22%), and half (50%) required full assistance. Most patients were long term tube fed (mean 5y) via gastrostomy (92%) mainly due to dysphagia (62%). The decision to bolus tube feed was typically led by healthcare professionals (65%) to mimic family mealtimes (32%), top up oral diet (19%) or fit a care schedule (9%). The majority (96%) started on a bolus regimen at initiation of tube feeding, and 81% were expected to continue a lifelong bolus regimen. Many patients were tube fed exclusively via bolus (64%) and for the remainder (36%), bolus feeding met 56% of their energy requirements. Commercial tube feeds were most used to bolus (60%). Most patients (70%) were fully or partially bolus fed via pump (mean volume 198ml (SD 71); duration 56min (SD 33)), with 25% via plunger (mean volume 172ml (SD 115); duration 20min (SD 18)) and 15% via gravity (mean volume 163ml (SD 75); duration 16min (SD 5)).

Conclusion:

This is the first survey characterising bolus tube fed paediatric HETF patients in the UK, showing that bolus tube feeding is commonly used primarily to mimic mealtimes or top up oral diet, as also seen in adult HETF patients[1]. Patients typically received tube feed boluses via pump. Further exploration of the effect of different bolus tube feeding practices on paediatric patient outcomes is needed to enable recommendations for clinical practice to be made.

References:

1. Simons, et al. Clinical Nutrition ESPEN. 2017;22:122

A THIRD OF PAEDIATRIC HOME ENTERALLY TUBE FED PATIENTS RECEIVE LOW ENERGY FEEDING REGIMENS: RESULTS OF A UK SURVEY

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Presented at ESPGHAN 2018. Published in Journal of Pediatric Gastroenterology and Nutrition (2018), Vol. 66, Suppl 2: p923. (Abridged)

Introduction:

Around 16,000 paediatric patients receive home enteral tube feeding (HETF) in the UK. The use of low energy tube feeding regimens (LETFR), in these patients is common; however there is currently limited guidance[1] and little published literature. A survey of paediatric HETF patients was undertaken to: i) estimate the percentage of paediatric HETF patients receiving a LETFR and; ii) characterise these patients and their tube feeding regimens.

Method:

In a cross-sectional survey, Dietitians from 9 UK HETF services (n=700) provided: i) an estimate of the percentage of paediatric patients on a LETFR as a sole source of nutrition and; ii) for a subset of patients on a LETFR (n=103, 55% male, age 8y (SD4.6, range 1–17y) a standardised questionnaire on patient demographics and feeding regimen details was completed. Estimated energy requirements (EAR) were calculated using SACN EAR[2] for the less active.

Results:

Dietitians estimated 28% (n=196/700) of their paediatric HETF population were receiving a LETFR. The most common primary diagnosis was neurological impairment (n=103). Patients were predominantly PEG fed (71%) due to an unsafe swallow (75%). Mean weight was 25.4kg (SD12.1, range 7-57kg), mean height 109.0cm (SD22.6, range 64-167cm)); 53% of the group had a weight <25th centile and 76% a height <25th centile. Overall the group were receiving 54% of the EAR/day(2); 1-3y 319-900kcal, 4-6y 360-1050kcal, 7-10y 434-1500kcal, 11-14y 467-1365kcal, 15-17y 500-1740kcal. Most (85%) were on a LETFR due to low energy needs, either due to being small for their age (26%), or another reason (74%), such as inactivity or mechanical ventilation. A small proportion (15%) were on a LETFR due to poor feed tolerance. Of those with low energy needs, 32% were on bespoke regimens using multiple feeds. For most patients (56%) the Dietitian reported difficulty in meeting the patient's complete nutritional needs with the LETFR.

Conclusion:

This is the first survey to characterise the paediatric LETFR patients in the UK, demonstrating the high prevalence of use of LETFR (up to 30%) and complexity of managing this patient population with currently available feeds. Further research is required to assess the energy requirements of such patients in order to make recommendations for their optimal dietetic management.

References:

1. ESPGHAN Guidelines for the Evaluation and Treatment of Gastrointestinal and Nutritional Complications in Children With Neurological Impairment. 2017

2. Dietary Reference Values for Energy. Scientific Advisory Committee on Nutrition. 2011