Acceptability and tolerance study of a high protein semi-elemental feed containing PHGG fibre

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BACKGROUND

The incidence of tube feeding is increasing globally (1) with 30 - 60% of patients on tube feeds reporting symptoms of diarrhoea or gastrointestinal (GI) disturbance (2). Current practice in the UK involves trialling either semi-elemental, peptide-based feeds or polymeric fibre feeds to alleviate discomfort and promote tolerance (3). Semi-elemental peptide-based feeds are growing in popularity and used in an increasingly varied population group due to their beneficial outcomes (4). Equally polymeric fibre feeds have been shown to improve GI function (5). Partially hydrolysed guar gum (PHGG) is a 100% soluble dietary fibre (6), its fermentation results in short chain fatty acids (7) which exert various positive functions on colonic function including increased levels of Bifidobacteria and Lactobacillus (8). This acceptability study investigates the effect of a combined semi-elemental, peptide-based, high protein and fibre containing feed (Peptamen HN PHGG®) on patient reported outcomes.

RESEARCH AIMS

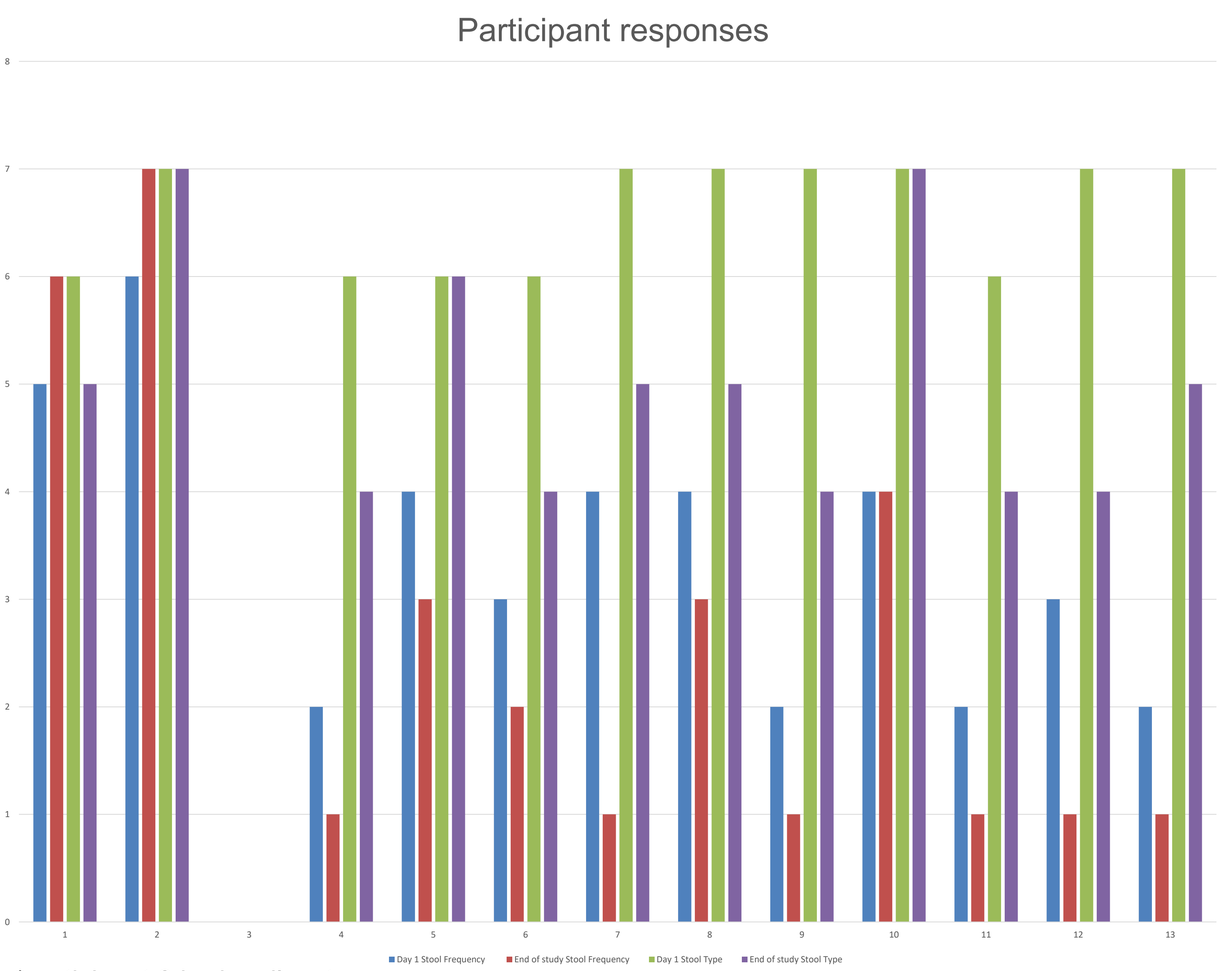
To evaluate the acceptability of an adult enteral high protein semi-elemental feed containing PHGG fibre on gastrointestinal tolerance and compliance.

METHOD

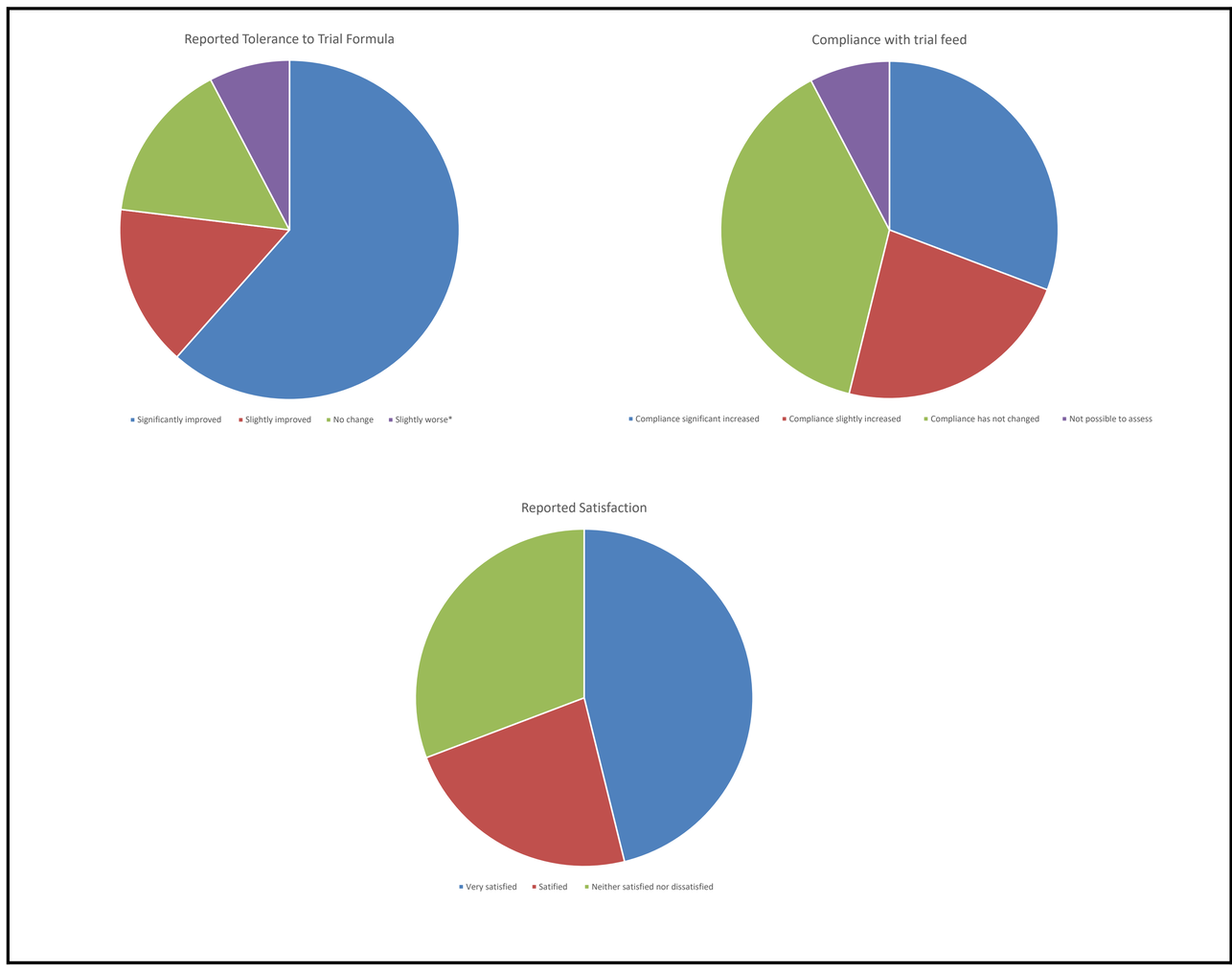
A prospective, single arm multi-centre study was carried out to assess GI tolerance and compliance to a new formula Peptamen HN PHGG®. Participants were under the care of a Dietitian and recruited from 2 NHS settings. Participants were adults who were being tube fed, receiving > 60% of their estimated requirements enterally, experiencing GI discomfort (diarrhoea, constipation, excessive wind or nausea) and able to consent. All were given Peptamen HN PHGG® for a minimum of 7 days with a target of 14 days to best assess tolerance and compliance. Patients were weaned onto a maximum volume of 1500mls Peptamen HN PHGG® over 3 days. Demographic and medical data was obtained. GI tolerance was recorded daily during the trial period, stools were described using the Bristol Stool Chart and symptoms recorded using a 4 point likert scale. Compliance was measured by verification of the volume taken versus the volume prescribed.

RESULTS

21 participants (30 - 88 years), identified by Dietitians as meeting the study inclusion criteria, were consented and enrolled, 13 participants had completed the trial at the time of writing. The range of primary diagnosis included oesophageal cancer, GI tract surgery, pancreatitis, aspergilloma, Ehler Danlos & myasthenia gravis. 4 participants were fed into the stomach and 9 into the jejunum. All patients began the trial due to diarrhoea. At the start of the study 92% of patients (n=12) experienced either a type 6 or 7 stool and 1 patient had an ileostomy reporting diarrhoea. At the end of the study 77% of patients (n=10) reported either a type 4 or 5 stool with only 3 patients (23%) still reporting a type 6 or 7 stool. The average stool frequency decreased from 2.9 to 2.3 times daily. 77% of participants (n=10) reported their tolerance to have improved upon starting the study formula. 92% of participants (n=12) were able to tolerate the prescribed volume of Peptamen HN PHGG® with 54% of participants (n=7) able to tolerate a higher volume of feed compared to their previous feed.



*participant 3 had an ileostomy



CONCLUSIONS

Tube feed tolerance remains a problem for many and to date Dietitians have needed to choose between a semi-elemental, peptide-based feed *or* a fibre feed when addressing these concerns. This study shows Peptamen HN PHGG® was well tolerated by the majority of participants with reports of a decrease in undesirable GI symptoms and beneficial changes in stool frequency and type as well as increased compliance and a high level of satisfaction.

CASE STUDY

Participant number 1

A 62 year-old female with bowel cancer and liver + lung metastases presented with 21% weight loss, neutropenic sepsis, vomiting and diarrhoea type 6-7 stools x 5-6 times overnight 10 days following palliative chemotherapy. She had experience from previous hospital admissions of nutrition support with whole protein enteral feeds and oral sip feeds but was unable to tolerate these due to worsening symptoms.

It was agreed to trial peptide enteral feed with added fibre with the aim of minimising nutritional losses, meet nutritional requirements, support mucosal healing and optimise her treatment pathway. Over the following days her bowel habit improved and by day 14 she had type 4-5 stools. Her quality of life improved and she was able to enjoy activities such as going to the theatre and dining out.

The patient transitioned onto a high protein semi-elemental feed to which they added a fibre supplement separately once the trial period elapsed. 6 weeks later she was able to complete another 2 cycles of palliative chemotherapy as her bowel function was normalised and her weight stable.

This case highlights the critical role of tailored nutritional support in the management of a cancer patient undergoing palliative chemotherapy. Despite significant weight loss and severe gastrointestinal symptoms, targeted nutritional intervention using a specialist peptide feed with added fibre helped stabilize the patient's condition, allowing for the continuation of palliative treatment and an improved quality of life.

Participant number 3

A patient with Ehlers-Danlos complicated by gastroparesis . Presented with mild diarrhoea, severe abdominal pain, moderate gas bloating and nausea. They reported improved stoma output and nausea after commencing the trial feed but worsening gas bloating.

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