Parenteral Nutrition for Enteral Feeding Intolerance – a case series: Who are we treating?

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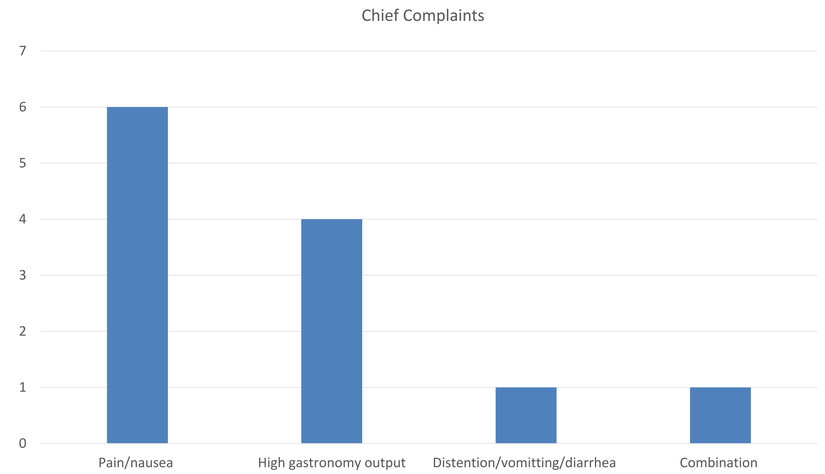
Objective

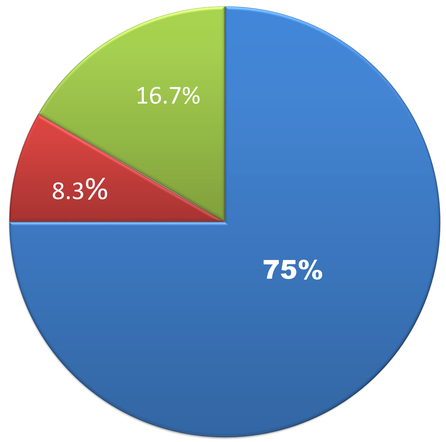
To determine characteristics of patients on parenteral nutrition (PN) in referred to the Neurointestinal and Motility (NIM) program.

Introduction / Methods

- Parenteral nutrition is a commonly used treatment in patients with intestinal failure; however, its use for patients with functional GI disorders has not been well studied.[1]
- Inclusion criteria: NIM patients requiring PN for enteral feeding intolerance from 2018-2022 (n=12).
- We retrospectively analyzed patient demographics, diagnoses, age at start of therapy, duration of PN, tunneled line complications, volume of enteral nutrition (EN), and symptoms precluding EN tolerance.
- We recorded body mass index (BMI) or weight for length (wt/lt) z-scores for patients 0-20 years old, and BMI in patients >20 years old to assess nutritional outcomes. Growth was assessed and analyzed as appropriate for age using WHO 0-24 month and CDC 2-20 growth charts. Malnutrition criteria: 0-20 years with BMI/weight for length z-score <-1. Patient's greater than 20 years weight loss >7.5% in 3 months.

Results





Diagnosis	# of pts on TPN (%)
Functional GI disorder	9 (75%)
Pseudo-obstruction	1 (8.3%)
ACTG2 Mutation	2 (16.7%)

- All 12 patients were female ages 9.6 ± standard deviation. 3/12 patients remained dependent on PN, 8/12 a combination of PN and EN, and 1/12 transitioned off PN.
- Most patients (9/12) held a diagnosis of a functional GI disorder; the remaining 3 patients held a diagnosis of pseudo-obstruction with 2/3 demonstrating an ACTG2 mutation.
- There were 53 total emergency room admissions due to line complications.
- For the patients unable to advance EN: six reported pain/nausea as their chief complaint and four were unable to advance due to increased gastrostomy output. One could not advance feeds due to abdominal distention, vomiting, diarrhea. One could not advance due to a combination of complaints.
- Anthropometric data reflected that five patients were malnourished, with 100% improving their malnutrition status after PN. Seven patients started PN without a malnutrition diagnosis.

Conclusions

In a NIM program in a tertiary center, functional GI symptoms were the most common reason for initiating PN. While malnourished patients improved with PN, the majority of patients had normal growth parameters at the start of PN. These findings warrant further assessment of co-morbidities including restrictive eating/ARFID, visceral hyperalgesia, and psychosocial considerations such as anxiety to better determine potential mechanisms for feeding intolerance. This underscores the critical need for an interdisciplinary approach to these complex patients.

References

1. Krasaelap A, Kovacic K, Goday PS. Nutrition Management in Pediatric Gastrointestinal Motility Disorders. *Nutr Clin Pract. 2020 Apr*;35(2):265-272. doi: 10.1002/ncp.10319. Epub 2019 Jul 18. PMID: 31321821.

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