

BACKGROUND

- Enteral nutrition provides nutrition support for patients with a functional gastrointestinal (GI) tract who are unable to meet nutrition goals by mouth
- Peptide-based enteral tube feeding (ETF) formulas are designed for malabsorption, impaired GI function, or enteral feeding intolerance,¹ and have shown improved tolerance compared with standard polymeric formulas^{2,3}
- There is a growing body of evidence on improved GI tolerance with peptide-based ETF as well as formulas containing real food ingredients.^{3,4} Evidence on plant-based peptide ETF also containing fruit and vegetable ingredients is scarce

OBJECTIVES

- We assessed clinical outcomes related to GI intolerance in children receiving a peptide- and plant-based enteral formula containing a variety of fruit and vegetable ingredients in post-acute care

Table 1: Patient Characteristics and Common Comorbidities (N=91)

	N (%)
Age	
1–3 years	28 (31%)
4–8 years	47 (52%)
9–13 years	16 (18%)
Gender	
Male	46 (51%)
Female	45 (49%)
Region	
Midwest	34 (37%)
West	8 (9%)
South	23 (25%)
Northeast	26 (29%)
Comorbidities	
Congenital Malformations	66 (73%)
Developmental Delays	55 (60%)
GI Conditions	52 (57%)
PCI Weighted Score ≥4	76 (84%)

Abbreviations: GI, gastrointestinal; PCI, pediatric comorbidity index.

References

1. Elfadil OM, Shah RN, Hurt RT, et al. Peptide-based formula: Clinical applications and benefits. *Nutr Clin Pract.* 2023 Apr;38(2):318-28.
 2. LaVallee C, Seelam P, Balakrishnan S, et al. Real-World Evidence of Treatment, Tolerance, Healthcare Utilization, and Costs Among Postacute Care Adult Patients Receiving Enteral Peptide-Based Diets in the United States. *JPEN J Parenter Enteral Nutr.* 2021 Nov;45(8):1729-35.

METHODS

- A retrospective analysis of de-identified data was performed using nationally representative US claims data from the Decision Resources Group Real World Evidence Data Repository, linking medical claims, prescription claims, and electronic health records between Jan 2020 and Dec 2022
- Post-acute pediatric patients aged 1–13 years prescribed a peptide- and plant-based (hydrolyzed pea protein) formula with fruit and vegetable ingredients (Compleat® Pediatric Peptide 1.5 [PPF], Nestlé HealthCare Nutrition, US) were included
- Demographic, comorbidities and clinical characteristics were captured. Results are presented as mean (standard deviation [SD]) or N (%)
- GI intolerance symptoms were recorded at pre- and post-index periods. The index date was defined as the date of hospital discharge, the pre-index period was defined as 6 months prior to the index date and post-index periods as 28, 84 and 168 days after the index date
- Outcomes at pre-index and post-index periods were compared using the Chi-square test

RESULTS

- 91 patients were included; the mean age was 5.5 (SD 3.0) years, with 52% aged 4–8 years and 51% males; All US regions were represented, with the largest share of patients from the Midwest (37%) (**Table 1**)
- Pre-index, 98% of patients had ≥1 comorbidity, with a mean (SD) pediatric comorbidity index (PCI) score of 7.4 (3.5). The majority of patients (84%) had a PCI weighted score ≥4 (**Table 1**)
- At 6 months pre-index, 56% of patients experienced intolerance symptoms (**Figure 1**). Significantly fewer patients receiving PPF experienced any GI intolerance symptoms at 28, 84 and 168 days post-index (p<0.001) (**Table 2 & Figure 1**)

Table 2: GI Intolerance Among Post-Acute Care Children Receiving a Peptide- and Plant-Based Formula

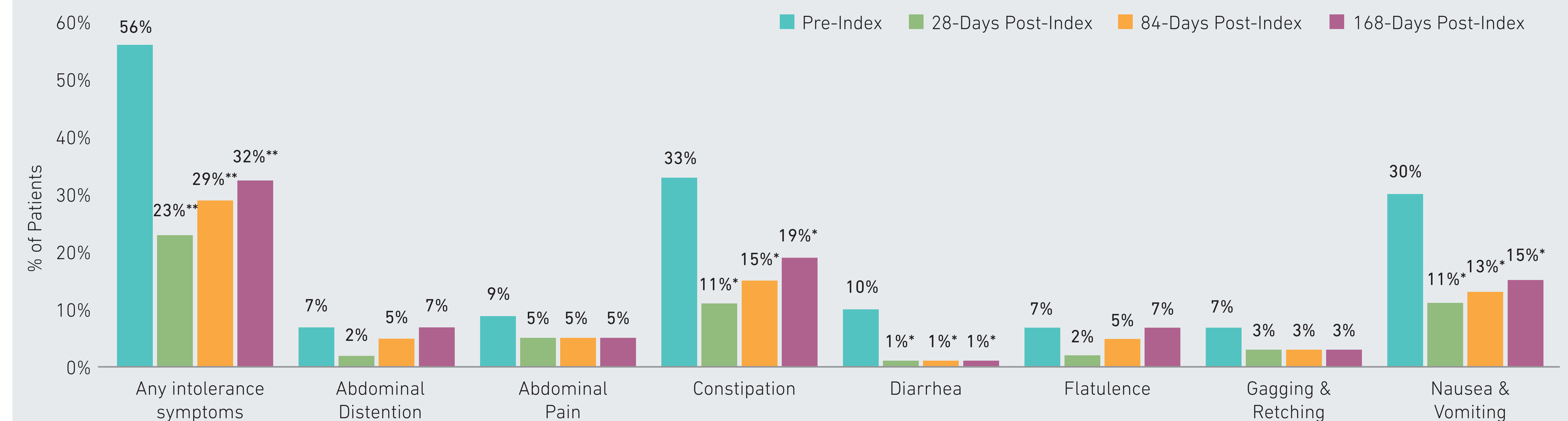
GI Intolerance Symptoms	Pre-Index		28 Days Post-Index		p-Value†	84 Days Post-Index		p-Value†	168 Days Post-Index		p-Value†
	Patients		Patients			Patients			Patients		
	N	%	N	%	N	%	N	%	N	%	
Any Intolerance Symptoms	51	56%	21	23%	<0.001	26	29%	<0.001	29	32%	<0.001
Constipation (%)	30	33%	10	11%	<0.001	14	15%	0.006	17	19%	0.028
Diarrhea (%)	9	10%	1	1%	0.009	1	1%	0.009	1	1%	0.009
Nausea & Vomiting (%)	27	30%	10	11%	0.002	12	13%	0.007	14	15%	0.021

† Significant differences vs pre-index are shown in bold. Chi-square test (pre- vs post-index); alpha=0.05 level of significance.

Abbreviation: GI, gastrointestinal.

Significantly fewer children experienced any GI intolerance symptoms with a peptide and plant-based formula with fruit and vegetable ingredients

Figure 1: Proportion of Patients Who Experienced Specific GI Intolerance Symptoms Post-Index (Hospital Discharge)



* Chi-square test (pre- vs post-index); alpha=0.05 level of significance.
 ** p<0.001 vs pre-index. Chi-square test (pre- vs post-index); alpha=0.05 level of significance.
Abbreviation: GI, gastrointestinal.

- Significant reductions in individual GI intolerance symptoms were observed at all time points for (**Table 2 & Figure 2**):
 - Constipation
 - Diarrhea
 - Nausea and vomiting

CONCLUSIONS

- Children fed a peptide- and plant-based enteral formula containing fruit and vegetable ingredients in a post-acute care setting showed significant reductions in GI intolerance symptoms up to 168 days post-hospital discharge
- Improved GI tolerance supports the use of PPF in children who would benefit from peptide-based formulas while also realizing the benefits of fruit and vegetable ingredients

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