Enhanced Gastrointestinal Tolerance in Post-Acute Care Adults Receiving a Plant-Based Peptide Enteral Formula: A Retrospective Analysis

Pamela Cekola, RDN[1]; Amarsinh Desai, PhD, MS, B.Pharm, D.Pharm[2]; Pradeep Kumar, MBA[3]; Sayan Mondal, B.E, PGDM[3]; Yashashree Vijay Kadam, MSc[3]; Abby Klosterbuer, PhD, RDN[1]; Krysmaru Araujo Torres, MD[1]

[1]Medical Affairs, Nestlé Health Science, New Jersey, US; [2]Market Access, Nestlé Health Science, New Jersey, US; [3]Clarivate Data Analytics & Insights, Bangalore, India

BACKGROUND

- Enteral nutrition (EN) is the standard of care for patients with a functional gastrointestinal tract (GI) who cannot meet nutrition needs orally.[1]
- For patients with intolerance to standard, polymeric EN, peptide-based EN containing hydrolyzed protein, specifically designed to enhance digestion and absorption, may be indicated.[1-3]
- There exists a growing body of evidence supporting improved GI tolerance with either peptide-based EN[2,4] or EN containing fruit and vegetable ingredients.[5,6]
- However, there is a dearth of evidence on plant-based peptide EN also containing fruit and vegetable ingredients.

OBJECTIVE

- Examine the clinical outcomes, specifically GI tolerance, in adults in the post-acute care setting receiving a plant-based peptide EN formula containing fruit and vegetable ingredients.

METHODS

- Retrospective study of de-identified, nationally representative US claims data from the Decision Resources Group Real World Evidence Data Repository between January 2020 – December 2022.
- This repository covers 98% of US health plans and links medical and prescription claims and electronic health records to provide longitudinal patient-level data for >300 million patients.
- Inclusion criteria:
  - Adults ≥14 years in post-acute care setting.
  - Prescribed a plant-based peptide (hydrolyzed pea protein) EN formula containing fruit and vegetable ingredients (Compleat® Peptide 1.5, Nestlé HealthCare Nutrition, US; [PPF]) as sole-source nutrition for ≥5 days.
- Exclusion criteria:
  - Parenteral nutrition,
  - Palliative care or end of life care.
- Data collected:
  - Patient characteristics, medications, GI intolerance symptoms.
- Study definitions:
  - Index date: date of hospital discharge,
  - Pre-index period: 6 months prior to index date,
  - Post-index periods: the last record in the study period at 1, 3 and 6 months (28-, 84- and 168-days, respectively) after hospital discharge.
- Results were presented as mean (SD) or N(%).
- GI intolerance outcomes at pre- and post-index periods were compared using Chi-square test.

Significant reductions in **GI intolerance symptoms** were observed in adults receiving **plant-based peptide EN formula containing fruit and vegetable ingredients**

Table 1. Patient Characteristics (N=82)

	N (%)
Age (years)	
14-18	6 (7)
19-30	16 (20)
30-50	19 (23)
51-70	29 (35)
>70	12 (15)
Female	46 (56)
Region	
Midwest	21 (26)
West	23 (28)
South	24 (29)
Northeast	14 (17)
Comorbidities	
Cancer	32 (39)
Chronic pulmonary disease	24 (29)
Paraplegia and hemiplegia	20 (24)
Mild liver disease	20 (24)
Charlson Comorbidity Index Weighted Score ≥3	42 (56)

Table 2: GI intolerance among post-acute adults receiving a plant-based peptide EN formula (N=82)

GI intolerance symptoms	Pre-Index	Post-Index					
	N (%)	N (%)	p value†	N (%)	p value†	N (%)	p value†
		1-month		3-months		6-months	
Any intolerance symptoms	65 (79)	31 (38)	**<0.001**	37 (45)	**<0.001**	38 (46)	**<0.001**
3 or more intolerance symptoms	30 (46)	5 (16)	**<0.001**	10 (27)	**<0.001**	16 (42)	**0.015**
Abdominal distention	12 (15)	3 (4)	**0.015**	7 (9)	0.222	8 (10)	0.34
Abdominal pain	44 (54)	17 (21)	**<0.001**	23 (28)	**<0.001**	24 (29)	**0.002**
Constipation	32 (39)	7 (9)	**<0.001**	9 (11)	**<0.001**	11 (13)	**<0.001**
Diarrhea	19 (23)	2 (2)	**<0.001**	4 (5)	**<0.001**	7 (9)	**0.01**
Flatulence	12 (15)	3 (4)	**0.015**	7 (9)	0.222	8 (10)	0.34
Gagging & retching	8 (10)	0 (0)	**0.004**	1 (1)	**0.016**	2 (2)	**0.05**
Nausea & vomiting	49 (60)	16 (20)	**<0.001**	21 (26)	**<0.001**	26 (32)	**<0.001**

Abbreviation: GI, gastrointestinal.

†Chi-square test (pre- vs post-discharge); alpha=0.05 level of significance. P values ≤0.05 are bolded.

RESULTS

PATIENT CHARACTERISTICS (TABLE 1)

- 82 adults included (56% female; mean age 49 [SD±20.5 years]) from all US regions.
- 75 (91%) patients had at least one pre-index comorbidities.
- Overall mean (SD) Charlson Comorbidity Index (CCI) weighted score was 7.2 (4.6); 56% of patients with comorbidities had a CCI ≥3.
- Most patients (71%) had commercial payer coverage, 4% Medicaid and 26% identified as other payer coverage.

MEDICATIONS

- Most common concomitant medications prescribed pre-index were CNS agents (59%), GI drugs (39%) and anti-infective agents (36%).

GI INTOLERANCE SYMPTOMS (TABLE 2)

- After initiating PPF and compared to pre-index:
  - Significantly fewer patients experienced any GI intolerance symptoms at all post-index time points (all p<0.001).
  - Significantly fewer patients experience 3 or more GI intolerance symptoms at all post-index time points (all p≤0.05).
  - Significant reductions observed in individual GI symptoms such as abdominal pain, constipation, diarrhea, gagging & retching and nausea & vomiting at all post-index times (all p≤0.05).

CONCLUSIONS

- Use of a plant-based peptide EN formula containing fruit and vegetable ingredients was associated with significant reductions in GI intolerance symptoms up to 6 months post hospital discharge.
- These improvements support PPF as a well-tolerated formula in adults requiring enteral nutrition support in a post acute-care setting.

REFERENCES

[1] Gramlich L et al. *Nutrients*. 2018 Aug 4;10(8).
[2] Mundi MS et al. *Nutr Clin Pract* 2020 Jun;35(3):487-94.
[3] de Brito-Ashurst I et al. *Nutrients*. 2021 Jul 10;13(7).
[4] LaValle C et al. *JPEN*. 2021 Nov;45(8):1729-35.
[5] Cohen S et al. ASPEN Annual Meeting, *JPEN* 2020;44(3).
[6] Steel C et al. *Nutr Clin Pract*. 2022 Aug 29.

Presented at ASPEN Nutrition Science & Practice Conference, March 2–5, 2024, Tampa, Florida. Sponsored by Nestlé HealthCare Nutrition, Inc.