


BACKGROUND

- Enteral tube feeding (ETF) is a life-sustaining therapy in patients with compromised volitional intake.¹
- Specialty ETF are formulated with ingredients to support different aspects of clinical care, aiding in the medical management of various disease conditions.
- Up to 75% of critically ill patients on ETF experience gastrointestinal (GI) intolerance, compromising nutrient delivery and adequacy of feeding.^{2,3}
- 100% whey peptide-based ETF (WPBD) are nutritionally-complete formulas wherein the protein has undergone hydrolyzation for more efficient absorption and medium chain triglycerides have been added for enhanced digestibility and tolerance.

OBJECTIVES

- The primary objective of this observational, retrospective study is to identify characteristics of hospitalized patients receiving WPBD and standard intact protein formulas (SETF), using real world evidence (RWE) data.

METHODS

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- Premier Healthcare Database, a hospital administrative database, was utilized in the study.
 - Adult patients (≥ 18 years) receiving WPBD or SETF through ETF for any condition during acute hospitalization in the United States from October 1, 2015 through October 31, 2019.
 - Patients who received WPBD or SETF for 3 consecutive days or 3 of 5 consecutive days were identified from the database, based on text string searches in billing descriptions from the hospital charge master file.
 - Patients with more than one ETF product billed during same inpatient stay were excluded.
 - The differences in the distribution of characteristics and outcomes between WPBD and SETF patients were tested using Wilcoxon Rank Sum tests (for continuous variables), and Chi-square tests (for dichotomous or categorical variables).
 - Gastrointestinal (GI) intolerance was defined as presence of one or more of the following symptoms using ICD-10-CM discharge diagnosis codes: abdominal distention, abdominal pain, constipation, diarrhea, nausea and vomiting.

References:

- Mundi M, et al. NCP 2020;35:487-494.
- Blaser A, et al. ACTA Anaesthesiologica Scandinavica 2014;58:914-922.
- Gungabissoon U, et al. JPEN 2015;39:441-448.
- Heyland D, et al. Crit Care Med 2021;49(1):49-59.

RESULTS

- A total of 28,476 patients were included, obtaining data from patients treated across 79 hospitals, wherein 27 hospitals had both types of ETF formulas, 50 had only SETF and 2 WPBD exclusively.
- Overall, gender distribution was 46% female and median age was 68 (25th, 75th percentiles: 57, 77) years, with patients receiving WPBD significantly younger [64 (53, 74) years] than those receiving SETF [68 (58, 78) years] $p < 0.0001$.
- 3M™ All Patient Refined™ Diagnosis Related Group (APR-DRG) severity of illness (SOI) and risk of mortality (ROM) were significantly different between groups ($p < 0.0001$), with ROM classified as extreme for 58% of patients receiving WPBD and 39% for patients receiving SETF.
- Clinical characteristics including mechanical ventilation, critical illness myopathy, pneumonia, septicemia, liver disease, and obesity were statistically significantly higher in the WPBD group.
- Patients receiving WPBD spent more days in a critical or intensive care unit (ICU) [median = 9 (6, 15) days] than those receiving SETF [7 (3, 12) days] $p < 0.0001$.

Table 1. Demographics

Characteristic	Peptamen® WPBD (N=3883)	SETF (N=24593)	p-value
Age, years, %			$< .0001$
18-34	7.6%	4.5%	
35-49	12.2%	8.6%	
50-64	31.0%	27.1%	
65-79	35.2%	38.6%	
80+	14.1%	21.2%	
Sex, %			0.24
Female	44.9%	46.2%	
Male	55.1%	53.8%	
Race, %			$< .0001$
White	83.3%	77.5%	
Black	8.4%	14.7%	
Other	8.3%	7.8%	

Figure 1. APR-DRG Severity of Illness

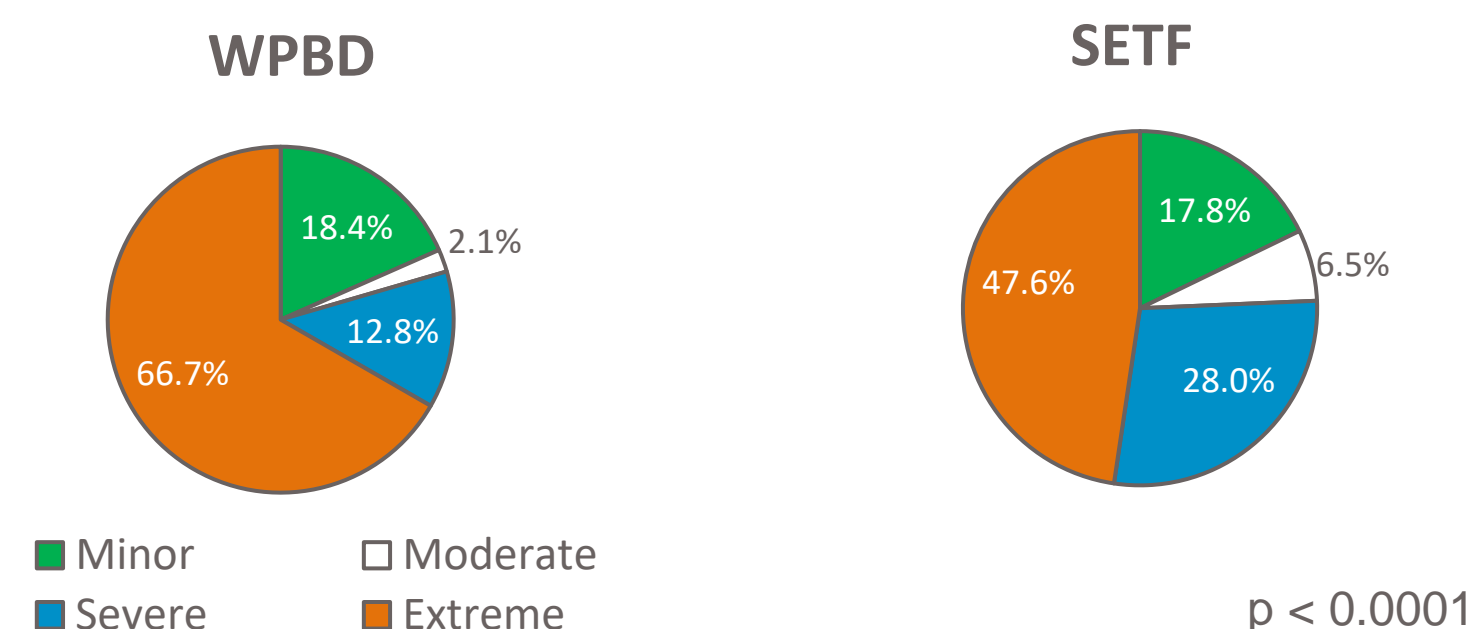


Figure 2. Clinical Characteristics and Comorbidities by ETF Formula Group

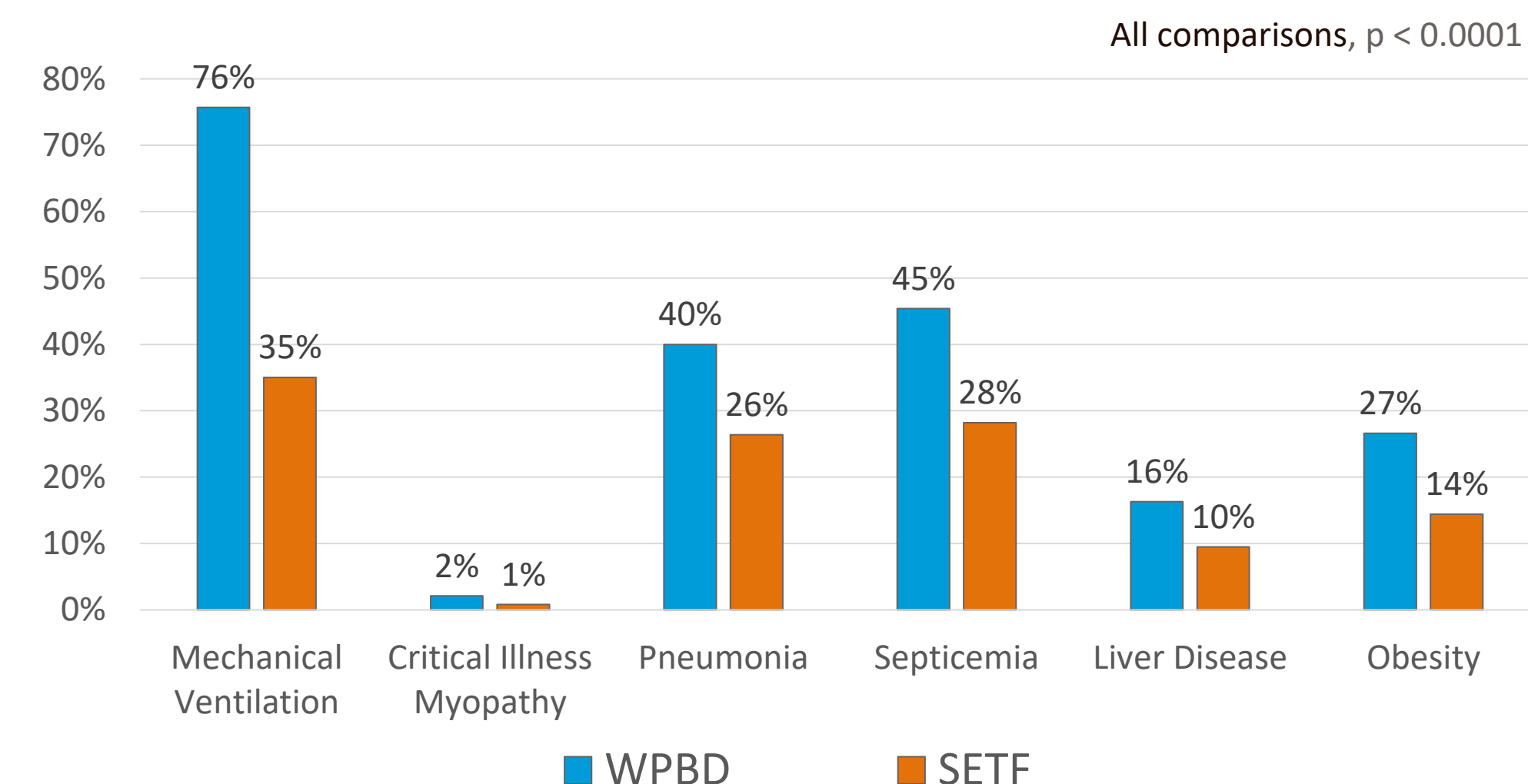


Table 2. ETF, ICU, and Tolerance

Characteristic	WPBD	SETF	p-value
Days of ETF, Median (25th, 75th)	5 (4, 9)	5 (4, 9)	0.364
Admitted to ICU, %	83.5%	54.2%	< 0.0001
Nausea & Vomiting, %	1.4%	2.0%	0.012
Abdominal Pain, %	0.6%	1.0%	0.015
GI Intolerance, %	14.2%	17.3%	< 0.0001

CONCLUSION

- This retrospective descriptive analysis shows that when WPBD is used, it is used more often in critically ill patients with higher SOI and ROM.
- Higher ETF tolerance, with less nausea, vomiting and abdominal pain was observed with the use of WPBD.
- Historically, tolerance of ETF is associated with more adequate nutrient provision.⁴ Initial use of WPBD in those patients with the highest severity of illness may lead to more adequate nutrient provision and decreased incidence of GI intolerance.