**BACKGROUND**

- Enteral nutrition (EN) is crucial for the treatment of individuals with functional gastrointestinal (GI) tracts who are unable to consume adequate nutrients orally.
- EN is often initiated in the hospital setting and may continue after discharge, as part of post-acute care. The prevalence of home enteral nutrition (HEN) as part of post-acute care in the US has increased in recent decades.
- Healthcare professionals, patients, and caregivers are increasingly requesting tube feeding formulas with easily recognized ingredients and containing more real food.
- Commercial blended tube feeding (CBTF) formulas containing a variety of real foods are often preferred for patients who present with challenges tolerating standard tube feeding (STD-TF) formulas, including plant-based standard formulas that do not contain real food.

**OBJECTIVES**

- The purpose of this study was to describe patient characteristics and clinical outcomes among pediatric patients who received CBTF compared to those receiving a plant-based STD-TF formula in post-acute care.

**METHODS**

- Retrospective observational study using a nationally representative US claims data obtained from the Decision Resources Group Real World Evidence Data Repository, which covers 98% of US health plans, including medical and pharmacy claims.
- Patients age 1-14 years, with a prescription of either CBTF (Compleat Pediatric Organic Blends, Nestlé HealthCare Nutrition, US) or a plant-based STD-TF (Kate Farms Pediatric Standard 1.2, Kate Farms, Inc., US) as sole-source of nutrition for ≥7 days in post-acute care were included.
- Patients treated for any medical condition between January 2018 and December 2020 were included.
- The index date was defined as the date of hospital discharge.
- Patient characteristics, concomitant medications use, GI intolerance symptoms, health care resource utilization (HCRU), and cost of care were recorded within one year before discharge and up to 84 days post-discharge.
- Demographics, clinical characteristics, and concomitant medications were analyzed using descriptive statistics (median, mean, and standard deviations) and the appropriate statistical test (chi-square, t-test, or non-parametric test) at the alpha=0.05 level of significance to compare the two groups.
- Outcomes were measured in the post-index period based on the last record in the study period at 84 days post-discharge. GI intolerance symptoms were compared between CBTF and STD-TF group at 84 days post-index using chi-square test.
- All tests were 2-sided, alpha=0.05 level of significance.

**RESULTS**

**Significant reductions in GI intolerance symptoms were observed among children receiving real food tube feeding compared to a plant-based standard tube feeding formula**

**CONCLUSION**

- The use of CBTF containing a variety of real foods was well tolerated in pediatric patients compared to STD-TF formulas.
- Significant reductions in GI intolerance symptoms were observed among children receiving CBTF compared to STD-TF formulas, demonstrating clinical benefits of real food tube feeding formulas in post-acute care patients.

**REFERENCES**


**RESULTS – PATIENT CHARACTERISTICS (TABLE 1)**

- Study included 1064 children (42% female; mean [standard deviation] age 5.05 [3.33] years) from all US regions.
- The most common diagnoses pre-index were diseases of the digestive system (83%), respiratory diseases (80%), and congenital conditions (72%).
- Overall, mean (SD) Charlson Comorbidity Index score was 1.7 (2.1) among patients with comorbidities.
- The most common comorbidities were chronic pulmonary disease (30%), paraplegia and hemiplegia (27%) and cerebrovascular disease (7%).
- No significant difference in concomitant medications use was observed for GI drugs (anti-diarrheals, anti-emetics, laxatives and others) and anti-inflammatory agents between the groups.

**RESULTS – GI INTOLERANCE SYMPTOMS (TABLE 2)**

- Significantly fewer patients experienced any GI intolerance symptoms at 84 days post-index while receiving the CBTF formula (25%) than STD-TF (49%; p<0.001).
- This reduction in GI intolerance was maintained for specific intolerance symptoms including constipation (p<0.001), nausea and vomiting (p<0.001), abdominal pain (p<0.001), diarrhea (p<0.001), flatulence (p=0.005) and abdominal distension (p=0.007) at 84 days post-index.

**Table 1: Patient Characteristics (N=1064)**

<table>
<thead>
<tr>
<th>Age, Mean (SD)†</th>
<th>N=469, n (%)</th>
<th>N=595, n (%)</th>
<th>p-value‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 years</td>
<td>185 (39%)</td>
<td>269 (45%)</td>
<td>0.059</td>
</tr>
<tr>
<td>2-4 years</td>
<td>195 (42%)</td>
<td>221 (37%)</td>
<td>0.141</td>
</tr>
<tr>
<td>5-7 years</td>
<td>189 (19%)</td>
<td>105 (18%)</td>
<td>0.577</td>
</tr>
<tr>
<td>8-10 years</td>
<td>207 (44%)</td>
<td>238 (40%)</td>
<td>0.174</td>
</tr>
</tbody>
</table>

**Table 2: GI Intolerance Symptoms at 84 Days Post-Index**

<table>
<thead>
<tr>
<th>Any intolerance symptoms</th>
<th>CBTF N=469, n (%)</th>
<th>STD-TF N=595, n (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constipation</td>
<td>68 (14%)</td>
<td>190 (32%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Nausea &amp; vomiting</td>
<td>47 (10%)</td>
<td>129 (22%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>9 (2%)</td>
<td>51 (9%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>13 (3%)</td>
<td>57 (10%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Flatulence</td>
<td>9 (2%)</td>
<td>31 (5%)</td>
<td>0.005</td>
</tr>
<tr>
<td>≥3 intolerance symptoms</td>
<td>11 (9%)</td>
<td>58 (20%)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**Abbreviations:** CBTF, commercial blended tube feeding formula; STD-TF, standard tube feeding formula

**Comorbidities**

- Chronic pulmonary disease
- Paraplegia and hemiplegia
- Cerebrovascular disease
- Charlson Comorbidity Index
  
  † Assessed during the year prior to hospital discharge.