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## Introduction

- With studies noting significant benefit to enteral nutrition in patients who are unable to meet their nutritional needs through oral intake, more than 400,000 Americans are estimated to receive home enteral nutrition (HEN).
- Unfortunately, a significant number of patients are unable to tolerate standard polymeric formulas, leading to significant GI distress, poor quality of life, and inability to meet protein and caloric goals.
- Compromised calorie delivery is associated with poor patient outcomes and increased mortality.
- Recent studies have shown that the use of peptide based (PBD) formulas are better tolerated than standard polymeric formulas and may be ideal in intolerant patients.

## Methods

- Retrospective chart review of patients followed by Mayo HEN Service from May 1<sup>st</sup> 2017 to Jan 1<sup>st</sup> 2018 was conducted.
- Primary objective was to evaluate and describe demographic characteristics of patients receiving PBD in the HEN setting.
- Secondary objectives included assessment of tolerance of PBD, change in gastrointestinal symptoms, % of goal calories delivered, % of goal protein delivered, and impact on utilization of health resources.

## Results

- During study period, 98 patients utilized PBD, with 55 patients being started directly on PBD and 43 switched to PBD from standard formula due to intolerance.
- Most common indication for PBD initiation was fat malabsorption (29%) followed by pancreatic insufficiency (24%) and post-operative chyle leak (20%).
- In patients placed on PBD due to intolerance, the overall number of GI symptoms were significantly reduced (Table 2).
- Health care resources including number of phone calls to HEN service, Emergency Room visits, and provider visits were reduced after transition to PBD (Table 3).

**Table 1: Demographic Characteristics**

| Group Characteristics                        | Started on PBD n=55 | Switched to PBD n=43 |
|--|---------------------|----------------------|
| Age (years)                                  | 55 ± 17             | 50 ± 18              |
| Number of female patients n(%)               | 26 (47)             | 27 (63)              |
| Weight at initiation of TF (kg)              | 72 ± 19             | 66 ± 21.2            |
| BMI at initiation of TF (kg/m <sup>2</sup> ) | 25 ± 5.5            | 23.1 ± 6.45          |
| <b>Primary diagnosis n(%)</b>                |                     |                      |
| Pancreatic adenocarcinoma                    | 12 (22)             | 10 (23)              |
| Pancreatitis                                 | 12 (22)             | 3 (7)                |
| GI surgery and malabsorption                 | 6 (11)              | 3 (7)                |
| GI cancer                                    | 9 (16)              | 9 (21)               |
| <b>End weight (kg)</b>                       | 68.7 ± 17           | 63 ± 18              |
| <b>End BMI (kg/m<sup>2</sup>)</b>            | 24 ± 6              | 22.4 ± 5.4           |

**Table 2: Tolerability of PBD**

| Characteristic                | On Standard Formula | On PBD       | p-value |
|-------------------------------|---------------------|--------------|---------|
| Nausea/vomiting               | 17 (40%)            | 10 (23%)     | 0.02    |
| Diarrhea                      | 20 (47%)            | 10 (23%)     | 0.01    |
| Abdominal pain                | 10 (23%)            | 2 (5%)       | 0.01    |
| Distention                    | 4 (9%)              | 1 (2%)       | 0.17    |
| No symptoms                   | 9 (21%)             | 20 (47%)     | <0.01   |
| Gas/bloating                  | 0 (0%)              | 1 (2%)       | 1.00    |
| Calories tolerated/day (kcal) | 1495 ± 388          | 1574 ± 489   | 0.3     |
| Goal calories provided (%)    | 97.2 ± 27.0         | 102.6 ± 31.7 | 0.33    |
| Goal Protein provided (%)     | 105.2 ± 34.1        | 110.1 ± 35.4 | 0.45    |

**Table 3:**

| Characteristic  | On Standard Formula | On PBD     | p-value |
|-----------------|---------------------|------------|---------|
| Phone Calls     | 1.8 ± 1.65          | 1.1 ± 1.0  | 0.005   |
| ER visits       | 0.3 ± 0.6           | 0.09 ± 0.3 | 0.02    |
| Provider visits | 1.3 ± 1.3           | 0.3 ± 0.5  | <0.05   |

## Discussion

- PBD were well tolerated in HEN population and utilized directly in patients at risk for malabsorption such as those with pancreatic disease or GI surgery.
- PBD was also effectively utilized to reduce GI symptoms and increase % goal calories and % goal protein provided in patients who were intolerant to standard polymeric formulas.
- PBD also resulted in a reduction in the use of health care resources.

## Conclusion

- Overall, PBD were well tolerated in out-patient setting in HEN patients and can be an option in patients who are intolerant to standard polymeric formulas leading to decrease in utilization of health care resources.
- Large prospective clinical trials are recommended to delineate cost-effectiveness of this approach

## References

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