Real world indications for PN: a five-year experience in a Dublin Acute Teaching Hospital.

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Introduction

Parenteral nutrition (PN) is the intravenous aseptic delivery of sufficient nutrients including protein, carbohydrate, lipids and essential fatty acids, electrolytes, vitamins, trace elements and water via a dedicated central venous line, where sufficient nutrition via the alimentary tract is not possible.

Aims / Objectives

To evaluate the indications for PN, considering duration of PN, in Beaumont Hospital, over the period January 2018 to December 2023, excluding 2020.

Methodology

A quantitative retrospective audit of all patients who were commenced on PN in Beaumont Hospital between January 2018 and December 2023, was undertaken. Data from 2020 was excluded, as incomplete data was collected during the COVID pandemic. Data was retrieved from a bespoke computerised PN audit system developed by Mr. Gavin McEvoy (Information Technology Department) and maintained by the Department of Nutrition and Dietetics on behalf of Beaumont Hospital's Parenteral Nutrition Committee.

Results/Findings

- Total number of PN episodes over the 5 years: n=1323.
- Range: 220-331 PN episodes per year with highest incidence in 2021 – see Figure 1.
- Ileus and major GI surgery were the most common indications [1] over the audit period - See Figure 2.
- Indication 'outside usual criteria' (dietetic opinion) was relatively consistent, with average of 7.9% – see Figure 3.
- Duration of PN: average of 11 days – see Figure 4.
- Number of patients on PN for ≤ 4 days: average of 22% - see Figure 5.

Conclusions

1. Ileus, major GI surgery with anastomosis, and bowel obstruction were the three most common indications for PN, together comprising approximately >40% of episodes.
2. The year emerging from the COVID pandemic (2021) showed the highest use of PN, with the highest incidence of ileus, perforation and failed enteral feeding as indications for PN, possibly reflecting a sicker cohort of patients.
3. Indications 'outside usual criteria' were consistently 5-10% of total. This suggests that some PN episodes may have been avoidable, reinforced by the number of patients on PN for ≤ 4 days.
4. More effective use of enteral feeding may reduce the need for PN in some cases.

Recommendations

- Multidisciplinary Team involvement in decision-making regarding route of nutrition support, where feasible, will help promote efficient and effective use of resources.
- Results support the need for a more formal multidisciplinary nutrition support team to include an educational role.

Results / Findings (*data not available for 2020*)

Figure 1: PN episodes per year

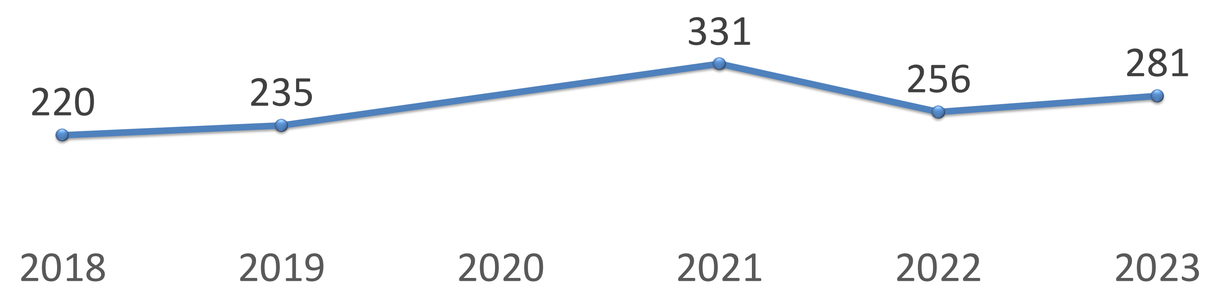


Figure 2: Top indications for PN (as percentage of total in each year)

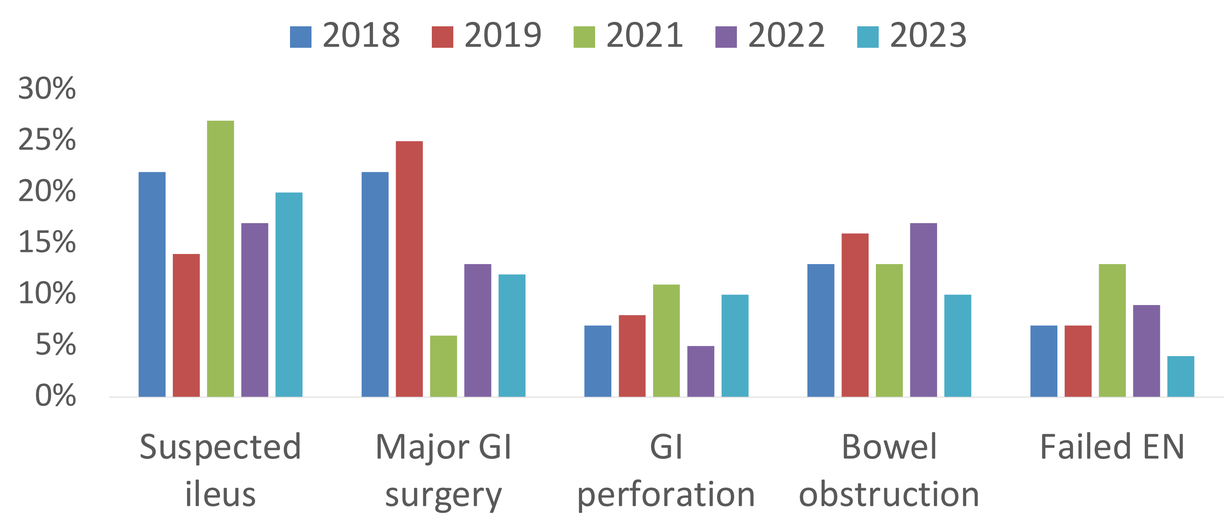


Figure 3: PN episodes with indications outside usual criteria (%)

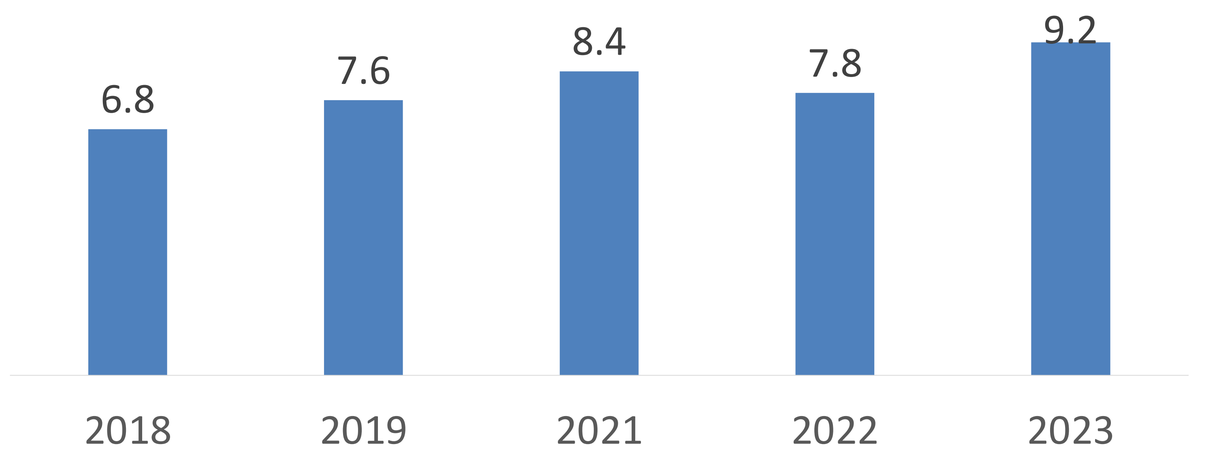


Figure 4: Average duration of PN per year (in days)

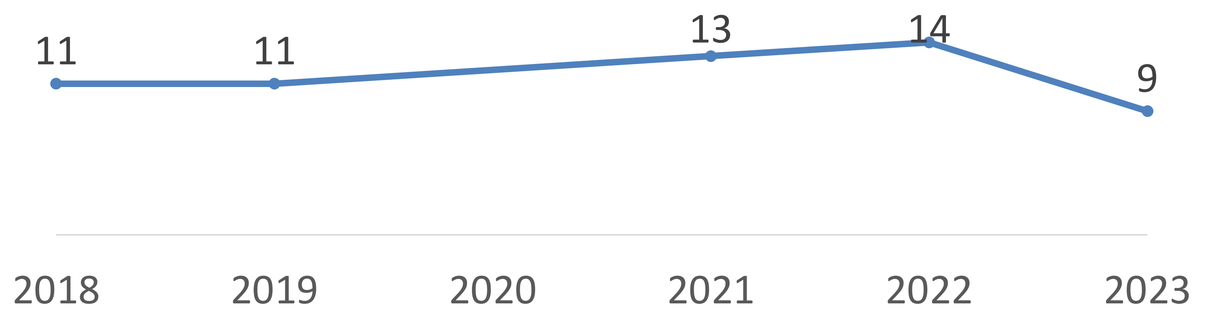
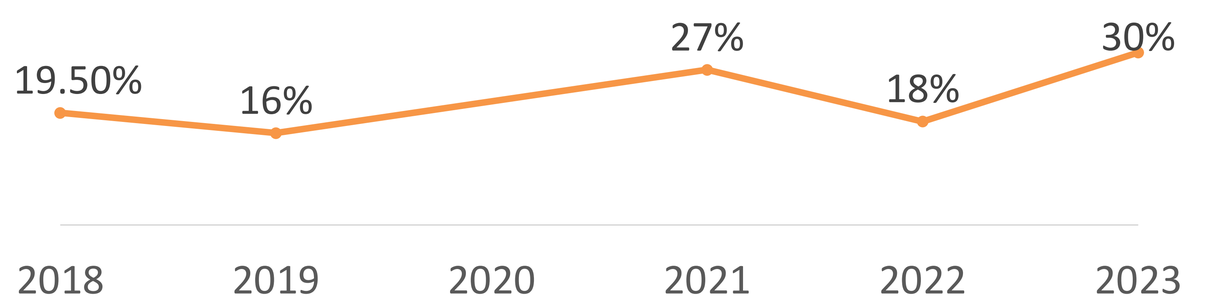


Figure 5: Percentage of PN episodes lasting ≤ 4 days



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