**Introduction**

Long-term total parenteral nutrition (TPN) patients rely on nutrition therapy to maintain their nutritional well-being and pursue satisfying lives. However, their care is generally not standardized, and there are wide variations in patient management.

**Methods**

One national home infusion provider evaluated a sample of ultra long-term patients as defined by a >18-month length of therapy (LOT) to gain greater insight into the influence of patient demographics and care management on clinical outcomes. Manual medical record audits were performed on 25 patient records from one service center located in the Northeastern U.S. Length of therapy, gender, age, insurer, diagnosis, managing physician specialty, current TPN prescription, number and type of access devices, and affiliated nursing agencies were evaluated.

**Results**

**Length of Therapy**

A total of 363 TPN days were noted, with a mean LOT of 1,220 days (3.34 years) and a range of LOT of 542–3,890 days.

**Gender**

Sixty-four percent of patients were female, 36% male.

**Age**

The mean age was 36.6 years. The range was 5–84 years. Twenty-four percent of the population was <16 years old.

**Physician Management**

Of the physicians who managed this population, 84% had nutrition support experience, with 44% having nutrition support certification.

**Diagnoses**

Twelve unique diagnoses were noted that applied to one of seven broader diagnostic categories.

**Access Devices by Type**

The total number of access devices noted for this population throughout their total LOT was 101, with a range of 1–15 per patient, for a mean of 4.08 access devices per patient, and one catheter per 302 TPN therapy days. Four different catheter types were noted for this population.

**Access Device by Number of Lumens**

Of the patients reviewed, 64% had a double lumen (D/L) access device, and 36% had a single lumen (S/L).

**PN Prescription**

Of the 25 patients whose records were evaluated, seven (28%) initiated TPN at home rather than at the hospital. The mean TPN prescription contained 1,939 ml and was comprised of 64.78 g amino acids and 220.18 g dextrose, infused six days per week. There was a mean of 7.12 dextrose prescription changes and 24% electrolyte prescription changes.

**Lab Monitoring Frequency**

Lab monitoring frequency varied and was primarily dependent upon patient acuity at the time of chart review.

**Conclusion**

Ultra long-term TPN recipients have complex medical issues and diverse etiologies for TPN use. Compared to the same national home infusion provider’s normative population of all HPN recipients, the ultra long-term population’s mean age was younger, driven by the larger 1- to 16-year-old age group. More females received long-term HPN compared to the normative population. Compared to the normative population, this sample of ultra long-term patients had a slightly lower utilization of commercial insurance and Medicare and a slightly higher utilization of Medicaid, likely related to the younger age demographic. Diagnoses consistent with chronic intestinal syndrome, malabsorption, Crohn’s disease and dysmotility being the primary diagnoses that resulted in long-term HPN dependency. Unlike the normative population, this sample had a larger percentage of patients with nutrition support experience, with 44% having nutrition support certification. Nearly a third of this population initiated their most recent HPN prescription in the home rather than in the hospital. Patients had a mean number of six infusions per week with multiple prescription changes over the course of their therapy to adjust electrolytes, dextrose and amino acid levels to meet their needs as their clinical status changed. All patients in this population took some oral nutrition and 16% of the population received both tube feeding and HPN. PICC lines were most often utilized and nearly two-thirds of the population had a double lumen catheter. Despite the higher utilization of D/L catheters in this population, the rate of catheter complications that resulted in hospitalization with D/L catheters was only slightly higher than that of S/L catheters. More than a third of this population were independent and did not require regular nursing intervention at home, but rather, received follow-up care through their physician and clinic. Long-term patients who were independent and had no regularly scheduled at-home nursing care experienced a slightly lower rate of hospitalization related to catheter complications compared to those with nursing agencies.

Evaluating a larger sample of ultra long-term TPN recipients from a greater geographic area may be helpful to delineate the relationship between the ordering physician’s expertise in nutrition support management and patient outcomes, the relationship between nursing visits and hospitalizations, and the relationship between catheter type and number of lumens and patient acuity so that standardized guidelines may be developed to reduce therapy-related complications.