

Identifying safe patients for home initiated parenteral nutrition: An app-based screening tool

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Background

Home initiated parenteral nutrition (HIPN) is a growing method to start patients on parenteral nutrition (PN).¹ HIPN can minimize healthcare costs and improve quality of life by avoiding hospitalization.² However, not all patients are a candidate for HIPN. Determining suitable HIPN patients consists of several factors highlighted in the American Society for Parenteral and Enteral Nutrition (ASPEN) Consensus Recommendations.³ According to ASPEN, establishing organizational policies and procedures to determine safe and clinically appropriate HIPN patients includes assessing the patient's overall medical, clinical, and psychosocial status.

Purpose

The dietitian-led, app-based HIPN screening tool pilot program aims to identify safe and clinically appropriate patients for HIPN with the goal of improving patient safety and adherence to HIPN best practice recommendations.

Methods

Patients referred to this home infusion organization for HIPN from November 1, 2023, to September 30, 2024, were selected for the pilot program. The Registered Dietitian (RD) completed the "Home Initiated PN Dietitian Screening" (HIPDS), a screening tool in an app-based platform. The 28-question HIPDS was adapted from the ASPEN Consensus Recommendations and Newton AF, DeLegge MH 2007 Home Initiation of Parenteral Nutrition.^{3,2} A team of dietitians completed implementation and cover 4 categories (clinical, patient/caregiver education and agreement, environment, and RD confirmation/approval) to help determine if the patient is an HIPN candidate. The screening was completed by collecting data from clinical documents and performing a telephonic assessment with the patient or caregiver. Exclusion criteria included patients less than 18 years old, patients deemed appropriate for HIPN but did not initiate PN at home, and patients who did not have a HIPDS completed before the first dose of PN.

Disclosures

No financial support was provided by industry for this pilot program.

References

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Figure 1: App-based Screening Tool

Back Home Initiated PN Dietitian Scre...

11. Does patient and or caregiver communicate understanding and agreement to the following processes of home start PN:

	Yes	No
Central access with weekly line care	<input type="radio"/>	<input type="radio"/>
Initial PN cycle infused over 18-24 hours	<input type="radio"/>	<input type="radio"/>
Weekly lab draws for monitoring	<input type="radio"/>	<input type="radio"/>
Patient and or caregiver agree to PN teach and to follow given PN instructions as indicated	<input type="radio"/>	<input type="radio"/>

12. Identify if the following home environment needs are met:

	Yes	No
Telephone	<input type="radio"/>	<input type="radio"/>
Electricity with working outlets	<input type="radio"/>	<input type="radio"/>
Sanitary water	<input type="radio"/>	<input type="radio"/>
Working refrigerator with ability to store prescribed # of PN bags	<input type="radio"/>	<input type="radio"/>
Safe, clean environment to store administer PN	<input type="radio"/>	<input type="radio"/>

Table 1: Baseline Characteristics

Baseline Characteristics (N=30)		
	Patients Initiated on PN (N= 23)	Patients Deemed Not Appropriate for PN (N= 7)
Sex		
Female	22 (96%)	5 (71%)
Male	1 (4%)	2 (29%)
Median Age		
Years	53	61
Classification of Primary PN Indication		
Motility Disorder	8 (35%)	1 (14%)
Malabsorptive Disorder	5 (22%)	0
Anatomical Condition Other	3 (13%)	0
Intestinal Disease	3 (13%)	0
Nutrition Disorder	2 (9%)	1 (14%)
Anatomical Condition Neoplasm	2 (9%)	5 (71%)

Results

- 36 patients reviewed by an RD for HIPN
- 30 patients met inclusion criteria and HIPDS completed
- 6 patients excluded (3 due to initiating PN in a hospital and 3 due to no HIPDS completed before first dose)
- 23 patients deemed appropriate for HIPN
- 7 patients not a candidate for the following reasons: uncorrectable electrolytes (57%), appropriate for enteral nutrition (14%), patient refused PN, (14%), and psychosocial discrepancy (14%).

Of the 23 patients that had HIPN:

- No patients required hospitalization related to clinical management of PN
- No patients had electrolytes that were uncorrectable
- No patients had an adverse drug reaction
- 18 patients (78%) reached goal PN within 30 days of therapy initiation
- 21 patients (91%) received intravenous thiamine with PN initiation
- 20 patients (86%) had labs drawn within 24-48 hours post-initiation

Discussion

The HIPDS helped identify clinically stable patients for HIPN. The study revealed no patients had uncorrectable electrolytes after HIPN, and only a small number of patients were hospitalized, none related to PN clinical management. This shows a positive correlation between screening with the HIPDS and safe HIPN outcomes. Most patients' PN included intravenous thiamine and had labs drawn 24-48 hours after initiation indicating the HIPDS encouraged adherence to best practice recommendations. Most patients that were deemed inappropriate to initiate PN at home were due to having abnormal electrolytes that would make HIPN unsafe. Completion of the HIPDS increased patients' knowledge of PN and allowed them to make an informed decision on initiating the therapy. Potential limitations of the study include limited sample size and reliance on patient reported information during telephonic assessments. There are limited recent studies on HIPN, and future research in this area is needed.

Conclusions

The use of an app-based screening tool by RDs is effective in identifying safe and clinically appropriate patients for HIPN. All patients in the pilot that received HIPN avoided hospitalizations related to PN management, adverse drug reactions, uncorrectable electrolyte abnormalities, and advanced PN to goal without complications.

Figure 2: Categorization of HIPDS Questions

