

A structured team approach to laboratory monitoring of home PN patients can simplify PN management, significantly decrease monthly laboratory costs, and lead to fewer laboratory draws while improving micronutrient monitoring and preventing deficiencies” Smith et al (2016).

Abstract:

Background: The primary hypothesis of this article is that a team approach in creating a protocolized laboratory monitoring schedule for home parenteral nutrition (PN) patients improves patient safety by decreasing the occurrence of nutrition deficiencies and is cost-effective.

Methods: In this prospective cohort study of home PN patients, each patient followed an established protocol of laboratory monitoring and weekly review by an interdisciplinary team of dietitians, nurses, and physicians. Data collected included anthropometric measurements, laboratory results, deviations from laboratory protocols, laboratory charges, PN shortage information, and means of ameliorating such shortages. Cost-effectiveness analysis was only performed for nonmicronutrient laboratory tests.

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Results: Fifteen children (male, n = 6) with a median age of 59 months (range, 19–216) were included in this study. Primary diagnoses included short bowel syndrome (47%) and intestinal pseudo-obstruction (40%). Patients received PN mixtures from 6 different infusion companies and experienced 60 different shortages in the PN formulation requiring adjustments or substitutions (mean, 4 shortages per patient). All patients had appropriate growth and complete micronutrient monitoring. No patient experienced any clinical symptoms due to shortages. The median number of laboratory draws/patient per month was 2.9 preprotocol compared with 1.14 postprotocol (P = .003). The median per patient per month charges were \$2014 (interquartile range , 1471–2780) preprotocol compared with



\$792 (IQR, 435-1140) postprotocol (P = .002).

Conclusions: A structured team approach to laboratory monitoring of home PN patients can simplify PN management, significantly decrease monthly laboratory costs, and lead to fewer laboratory draws while improving micronutrient monitoring and preventing deficiencies.

Reference:

Smith, A., Feuling, M.B., Larson-Nath, C., Karls, C., Van Hoorn, M., Walia, C.L.S., Leon, C., Danner, E., Opichka, P., Duesing, L., Martinez, A. and Goday, P.S. (2016) Laboratory Monitoring of Children on Home Parenteral Nutrition: A Prospective Study. JPEN. October 11th. .

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