

Adherence to Prescribed Home Parenteral Nutrition Regimens: Objective Assessment Using Real-World Infusion Pump Data

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Introduction

Chronic intestinal failure often requires lifelong parenteral feeding, demanding sustained adherence to complex prescribed regimens. Non-adherence is linked to poor clinical outcomes and increased healthcare resource use¹. Connected infusion pumps that transmit treatment data to a digital platform offer a means of objectively quantifying adherence for therapy adjustment².

Methods

Retrospective study at Beilinson Medical Center. Continuous infusion data from 11 adult HPN patients over 3-6 months, recorded by the Sapphire™ pump and sent via Sapphire™ Connect. Recorded infusions were compared with prescribed regimens across 4 measures: volume, duration, frequency, and scheduling. Assessed with Wilcoxon signed-rank tests against perfect adherence (=1).

Conclusion / Highlights

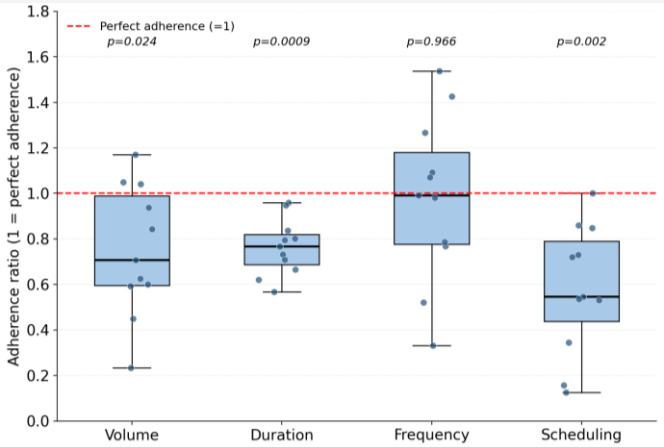
HPN adherence is highly variable with significant under-delivery of volume and duration deviation despite preserved frequency. Objective pump-derived data, presented via the Eitan Insights™ digital platform, enables precise identification of the causes of non-adherence, such as clustering treatments, under-delivering volume, infusing over a different duration than prescribed, supporting targeted clinical interventions.

Adherence assessed by infusion frequency alone appeared near-complete (median 0.99), yet **objective pump data** revealed significant under-delivery across volume, duration, and scheduling measures ($p<0.05$), demonstrating that single-parameter adherence metrics can mask **clinically relevant non-adherence**.



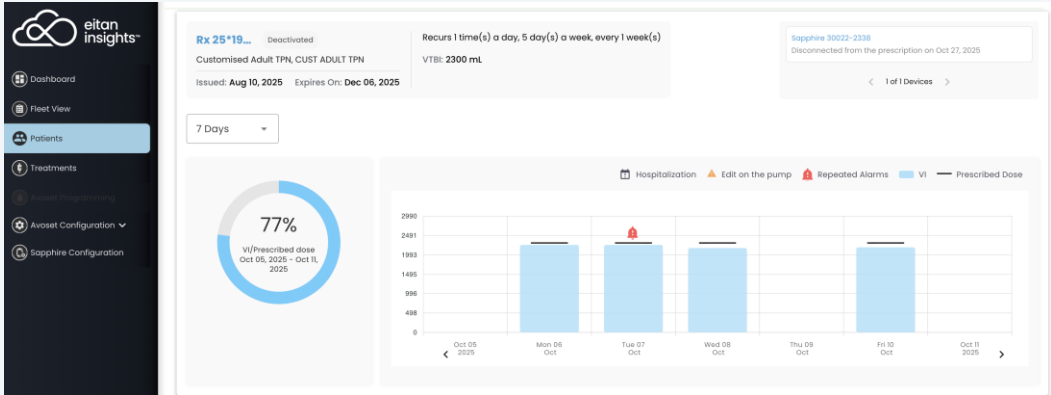
Results

Adherence across 4 measures in HPN patients (n=11)



HPN adherence analyzed from pump event log data; high compliance variability per patient and measurement method

Eitan Insights™ adherence dashboard



One week of treatment data presented in Eitan Insights™, an example of non-adherence due to frequency; missing 2 out of 5 prescribed doses over a week



References

- 1 Perlinski, M., & Sobocki, J. (2025). The impact of home parenteral nutrition on survival and quality of life in patients with intestinal failure and advanced cancer: A comprehensive review. *Nutrients*, 17(5), 905. <https://doi.org/10.3390/nu17050905>
- 2 Hellerman Itzhaki, M., Tamam, N., Lester, A., Harouche, T., Kagan, I., & Singer, P. (2024). Insights from home parenteral nutrition infusion data. *Nutrition*, 120, 112347. <https://doi.org/10.1016/j.nut.2023.112347>

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