

Capsule Summary

Early vs Late Parenteral Nutrition in Patients Undergoing Abdominal Surgery

- Malnutrition after major abdominal surgery ranges from 20% to 70%. (1,2) It is associated with increased morbidity, such as impaired wound healing, hospital-acquired infection, postoperative complications, prolonged hospital stay, and increased mortality. (3,4)
- Some studies have suggested that early supplemental parenteral nutrition in critically ill patients with insufficient enteral nutrition can significantly reduce nosocomial infections and also an association between higher energy delivery and improved clinical outcomes in critically ill patients. (5-8)
- Currently, there is a paucity of large randomized clinical trials on the timing of supplemental parenteral nutrition (SPN) initiation for patients undergoing abdominal surgery.
- A recent study compared early and late parenteral nutrition in patients undergoing abdominal surgery. The study has been summarized below:

Objective: Examining the effect of early supplemental parenteral nutrition (E-SPN) (day 3 after surgery) or late supplemental parenteral nutrition (L-SPN) (day 8) after surgery) on the incidence of nosocomial infections in patients having a high nutritional risk and poor tolerance to EN who were undergoing major abdominal surgery.

Study Design: This was a multicentre randomized clinical trial carried out at 11 tertiary care centres in China. A total of 230 participants undergoing major abdominal surgery with high nutritional risk and poor tolerance to EN ($\leq 30\%$ of energy targets from EN on postoperative day 2, calculated as 25 and 30 kcal/kg of ideal body weight daily for women and men, respectively) and an expected postoperative hospital stay longer than 7 days were randomized to receive E-SPN (starting on day 3 after surgery) or L-SPN (starting on day 8 after surgery).

Primary Endpoint: Incidence of nosocomial infections between postoperative day 3 and hospital discharge

Results:

	E-SPN	L-SPN	Inference
Mean (SD) energy delivery between days 3 and 7	(26.5) [7.4] kcal/kg daily	(15.1) [4.8] kcal/kg daily	Significantly higher mean energy difference in the E-SPN group
Nosocomial Infections	8.7%	18.4%	Significantly lower nosocomial infections in E-SPN group
Mean (SD) number of therapeutic antibiotic days	(6.0) [0.8]	(7.0) [1.1]	Significantly lower number of therapeutic antibiotic days in E-SPN group

No difference between the 2 groups in the mean number of non-infectious complications and a total number of adverse events.

Conclusion:

Results of this study demonstrated that E-SPN was associated with:

- Reduced nosocomial infections in patients undergoing abdominal surgery
- Could be a useful strategy for patients with high nutritional risk and poor tolerance to EN after major abdominal surgery/

The full text can be accessed at <https://jamanetwork.com/journals/jamasurgery/article-abstract/2790269>

References:

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