

Effect of Early Postoperative Enteral Immunonutrition on Wound Healing in Patients Undergoing Surgery for Gastric Cancer

Farreras N, Artigas V, Cardona D, Rius X, Trias M, Gonzalez JA
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Objective To assess the effect of early postoperative enteral immunonutrition (IMPACT® *Immunonutrition for Surgical and Trauma Patients*) on the wound healing process in patients undergoing surgery for gastric cancer.

Methods

This was a prospective, randomized, double-blind trial comparing early postoperative enteral immunonutrition and standard formula. Sixty-six (66) patients with gastric cancer were randomly assigned to receive early postoperative enteral immunonutrition in one of two treatment groups: (A) formula supplemented with arginine, omega-3 fatty acids and ribonucleic acid (IMPACT® Formula) or (B) isocaloric-isonitrogenous control formula. The length of enteral treatment was 7 days. Assessment of the wound healing process included quantification of hydroxyproline deposition in a subcutaneously placed catheter, and the occurrence of surgical wound healing complications. Additional outcome endpoints were overall morbidity and hospital length of stay.

Results

Significantly fewer episodes of surgical wound healing complications were found in patients fed IMPACT® Formula

	IMPACT® vs Control	P=
n = 66	0 vs 8 [26.7%]	0.005

Significantly fewer episodes of infectious complications were found in patients fed IMPACT® Formula

	IMPACT® vs Control	P=
n = 66	2 [6.7%] vs 9 [30%]	0.01

The feeding type was found to be the only significant predictor of the presence of any postoperative complication (OR=2.49 P=0.001).

Significantly higher hydroxyproline levels were found in patients fed IMPACT® Formula

	IMPACT® vs Control	P=
n = 66	59.7 nmol vs 28.0 nmol	0.0018

The authors stated these findings were concordant with available experimental evidence and provide a rational basis to suggest that dietary arginine supplementation contributes to wound healing by increasing collagen synthesis.

Mean length of hospital stay was significantly shorter in the IMPACT® Formula group

	IMPACT® vs Control	P=
n = 66	13 days (11-22) vs 15 days (10-22)	0.02

Conclusion

Early postoperative enteral nutrition with a formula supplemented with arginine, omega-3 fatty acids and ribonucleic acid (IMPACT® Formula) increased hydroxyproline synthesis and significantly decreased surgical wound healing complications in patients undergoing gastrectomy for gastric cancer.

Summary prepared by Nestlé Healthcare Nutrition. The complete study can be accessed online at:
<http://www.ncbi.nlm.nih.gov/pubmed/15681102>