

The Impact of Preoperative Immune Modulating Nutrition on Outcomes in Patients Undergoing Surgery for Gastrointestinal Cancer

Adiamah A, Skořepa P, Weimann A and Lobo DN. *Ann Surg* 2019; 270(2): 247-256.

Objective:

To systematically review the preoperative use of immunonutrition (containing all combinations of arginine, glutamine, n-3 fatty acids and nucleotides) in GI cancer surgery studies measuring at least one clinical outcome.

Methods:

16 randomized controlled trials (n=1387) with either isonitrogenous, isocaloric (IN/IC) controls (6 trials) or no supplementation (10 trials) were meta-analyzed. 6 trials had a mixed GI cancer surgery population, 4 were colorectal, 2 pancreatic, 2 gastric and 1 each liver and esophageal cancer. All trials evaluated the immunonutrition (IM) blend of supplemental arginine, n-3 fatty acids and nucleotides found in IMPACT® formulas.

Results:

Patient	Infectious Complications	Length of Stay (LOS)
IM formulas vs. IN/IC	Odds Ratio (OR) 0.49 (95% CI 0.28, 0.85, p=0.01)	–1.06 days (–2.76, 0.63, p=0.22)
IM formulas vs. no supplementation	OR 0.52 (95% CI 0.35, 0.78, p=0.001)	–2.06 days (–3.07, –1.06, p<0.0001)
IM formulas vs. controls combined (all studies)	OR 0.52 (95% CI 0.38, 0.71, p<0.0001)	–1.57 day (–2.48, –0.66, p=0.0007)

- ✓ A large decrease in risk of infectious complications was shown when IM formula were compared with IN/IC controls, and this demonstrating the value of the immunonutrient blend apart from supplementing calories and protein.
- ✓ Regardless of the control compared, use of this specific IM formulation prior to GI cancer surgery decreased the risk of infectious complications by ~50%.
- ✓ Significant LOS reductions were associated with IM formulas used prior to GI cancer surgery among all studies analyzed, and when controls were unsupplemented.
- ✓ Differences between groups for non-infectious complications and mortality were not found.

Conclusion:

- Preoperative use of IMPACT® formulas is superior to standard oral nutritional supplements in GI cancer surgery patients.
- A minimum of 5 days of preoperative IMPACT® formula, orally or enterally should be part of routine practice in the care of GI cancer surgery patients.

Summary prepared by Nestlé Health Science.

The complete study may be accessed online:

<https://www.ncbi.nlm.nih.gov/pubmed/30817349>