

Effect of Preoperative Oral Immune-enhancing Nutritional Supplement on Patients at High Risk of Infection after Cardiac Surgery: A Randomized Placebo-controlled Trial

*Tepaske R, Velthuis H, Oudemans-van Straaten HM, et al.
The Lancet 2001; 358:696-701.*

Objective

The purpose of this prospective, randomized, double-blind, placebo-controlled study was to compare pre-operative host defense and post-operative outcomes in cardiac patients receiving an oral immune-enhancing nutritional supplement vs. a standard oral supplement prior to surgery.

Methods

All enrolled patients (n=50) were age ≥ 70 years or had an ejection fraction of $\leq 40\%$, or were scheduled for mitral valve replacement.

1) Treatment group- Consumed 1 liter of Oral IMPACT[®] Formula for at least 5 days prior to surgery. After surgery, patients who required tube feeding received IMPACT formula until extubation.

2) Control group- Consumed an isocaloric, isovolemic and isonitrogenous amount of a standard nutritional supplement for at least 5 days prior to surgery. After surgery, patients who required tube feeding also received an isocaloric, isovolemic and isonitrogenous formula until extubation.

Results:

- Patients fed Oral IMPACT Formula had significantly higher preoperative expression of HLA-DR epitopes on monocytes (109%) than those in the control group compared with baseline ($p=0.02$).
- Concentration of IL-6 was significantly lower in the Oral IMPACT Formula group (0.90 pg/L) vs. control group (1.94 pg/L) ($p=0.032$).
- Patients fed Oral IMPACT Formula had a significant reduction in total infectious complications (4 of 23 vs. 12 of 22), ($p=0.01$).
- Patients fed Oral IMPACT Formula had significantly fewer cases of pneumonia ($p<0.05$).

Conclusion:

Investigators concluded preoperative intake of an oral supplement enriched with arginine, omega-3 fatty acids and nucleotides for 5-10 days improved preoperative host defense, reduced the number of postoperative infections, and better preserved renal function in high-risk cardiac patients.

Summary prepared by Nestlé HealthCare Nutrition. For a complete copy of the study, please go to the following site:

http://www.ncbi.nlm.nih.gov/pubmed/11551575?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_Results_Panel.Pubmed_RVDocSum&ordinalpos=3