【要約】

Immunonutrition suppresses acute inflammatory responses through modulation of resolvin E1 in patients undergoing major hepatobiliary resection

肝胆道切除患者に対する免疫栄養療法はレゾルビン E1 を介して急性炎症反応を制御する

千葉大学大学院医学薬学府
先進医療科学専攻 腎器制御外科学
(主任： 宮崎 勝 教授)

宇野 秀彦
Immunonutrition suppresses acute inflammatory responses through modulation of resolvin E1 in patients undergoing major hepatobiliary resection: Results from a randomized controlled study

Hidehiko Uno, MD, Katsunori Furukawa, MD, Daisuke Suzuki, MD, Hiroaki Shimizu, MD, Masayuki Ohtsuka, MD, Atsushi Kato, MD, and Masaru Miyazaki, MD

From the Department of General Surgery, Chiba University Graduate School of Medicine, Chiba, Japan

Correspondence and Reprints: Katsunori Furukawa, MD, Department of General Surgery, Chiba University Graduate School of Medicine, 1-8-1 Inohana, Chuo-ku, Chiba, Chiba 260-0856, Japan. FAX: +81-43-226-2550. Phone: +81-43-226-2103. E-mail: k-furukawa@umin.ac.jp

Disclosure: The authors do not have any potential conflicts of interest to disclose.

Running head: Resolvin E1 in immunonutrition
Structured Abstract

Objective: To investigate the efficacy of preoperative immunonutrition on surgical complications as well as the role of resolvin E1 in inflammatory responses in patients undergoing major hepatobiliary resection.

Summary Background Data: Although several studies have reported the effects of immunonutrition on clinical outcomes, detailed mechanisms of immunonutrition after surgery are still unclear. It was recently reported that resolvin E1, a novel lipid mediator generated from eicosapentaenoic acid (EPA), activates factors that reduce inflammation.

Methods: This was a prospective, randomized controlled trial. Forty patients who underwent major hepatobiliary resection were divided into two groups. Twenty patients received oral supplementation enriched with EPA, arginine, and nucleotides before surgery (group IN). Twenty patients (control group) received no artificial nutrition before surgery (group C).

Results: The rate of infectious complications and severity of complications in group IN was significantly lower (40%) than in group C (75%) (P < 0.05). Immediately after surgery, plasma resolvin E1 levels were significantly higher in group IN than in group C (P < 0.05), and plasma IL-6 levels were significantly lower in group IN than in group C (P < 0.05). Preoperative serum EPA levels correlated with plasma resolvin E1 levels immediately after
surgery. Plasma resolvin E1 levels correlated with plasma IL-6 levels immediately after surgery.

Conclusions: Preoperative immunonutrition reduced inflammatory responses and protected against the aggravation of surgical complications in patients undergoing major hepatobiliary resection. Resolvin E1 may play a key role in the resolution of acute inflammation when immunonutrition is supplemented with EPA. (ClinicalTrials.gov Identifier: NCT01256047)