## 14<sup>th</sup> Food Engineering Conference

November 28-29, 2016 Melbourne, Australia

## Effect of immune-enhancing enteral nutrition enriched with or without beta-glucan on immunomodulation in critically ill patients: A randomized placebo-controlled trial

Minjoo Kim, Young Ju Lee, Hyeon Yeong Ahn, Minkyung Kim and Jong Ho Lee Yonsei University, Korea

We investigated whether high-protein enteral nutrition with immune-modulating nutrients (IMHP) enriched with  $\beta$ -glucan stimulates immune function in critically ill patients. In a randomized double-blind placebo-controlled study, 30 patients consumed one of three types of enteral nutrition: A control or IMHP with and without  $\beta$ -glucan. The IMHP with  $\beta$ -glucan group showed increases in natural killer (NK) cell activities relative to the baseline, and greater increases were observed in NK cell activities relative to the control group after adjusting for age and gender. The IMHP groups with and without  $\beta$ -glucan had greater increases in serum pre-albumin and decreases in high-sensitivity C-reactive protein (hs-CRP) than the control group. The control group had a greater decrease in peripheral blood mononuclear cell (PBMC) interleukin (IL)-12 production than the IMHP with and without  $\beta$ -glucan groups. In all patients, the change ( $\Delta$ ) in hs-CRP was correlated with  $\Delta$  prealbumin and  $\Delta$  PBMC IL-12, which were correlated with  $\Delta$  NK cell activity and  $\Delta$  pre-albumin. This study showed beneficial effects of a combination treatment of  $\beta$ -glucan and IMHP on NK cell activity. Additionally, strong correlations among changes in NK cell activity, PBMC IL-12, and hs-CRP suggested that  $\beta$ -glucan could be an attractive candidate for stimulating protective immunity without enhanced inflammation.

## **Biography**

Minjoo Kim has completed her PhD from Yonsei University. She is currently a Post-doctoral candidate in Research Center for Silver Science, Yonsei University. Her researches are focused on medical nutrition therapy in metabolic diseases, aging, nutrition-related metabolomics, nutriagenetics, etc. She has published more than 25 papers in reputed journals and has registered 3 patents (also, 10 patent applications).

minjookim@yonsei.ac.kr

Notes: