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Effect of supplementation with *Lactobacillus* strains in overweight populations

Miso Kang, Minkyung Kim, Minjoo Kim, Hye Jin Yoo and Jong Ho Lee
Yonsei University, Korea

We aimed to assess whether supplementation with two probiotic strains, *Lactobacillus curvatus* (*L. curvatus*) HY7601 and *Lactobacillus curvatus* (*L. curvatus*) KY1032, can affect metabolic intermediates and cause changes in adiposity. A 12-week double-blind, randomized, placebo-controlled study was carried out on 64 non-diabetic and overweight subjects. They were assigned to consume either the probiotic powder or the same product without the probiotics. To validate the metabolic changes, we conducted plasma metabolic profiling using ultra-performance liquid chromatography and mass spectrometry (UPLC-LTQ/Orbitrap MS). Compared to the placebo group, the probiotic group showed more significant reduction in their body fat percentage (-0.67%, $P=0.018$) and body fat mass (-717g, $P=0.003$) after 12 weeks of treatment. Notably, the levels of octenoylcarnitine (C8:1), tetradecenoylcarnitine (C14:1), decanoylcarnitine (C10) and dodecenoylcarnitine (C12:1) were increased in probiotic group than placebo group. Also, the alterations in the levels of the C8:1, C14:1, C10 and C12:1 acylcarnitines were negatively correlated with changes in body weight, body fat percentage, body fat mass and L1 subcutaneous fat area in the probiotic group. This study showed that probiotic induced weight loss and adiposity reduction in overweight individuals were related to increases in the levels of the medium-chain acylcarnitines.

Biography

Miso Kang is a PhD student working at Yonsei University Clinical Nutrigenetics/Nutrigenomics Laboratory with Jong Ho Lee. She consulted on a variety of projects, involving qualitative and quantitative analysis to achieve acquisitions, restructurings, and strategic realignments with her team. She has published 1 paper in reputed journal.

alth1004@hanmail.net

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