Does probiotic intervention induce the serum global lipid profile change?

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The new global metabolic profiling techniques, like lipidomics as a branch of metabolomics, have made it possible to measure large numbers of different metabolites, and are currently being applied to increase our understanding of the health and disease continuum.

A Finland research group investigated the effect of a three weeks intervention of a probiotic LGG intervention on serum global lipidomics profiles in healthy adults. This will be published on 28 May 2008, in the *World Journal of Gastroenterology*.

The result showed that there were decreases in the levels of lysophosphatidylcholines (LysoGPCho), sphingomyelins (SM) and several glycerophosphatidylcholines (GPCho), and increases in triacylglycerols (TAG) in the probiotic LGG group. These changes may contribute, for example, to the metabolic events behind the beneficial effects of LGG on gut barrier function seen in previous studies.

This study, done in collaboration with research groups of Associate Professor Riitta Korpela and Professor Matej Orešič, was the first to characterise the effect of probiotics on global lipidomics profiles. There were indications that probiotic LGG intervention may lead to changes in global lipidomics profiles reflected in decreased LysoGPCho and SM, mainly decreased GPCho and mainly elevated TAG. In addition, among the inflammatory variables, IL-6 was moderately associated by changes in global lipidomics profiles, while there was only a weak association between the lipidomics profiles and the two other inflammatory

markers, TNF-αand CRP.

The new analytical capacity of lipidomics as a branch of metabolomics can increase our understanding of lipid biology, improve the characterisation of global lipid profiles and result in the identification of previously unknown changes in lipid metabolism.

Probiotics have been mostly studied in the prevention and treatment of different gastrointestinal diseases and allergy, but the action mechanisms of probiotics are poorly understood. Metabolomics may provide powerful tools for identifying new biomarkers behind the clinical effects of probiotic intervention trials and for establishing relationships between molecular profiles and other known data from the same individual.

Source: World Journal of Gastroenterology