

BRIDGING A ROLE OF VITAMIN D AND METABOLOMICS IN DYSLIPIDEMIA

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Abstract

Lack of DNA repair pathway is characterized by an increased susceptibility to metabolic syndrome and cancers. Recently, several studies reported that obese person have a mutation or polymorphism of DNA repair gene in cell signal pathway. Interestingly, 25(OH)D levels of vitamin D are typically lower in obese individuals who are more likely to develop diabetes mellitus and metabolic syndrome. How DNA repair pathway prevents metabolic disease and a regulation of the vitamin D level affects to obesity are still unknown. Our laboratory mainly focuses on finding a new role of vitamin D regarding to metabolic syndrome using a vitamin D knock-out mouse system and clinical human study. In this presentation, we report Korean submariners study in obese group ($\geq 25.0\text{kg/m}^2$) and normal group ($18.5\sim 22.9\text{kg/m}^2$) with an intake of vitamin D supplementation or placebo on a double-blind study. Subjects of each group were fifteen people and sixteen, respectively. The study was to collect and analysis data of Korean submariner's plasma vitamin D levels, metabolic syndrome status, metabolomics. We assessed the plasma vitamin D levels of subjects in collected their blood lipid profiling, dietary record, physical activity and metabolomics data in two group. We hope this study provides some basis evidence of a role of vitamin D on obesity and metabolic syndrome.

Keywords

Vitamin D, Dyslipidemia, Obesity, DNA repair pathway, Metabolomics