치매에서의 장 뇌 상호작용

노 지 훈
울산의대

Gut-brain Interaction in Dementia

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The role of microbiome in dementia and neurodegenerative disorders is becoming increasingly recognized. Many of the pathophysiological changes seen in neurodegenerative diseases such as inflammation, immunological changes and abnormal protein aggregation might be explained with regard to microbial activity. We compared fecal microbiomes in subjects with Alzheimer's disease (AD) with their healthy spouses to see the differences of bacterial compositions among the groups. Along with clinical evaluation and brain MRI and laboratory tests, stools of the subjects have been collected for next generation sequencing (NGS) using 16S rRNA library preparation and MiSeq protocol. AD subjects showed different taxonomic composition at the phylum level. The beta diversity analysis using fast Unifrac analysis demonstrated the groups' unique microbiota compositions. Various indices for the alpha diversity also demonstrated the differences between AD and healthy groups. Preliminary NGS results from AD and healthy subjects showed distinct patterns between the groups. Further investigation with fecal microbiome transplantation in AD mouse models in different age groups demonstrated a relationship between AD pathogenesis and microbiome changes.

Key words: Dementia, Alzheimer's disease, Microbiome, Neurodegeneration

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