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Study of outcome and Apolipoproteins in Dementia (STOP-Dementia)

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Background: Amyloid-β clearance is important for damage prevention in Alzheimer's disease. High-density lipoprotein (HDL) containing apolipoprotein A-I is associated with the pathogenesis of Alzheimer's disease (AD). HDL particle size is modified in the presence of pathological conditions, while the significance of the HDL particle size remains controversial.

Objective: The aim of this study was to investigate the HDL lipoprotein subclasses in mild cognitive impairment (MCI) and AD.

Methods: This cross-sectional study included 20 AD patients, 17 MCI patients, and 17 age-matched controls without cognitive impairment, selected from the database of the Study of Outcome and Apolipoproteins in Dementia (STOP-Dementia) registry. The diagnoses of AD and MCI were performed by expert neurologists according to the Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition criteria. Serum HDL subclasses were measured by electrophoretic separation of lipoproteins using the Lipoprint System. The neutrophil-lymphocyte ratio (NLR), a marker of inflammation, was calculated by dividing the neutrophil count by the lymphocyte count.

Results: Small-sized HDL particle levels in the MCI group were significantly higher than in the control group, although there was no difference in serum HDL-cholesterol levels between MCI and control groups. NLR in the MCI group was higher than in the control group, but this difference was non-significant (P = 0.09). There was no difference in HDL subclasses or NLR between the AD and control groups.

Conclusion: These findings suggest that HDL subclasses might be associated with the development of MCI. This trial was registered with UMIN as 000019992.

Biography

Ryo Ohtani has completed his PhD at the age of 38 years from Kyoto University, Japan. He is the director of National Hospital Organization Kyoto Medical Center, Japan. Currently, he is working as Neurologist in National Hospital Organization Kyoto Medical Center, JAPAN. He has 28 publications that have been cited.

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