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GENDER AND GENOTYPE MODULATION OF THE ASSOCIATION BETWEEN LIPID LEVELS AND DEPRESSIVE SYMPTOMATOLOGY IN COMMUNITY-DWELLING ELDERLY

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Background: Lipids appear to mediate depressive vulnerability in the elderly, however, sex differences and genetic vulnerability have not been taken into account in previous prospective studies.

Methods: Depression was assessed in a population of 1040 women and 752 men aged 65 years and over at baseline and after 7-year follow-up. Clinical level of depression (DEP) was defined as having either a score of 16 and above on the Centre for Epidemiology Studies Depression scale or a diagnosis of current major depression on the Mini International Neuropsychiatric Interview. Lipid levels, apolipoprotein E and serotonin transporter linked promoter region (5-HTTLPR) genotypes were evaluated at baseline.

Results: Multivariate analyses adjusted by socio-demographic and behavioral variables, measures of physical health including ischemic pathologies, and genetic vulnerability indicated gender-specific associations between dyslipidemia and DEP, independent of the use of lipid lowering agents or apolipoprotein E status. Men with low LDL-cholesterol levels had twice the risk of prevalent and incident DEP whereas in women low HDL-cholesterol levels were found to be significantly associated with increased prevalent DEP (OR=1.5) only. A significant interaction was observed between low LDL-cholesterol and 5-HTTLPR genotype, men with s/s or s/l genotype being at increased risk of DEP (OR=6.0 and 2.7, respectively) . No significant gene-environment interaction was observed for women.

Conclusions: DEP is associated with higher atherogenic risk in women (low HDL-cholesterol), whereas the reverse is observed in men (low LDL-cholesterol). Late-life depression may have a complex gender-specific etiology involving genetic vulnerability in men.

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