

FC05-03

ALTERED LEVELS OF NEUROTROPHIC FACTORS IN ALZHEIMER'S DISEASE PATIENTS WITH A LIFETIME HISTORY OF DEPRESSION

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Aims: We have recently shown both increases in the number of neuropathological changes in Alzheimer's disease patients with a history of recurrent major depression, and evidence for Alzheimer's disease-related neuropathological changes in patients with geriatric major depression. However, the correlates and possible underlying mechanisms for these neuropathological changes in Alzheimer's disease patients as a function of depression remains to be studied.

Method: Levels of several neurotrophic factors, including nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), and neurotrophin-3 (NT-3) were measured in a sample of Alzheimer's disease patients with and without a lifetime history of major depressive disorder.

Results: Alzheimer's disease patients with co-morbid depression showed lower levels BDNF ($P < .001$) and NGF ($P < .001$) than Alzheimer's disease patients without co-morbid depression. Results remained stable when controlling for age, gender, level of education, and other medical co-morbidities.

Conclusion: In Alzheimer's disease, the presence of depression co-morbidity corresponds to decreases in neurotrophic factors beyond effects of age, education, and medical co-morbidities, suggesting that the previously described link between major depression and the neuropathological processes in Alzheimer's disease may be related to changes in neuronal survival mediated by neurotrophic factors.

Funded by the National Institute on Aging (U01 AG016976 and NIA P01-AG05138) and NARSAD.