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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.

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