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BDNF AND NT3 CONCENTRATIONS IN POST-MORTEM BRAIN TISSUE OF INDIVIDUALS WITH RECURRENT DEPRESSIVE DISORDER

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Introduction: Neurotrophines such as brain-derived neurotrophic factor (BDNF) and neurotrophin 3 (NT3) have been implicated in the pathogenesis of depression and the therapeutic mechanism of antidepressants. Several clinical studies on depressive disorder (DD) have shown that levels of blood BDNF are diminished in depression and increase during antidepressant treatment. So far, only few studies have examined concentrations of neurotrophic factors in post-mortem brain tissue of individuals who suffered from DD.
Objectives/aims: The objective of the study was to show whether BDNF and NT3 levels in post-mortem brain tissue of individuals who suffered from recurrent DD and who had been treated with antidepressants differed compared to controls.
Methods: Specimens from cortical and limbic areas of post-mortem brain tissue of 7 individuals with an ante-mortem diagnosis of recurrent depressive disorder based on ICD-10 criteria (F33.0-F33.8) who received no psychotropic medication other than selective serotonin re-uptake inhibitors 6 months preceding death were selected. We compared the concentrations of BDNF and NT3 with 14 matched controls without any history of psychiatric disorder or treatment with psychotropic drugs.
Results: We detected no significant differences of either NT 3 or BDNF concentrations in any of the brain regions examined in patients who had suffered from DD and had been treated with antidepressants compared to controls.
Conclusions: These findings could be interpreted as a neurotrophic effect of antidepressant treatment in patients with recurrent DD, supporting the notion that depression improvement is associated with neuroplastic changes. However, more research using post-mortem brain tissue is needed.

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