Serum BDNF levels in euthymic bipolar disorder: preliminary results from the Galway bipolar study

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Introduction: BDNF has been postulated as a potential marker of bipolar disorder. We report analysis of BDNF levels in euthymic bipolar I disorder.

Methods: Serum BDNF levels were measured in 46 bipolar patients and 46 healthy volunteers using an ELISA. Bipolar I disorder was confirmed using the Structured Clinical Interview for DSM-IV, and patients were prospectively confirmed as euthymic 1-month prior to testing and again on the day of testing. Analysis of Variance compared between-group differences in BDNF concentrations, and within-group differences regarding medication or family history of mental illness.

Results: The bipolar disorder group contained 22 males and 24 females, all medicated, mean age 42.26 years (SEM 1.34), mean serum BDNF concentration 43.26ng/ml (SEM 2.66). The healthy control group contained 22 males and 24 females, mean age 40.65 years (SEM 1.34), mean serum BDNF concentration 41.18ng/ml (SEM 2.97). The groups did not differ significantly in age ($F_{1,92} = 0.717, p = 0.399$) or parental social class ($F_{1,92} = 3.15, p = 0.08$). Co-varying for age and gender revealed no difference in serum BDNF levels between the groups ($F_{1,92} = 0.714, p = 0.55$). There was no significant difference in patients’ serum BDNF levels with respect to lithium use ($F_{2,43} = 2.53, p = 0.09$) or family history of mental illness ($F_{1,44} = 0.03, p = 0.87$).

Discussion: Preliminary findings reveal no significant difference in serum BDNF concentrations between medicated euthymic bipolar I disorder patients and controls, thus supporting BDNF as a state marker in bipolar disorder.

Keywords: BDNF, bipolar disorder