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Brain Derived Neurotrophic Factor and Biomarkers of Insulin Resistance in Women with BD

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BACKGROUND: Brain-derived neurotrophic factor (BDNF) protein has been implicated in the pathophysiology of mood disorders, with early data suggesting that blood levels may vary by severity of mood symptoms. BDNF polymorphism, val66met, has also been implicated in mood disorders.

METHODS: Euthymic women with bipolar disorder (BD) (n=47) and healthy control women (n=26), ages 18-45, were clinically rated using the Montgomery-Asberg Depression Rating Scale (MADRS) and sampled for plasma BDNF concentration, with a subset undergoing genetic analysis for the val66met.

RESULTS: BD and control groups did not differ on any demographic variables, nor in plasma BDNF levels or val66met polymorphism. Plasma BDNF concentration did not differ by val66met or BD subtype, nor was it correlated with age or illness duration. Within women with BD, lower plasma BDNF concentrations were significantly associated with higher MADRS scores, even after controlling for psychotropic medication use and illness duration.

LIMITATIONS: The sample was relatively small and exclusive to women, with further research needed to investigate the links between BDNF markers and mood symptom severity in both men and women.

CONCLUSIONS: The study provides a gender-specific investigation of plasma BDNF levels and mood, and the results add further evidence of a significant interplay between BDNF markers and psychiatric symptomatology. Further, this association did not appear to be confounded by use of psychotropic medication. Studies with larger samples of both genders are needed to further delineate this relationship.

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