Association of Bilateral Inferior Frontal Cortex Thickening With High Impulsivity in Individuals at Genetic Risk for Bipolar Disorders

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SUBMISSION DETAILS

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Abstract:

Introduction: Impulsivity is a common feature of both patients with bipolar disorder (BD) and individuals with genetic risk for BD. Existing data suggests impulsivity related structural changes in both BD patients and bipolar genetic risk groups. However, the association of such changes with impulsivity is not well established.

Method: We included 73 offspring of BD (BDoff) and 49 healthy controls (HC) aged 15-30 years. Their T1-weighted magnetic resonance images and Barratt Impulsiveness Scale (BIS-11) score were obtained. We grouped the participants as high impulsive BDoffs (n=38), low impulsive BDoffs (n=35) and HCs (n=49) by latent profile analysis according to total and all subgroup scores on BIS-11. The thickness, volume and area of each cortical region was calculated using the FreeSurfer, and the difference in cortical thickness of the whole brain between groups was analyzed using ANOVA.

Results: The high impulsive BDoff group showed significant cortical thickening in bilateral pars opercularis and the right parsorbitalis compared to both low impulsive BDoff and HC groups. There were no significant differences between low impulsive BDoff and HC groups. No between-group differences were evident for cortical volume and area measures.

Conclusion: Bilateral inferior frontal cortex thickness in offspring of BD might be an early sign of BD related impulsivity trait rather than a hereditary trait. Longitudinal studies are needed to explore the predictive potential of inferior frontal cortical abnormalities in early detection of bipolar disorder in individuals at genetic risk for BD and presenting with trait impulsivity.

Novelty/Unique Data Structural differences associated with impulsivity in individuals at genetic risk for bipolar are replicated results. However, it is not clear whether these results are related to heredity. This design demonstrated that the inferior frontal cortex differences in individuals at genetic risk for bipolar are not hereditary. In addition, this study may serve as a guide to study the

early signs of bipolar disorder related impulsivity trait in longitudinal studies. The results of this study have not yet published and will only be presented at this event.

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DISCLOSURE

Disclosures

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Disclosure No, I have nothing to disclose.