Polygenic risk scores for bipolar disorders associated with worse global functioning

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SUBMISSION DETAILS

What is the Methodological Question Being Addressed? To investigate the association between genetic risk for bipolar disorders (BD) with measures of global functioning.

Introduction Polygenic risk scores for bipolar disorders (PRS-BD) have been related to clinical variables and individual characteristics.1-3 The aim of this preliminary study was to investigate the association between genetic risk for bipolar disorders (BD) with measures of global functioning.

Methods PRS-BD were calculated for adult participants (18-61 years old) with BD and healthy controls using PRSice-2 based on summary statistics from the Psychiatric Genomic Consortium. The psychiatric diagnosis was established according to the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition - Text Revision (DSM-IV-TR). Linear regression analyzes were performed to investigate the association between PRS-BD z scores with functioning, measured by the Global Assessment of Functioning (GAF), which data were log-transformed for the analyzes. Demographic and clinical variables that presented a significant association or a trend for association ($p<0.20$) with the outcome in the simple linear regression were included in a multiple linear regression model to examine the independent association between PRS-BD and GAF.

Results 203 participants (145 females [71.4%] and 58 males [28.6%]) were evaluated: 133 (65.5%) with BD type I diagnosis, 18 (8.9%) with BD type II and 52 (25.6%) healthy controls (Table 1). PRS-BD presented a weak and significant correlation with lower GAF (Spearman correlation r= -0.17, p=0.01) (Figure 1). Table 2 shows the simple linear regression analyzes between the independent variables and GAF (Table 2). The association between PRS-BD and GAF remained statistically significant when controlling for ethnicity, depressive and manic/hypomanic symptoms in a multiple linear regression analysis (B coefficient -0.02 [-0.03 – -0.003 95% CI] p=0.01 ; adjusted R2=0.57) (Table 3). Figure 2 shows PRS-BD z scores distribution between the three groups.

Conclusion Genetic risk for BD could confer a risk for worse global functioning regardless of psychiatric symptoms. Among the limitations, the lack of controlling for genetic background of the sample should be highlighted.

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Guidelines I have read and understand the Poster Guidelines

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