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Topic: S524 - Exploring the molecular, functional and structural brain changes in Mood Disorders and their relevance for illness outcome

Polygenic risk of depression and prediction of illness in families at high familial risk

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Mood disorders, including depression and bipolar disorder, have a strong familial basis and unaffected offspring of affected individuals have a substantially increased lifetime risk of these and other psychiatric disorders. It is increasingly understood that risk is conferred through the cumulative effects of a number of common genetic variants each of low-effect size. Using data from the Psychiatric Genomics Consortium, we conducted polygenic risk profiling of cohorts of individuals with brain imaging (Bipolar Family Study) and/or cognitive data. We showed that increased polygenic risk of mood disorder is associated with functional abnormalities of ventral prefrontal limbic areas and with reduced connectivity, measured using diffusion tensor imaging (DTI). We discuss the utility of polygenic profiling for biomarker and mechanism discovery and its potential role in predicting disease-associated phenotypes and clinical illness.

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