AS06-01 - NEUROIMAGING MARKERS OF GENETIC RISK, DISEASE EXPRESSION AND RESILIENCE IN BIPOLAR DISORDER: CAN THEY BE USED FOR DIAGNOSIS?

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Introduction: Althouhg Bipolar Disorder (BD) is amongst the leading causes of disability worldwide patients experience delays in accurate diagnosis ranging between 5-10 years.
Objectives: To develop a diagnostic aid for BD.
Aims: To evaluate the feasibility of applying pattern recognition techniques to structural magnetic resonance imaging (sMRI) data for the diagnostic classification of patients with BD.
Methods: Gaussian Process Classifiers (GPCs) were applied to gray (GM) and white matter (WM) sMRI data from 26 individuals with BD , 15 with Major Depressive Disorder (MDD) and 26 healthy controls.
Results: The best classification accuracy was obtained using GPC analysis of GM images which differntiated patients from controls with 73% accuracy (sensitivity 69%, specificity 77%). The GM classification accuracy obtained for BD compared to MDD was 66% (sensitivity 40%, specificity 93%). GM discriminative clusters were widely distributed within cortical and subcortical structures including the ventral prefrontal and cingulate cortex and parahippocampal gyrus, insula, thalamus and striatum.
Conclusions: Our results demonstrate the predictive value of neuroanatomical data in discriminating patients with BD from healthy individuals and MDD patients.