PW01-153 - **EFFECT OF DAAO ON REGIONAL BRAIN FUNCTION IN HEALTHY INDIVIDUALS AND PATIENTS WITH SCHIZOPHRENIA AND BIPOLAR DISORDER**

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Introduction: Recent studies have identified DAAO as a probable susceptibility gene for schizophrenia and bipolar disorder. However, little is known about how this gene may affect brain function to increase vulnerability to these disorders.

Objective: The present investigation examined the impact of DAAO genotype on brain function in patients with schizophrenia, patients with bipolar I disorder and healthy volunteers.

Aim: We tested the hypotheses that the high-risk variant of DAAO would be associated with altered prefrontal function and functional connectivity in schizophrenic and bipolar patients.

Methods: We used functional magnetic resonance imaging to measure brain responses during a verbal fluency task in a total of 121 subjects comprising 40 patients with schizophrenia, 33 patients with bipolar I disorder and 48 healthy volunteers. We then used statistical parametric mapping (SPM) and psycho-physiological interaction (PPI) analyses to estimate the main effects of diagnostic group, the main effect of genotype and their interaction on brain activation and functional connectivity.

Results: In schizophrenic patients relative to bipolar patients and controls, the high-risk variant of DAAO was associated with lower deactivation in the left precuneus and greater activation in the right calcarine and posterior cingulate gyrus during task performance. In addiction, these areas expressed altered functional connectivity with the rest of the brain in schizophrenic patients relative to bipolar patients and controls.

Conclusions: Our results suggest that genetic variation in DAAO has a significant impact on brain function and provide preliminary evidence for a disease-specific pattern of gene action in specific brain regions.