P-197 - RISPERIDONE AND DIVALPROEX INFLUENCE BRAIN FUNCTION NETWORKS IN PEDIATRIC MANIA

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Introduction: There is accumulating evidence for the efficacy and effectiveness of divalproex sodium (divalproex) and risperidone in the treatment of pediatric bipolar disorder (PBD).

Objectives: Clinical neuroimaging studies using appropriate challenge paradigms are a promising strategy for investigating how these medications influence brain function to provide therapeutic benefit.

Aims: Given that affect regulation is influenced by cognitive operations and vice versa, the current study of pediatric mania adopted a mechanistic orientation in comparing the action of two types of medications on brain function while engaged in memory operations, executive function, and response inhibition.

Methods: This was a double-blind 6-week fMRI trial with 24 unmedicated manic patients randomized to risperidone or divalproex, and 14 healthy controls (HCs) (mean age: 13.1±3.3years). Response inhibition, affective N back, and affective colormatching fMRI tasks were completed pre- and post-treatment.

Results: Risperidone, a serotonin dopamine antagonist, impacted frontostriatal circuitry while divalproex, a mood stabilizer, worked on frontotemporal circuitry. This finding was replicated across paradigms. In conjunction, across medication types, increased VLPFC at baseline timepoint predicted better treatment outcome. Conversely, increased amygdala activity at baseline predicted poorer treatment outcome.

Conclusions: Our study demonstrated how the neural networks were engaged in PBD patients during both cognitive and affective paradigms and while under the influence of an SGA and an anti-epileptic. When risperidone and divalproex are directly compared, there was significantly greater engagement of the frontostriatal regions with risperidone and in the frontotemporal regions with divalproex across all tasks.