Glutamate Activity in ACC

Spectroscopy in Adolescent Males with HF-Autistic Disorder

Higher glutamate in this area of the brain is hypothesized to be associated with ASD.

Statistical Significance: **p≤0.01

Joshi et al., 2013
12-week Open-label Trial of Anti-Glutamate Agent Memantine Hydrochloride (Namenda) for the Treatment of Social Impairment in Young Adults with High-functioning Autism Spectrum Disorder

Clinical Trials Registration @ ClinicalTrials.gov
Registration Number: NCT01333865
URL: http://www.clinicaltrials.gov/ct2/show/NCT01333865

Study Approved by: Partners Human Research Committee Institutional Review Board

Study Funded by: the Norma Fine Pediatric Psychopharmacology Fellowship Fund & the Pediatric Psychopharmacology Council Fund
ASD Features: Mean Response

Informant-Rated: Social Responsiveness Scale (SRS)

SRS: Mean Raw Score
Baseline: 99 ± 17
Endpoint: 71 ± 18
Reduction: 28 ± 25
Effect Size: 1.57

Statistical Significance: *p≤0.05, **p≤0.01, ***p≤0.001

Take away: Caretakers rated patients to have improvements in social skills and behavior after trial of Namenda.
ASD Features: Mean Response

Clinician-Rated: ASD Rating Scale

Total Mean Response

Mean Response by Domain

ASD-RS Mean Total
Baseline: 31 ± 7.4
Endpoint: 21 ± 8.3
Reduction: 10 ± 7
Effect Size: 1.30

Statistical Significance: *p≤0.05, **p≤0.01, ***p≤0.001
Non-verbal Communication Performance

Reading Non-Verbal Emotional Cues: DANVA2 Performance

Total Errors

Take Away: After medication, patients show increase in ability to recognize emotions conveyed through facial expressions.
Adverse Events

Reported > I visit

Experienced any AEs: 6 (33.3%)  
Serious AEs: None  
Treatment Limiting AEs: N=1  
  Decreased energy, emotional numbness, feeling dissociated, feeling on edge (resolved on d/c)

Take away: Patients reported very few adverse side effects while on Namenda
Characterizing Driving Behavior in Young Adults with ASD

The MIT AgeLab Driving Simulator

Difficulties attending to the roadway:
- Higher vertical gaze position
- Wider dispersion of horizontal gaze scanning
- Focus more on the median

Drive at higher level of arousal:
- Increased level of anxiety

Impaired driving ability associated with autism

Reimer, Fried, Biederman et al., 2013