



## **Maternal Autoantibody Related Autism: A multi-site DBPNet study**

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**Background:** Immune dysregulation and maternal inflammation are strongly associated with autism spectrum disorders (ASD). Maternal Autoantibody Related (MAR) autism has previously been identified as one biologically defined ASD subgroup, present in 23% of a Northern California sample and has been associated with increased child irritability and lower expressive language scores.

**Objective:** To investigate the presence of maternal antibody profiles in 2 other geographically distinct DBPNet sites and determine the relationship of these profiles with child behavioral characteristics.

**Design/Methods:** Sixty-eight mothers of children with ASD from 2 DBPNet sites provided blood samples and completed child behavioral questionnaires. ASD was confirmed via DSM-IV criteria and the Autism Diagnostic Observation Schedule (ADOS). Child IQ, adaptive (Vineland), and behavioral (Social Communication Questionnaire-SCQ, Aberrant Behavior Checklist-ABC) assessments were also obtained. Data from the two sites were analyzed together, as well as individually, and compared to each other.

**Results:** Overall presence of antibody profiles consistent with MAR+ ASD in the 2 sites was 19% (13 MAR+; 55 MAR-) and similar across the 2 sites (n.s.; see Table 1). Mothers at site 1 were significantly older by 4 years [95% CI (0.77; 6.69);  $p=0.014$ ]. Mean child age (8.3 yrs) was similar at both 2 sites and ranged from 2.6-14 yrs. There were no significant differences in composite and subtests scores for IQ, SCQ, ABC, or Vineland based on presence of MAR (Table 2).

**Conclusion(s):** We replicated the presence of MAR autism in 2 geographically distinct DBPNet sites, with prevalence similar to previous reports from California. There were no significant associations of MAR autism with cognitive or behavioral characteristics from these 2 sites, although this may be limited by our small sample size. Future plans include investigation of MAR autism with symptom severity and family history of autism and autoimmunity.

Table 1

	ACRI n=35	CHOP n=33	
MAR+	8/35 (23%)	5/33 (15%)	OR 0.61; 95% CI [0.14; 2.42] p=0.54
Mother's mean age in yrs (sd)	36.8 (5.4)	40.5 (6.2)	95% CI [0.77; 6.69] p=0.014
Child mean age in yrs (sd)	8.2 (2.4)	8.3 (3)	95% CI [-17.04;14.42] p=0.87

Table 2

	MAR- mean (sd) n=55		MAR+ mean (sd) n=13		95% CI	p-value
Global IQ	n=45	79.2 (19.9)	n=11	90.5 (26.6)	[-29.7; 7.24]	0.21
Social Communication Questionnaire	n=51	22 (6.5)	n=12	25 (6.5)	[-7.44; 1.4]	0.17
Vineland Adaptive Behavior Composite	n=35	68.8 (9.4)	n=9	73.1 (8.6)	[-11.36; 2.73]	0.2
Aberrant Behavior Checklist Total	n=32	48.1 (31.3)	n=6	46.8 (31.6)	[-32; 34.47]	0.93

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