CASE STUDY #1

Autoimmune-induced neuropsychiatric symptoms in an 8-year-old female

Antibiotic treatment leads to resolution of multiple neurologic and psychiatric symptoms

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Autoimmune Brain Panel™
(formerly known as the Cunningham Panel™)

Presentation: 8-year-old girl with abrupt onset of obsessive-compulsive behaviors, vocal tics, poor concentration, sensory/motor abnormalities, emotional lability, regression, aggression, and dysgraphia. Parents report urinary and sleep problems.

Course of Illness: Relapsing and remitting symptoms with improvement after 2-3 days of azithromycin.

Previous Diagnoses: Anxiety, OCD, unspecified disorder of immune mechanism

Previous Lab Results: ASO <50, Anti-DNase B <50, normal IgG titers

Medical History: Significant for two recent streptococcal infections with high fever, sore throat, sinus pain and cough. History of frequent ear infections, sinus infections and idiopathic fevers.

Family History: Positive for mycoplasma infections, autoimmune disorders, allergies, frequent bacterial and viral infections.

Pre-Treatment Autoimmune Brain Panel™ Results: Elevated anti-Lysoganglioside GM1 autoantibodies 640 (normal range 80-320), elevated anti-Tubulin autoantibodies 2,000 (normal range 250-1,000), and borderline anti-Dopamine Receptor D1 autoantibodies 2,000 (normal range 500-2,000)

Treatment: Azithromycin with rapid symptom improvement.

Post-Treatment Autoimmune Brain Panel™ Results: Anti-Lysoganglioside GM1 returned to normal (147); anti-Tubulin returned to normal (250) and anti-Dopamine Receptor D1 autoantibodies returned to normal (500)

Status: All symptoms resolved. Returned to baseline after 2-3 days of treatment.

PRE-TREATMENT TEST RESULTS

Anti-Dopamine D1 Receptor Autoantibodies	Borderline	2000
Anti-Dopamine D2L Receptor Autoantibodies	Normal	2000
Anti-Lysoganglioside GM1 Autoantibodies	Elevated	640
Anti-Tubulin Autoantibodies	Elevated	2000
CaMKinase II	Normal	95

POST-TREATMENT TEST RESULTS

Anti-Dopamine D1 Receptor Autoantibodies	Normal	500
Anti-Dopamine D2L Receptor Autoantibodies	Normal	2000
Anti-Lysoganglioside GM1 Autoantibodies	Normal	40
Anti-Tubulin Autoantibodies	Normal	250
CaMKinase II	Normal	112

SUMMARY

An 8-year-old girl with a history of strep, sinus and ear infections presented with numerous neuropsychiatric symptoms exhibited clinical and laboratory response to antibiotics.

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Autoimmune Brain Panel™ test results

(formerly known as the Cunningham Panel™)

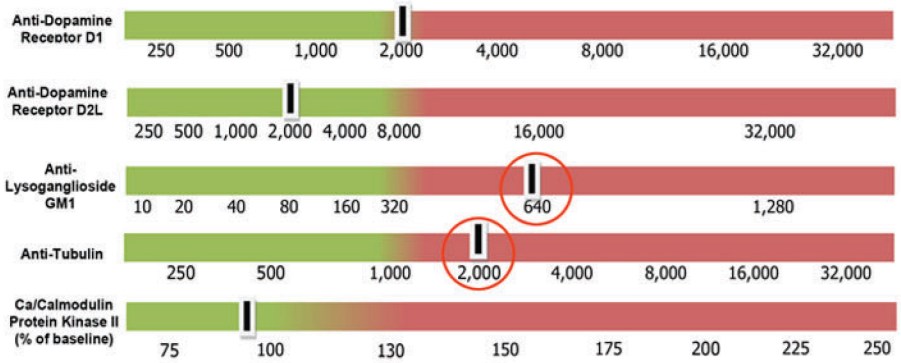
PRE-TREATMENT:
Patient Symptomatic

Patient symptoms pre-treatment consistent with elevated autoantibodies to Lysoganglioside GM1 (tics, dysgraphia), elevated anti-Tubulin autoantibodies 2000 (OCD, poor concentration), and borderline Dopamine D1 autoantibodies (anxiety, sleep problems, emotional lability, aggression, regression).

LABORATORY TEST RESULTS COMPARED TO NORMAL RANGES

	Anti-Dopamine Receptor D1 (titer)	Anti-Dopamine Receptor D2L (titer)	Anti-Lysoganglioside GM1 (titer)	Anti-Tubulin (titer)	CaM Kinase II (% of baseline)
Patient Result	**1:2,000**	**1:2,000**	**1:640**	**1:2,000**	**95**
Normal Ranges	500 to 2,000	2,000 to 8,000	80 to 320	250 to 1,000	53-130
Normal Mean	1,056	6,000	147	609	95
INTERPRETATION*	**BORDERLINE**	**NORMAL**	**ELEVATED**	**ELEVATED**	**NORMAL**

LABORATORY TEST RESULTS



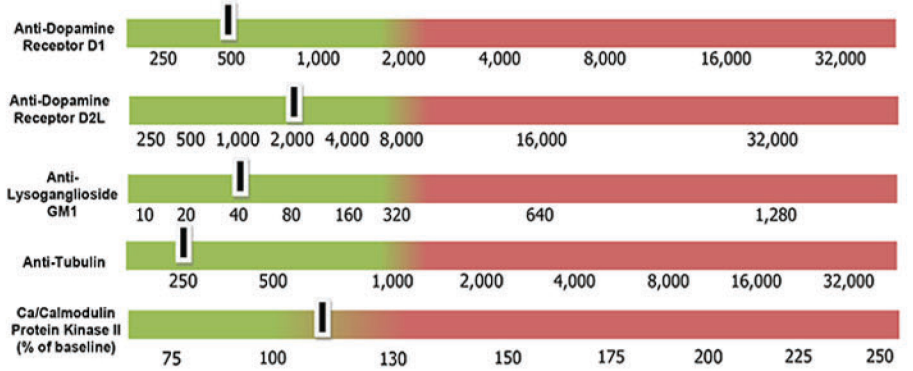
POST-TREATMENT:
Symptom Resolution

Symptom resolution complete. All Autoimmune Brain Panel™ markers within normal limits.

LABORATORY TEST RESULTS COMPARED TO NORMAL RANGES

	Anti-Dopamine Receptor D1 (titer)	Anti-Dopamine Receptor D2L (titer)	Anti-Lysoganglioside GM1 (titer)	Anti-Tubulin (titer)	CaM Kinase II (% of baseline)
Patient Result	**1:500**	**1:2,000**	**1:40**	**1:250**	**112**
Normal Ranges	500 to 2,000	2,000 to 8,000	80 to 320	250 to 1,000	53-130
Normal Mean	1,056	6,000	147	609	95
INTERPRETATION*	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ELEVATED**

LABORATORY TEST RESULTS



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