

Tiferet Chiropractic Neurology - Stefan M. Herold, DC, DACNB

Board Certified Chiropractic Neurologist

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February 13, 2014

Overall Impression:

Todd Giffen presented to my office with a history of symptoms consistent with CTE (chronic traumatic encephalopathy), a pathophysiological condition of immune-excitotoxicity resulting from repetitive insults to the brain causing priming of microglia cells that then over-react to future insults, be they physical or chemical traumas. This hyper-activation of the innate brain immune cells can remain elevated for months or even years after a trauma occurs, continuing to cause damage long after the initial injury. CTE causes diffuse injury to neuronal networks, with greatest vulnerability in the frontal lobes, hippocampus, basal ganglia and limbic areas, causing a wide variety of both physical and neuropsychological symptoms.

He reported during his history to me about a diagnosis of neuroleptic malignant syndrome, new onset of dystonia and drug induced dyskinesias as well as another episode of severe dysautonomia brought on by the medical treatments in the hospital, which his medical records from OSH should verify. Such chemically induced neurologic injury would be more than enough to explain a state of primed microglial cells leading to ongoing immunoexcitotoxicity.

To help determine the best course of treatment to help Mr. Giffen, I am recommending he undergo some testing to determine if he is still in an active phase of excitotoxicity. If so, therapy must be targeted at reversing the immunoexcitotoxicity so that functional neurological rehabilitation can be possible.

Recommendations for further testing for Todd M. Giffen through his primary doctor

Blood work for elevations in serum cytokines:

IL-1, known to cause increased sensitivity of the NMDA receptors

IL-6, cytokine with high density of receptors in brain regions associated with CTE

TNF-alpha, associated with calcium dysregulation, increases sensitivity of AMPA receptors, activates TNFR1 receptor when elevated promoting neurodegeneration

INF-gamma, increases glutaminase enzyme, promotes destruction in presence of glutamate excitotoxicity by raising quinolinic acid levels

Urine and plasma tests for markers associated with excitotoxicity:

Quinolinic acid [QUIN], commonly included in organic acid profiles like Metametrics

Lipid Peroxidation, usually assessed with TBARS tests, also available from metametrics

Imaging and other tests to document physical or functional changes:

High resolution MRI using DTI (diffuse tensor imaging) to assess for patchy white matter lesions which are common with CTE

VNG: Video Nystagmography to record eye movement dysfunctions, (Dr. Zielinski)



Electronically signed by Stefan M. Herold, DC, DACNB