A Comprehensive Integrative Approach to Neurodegenerative Conditions

By Dr. Todd A. Born, ND, CNS

PRACTICE POINTS

BIOGRAPHY Dr. Todd A. Born is a naturopathic doctor, and co-owner and medical director of Born Naturopathic Associates, Inc., in Alameda, California. Dr. Born is also the Product Manager, Head of New Product Development, Scientific Advisor for Allergy Research Group, LLC and is Editor-in-Chief of their science Focus Newsletter. He is a Thought Leader for the UK-based Clinical Education, a free peer-to-peer service that offers clinicians a closed forum to ask clinical questions and receive evidence-based responses by experts in their fields. Dr. Born's clinical focus is utilizing integrative medicine to treat chronic disease.

In our August 2016 Focus Newsletter, we discussed groundbreaking research on high-dose biotin (a B-vitamin), which has been able to halt progression, or least help with symptoms, in primary progressive and secondary progressive multiple sclerosis (MS) patients.

I was delighted to read this powerful new research, as it confirms what I have experienced as a naturopathic physician: the stunning ability of nutrients and botanicals, detoxification, dietary and lifestyle changes to impact refractory neurodegenerative disorders (ND). Indeed, our conversation in this issue with a Yale-trained neurologist who specializes in the treatment of MS also reinforces this. Here, I follow up with my own approach for testing and treating ND.

In naturopathic philosophy, we are taught the "therapeutic order." This entails using the least invasive, least aggressive treatments first, while utilizing drugs and surgery when pertinent. I will outline how I approach tough cases given this philosophy. Note, ND is an umbrella term for a range of conditions which primarily affect the neurons in the human brain, but can also affect the spinal cord[1] and peripheral nerves.[2] ND's are thought to be incurable and debilitating conditions that result in progressive degeneration and/or death of nerve cells.[3] For simplicity and space limitations, I will not directly write about my approach to dementia, Alzheimer's disease and other health concerns regarding cognitive decline, although, some of my suggestions below will help.

A naturopathic approach can often slow down the progression of the neuronal degeneration, as well as strengthen the central and peripheral nervous systems, decrease oxidative stress[4] and optimize mitochondrial function.[5]

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Toxic Exposures: The First Place to Look

First and foremost, I investigate the patient's history of past and current toxic exposures.[6] The link between Parkinson's disease (PD) and toxicant exposures is well established.[7] The link between heavy metals and multiple sclerosis (MS) is also highly suggestive.[8] Environmental exposures have also been implicated in amyotrophic lateral sclerosis (ALS).[9,10] This certainly doesn't mean everyone that has been exposed to an inordinate amount of toxicants will develop ND. Genetic vulnerability is always at play. The very apt saying applies: "Genetics loads the gun and environment pulls the trigger."

Next, I run blood tests for "acute" heavy metal[11] exposures and urine tests for more "chronic" heavy metal exposures. The technical definition of acute really means being exposed to large amounts of heavy metals at one time, or on a routine, or daily basis.[12] In the United States, the Agency for Toxic Substances and Disease Registry helps define these guidelines of acute exposures.[13] Albeit there are clear clinical guidelines for treating acute heavy metal poisoning, no such guidelines exist for chronic exposure, regardless of the source. This can make not only testing difficult to interpret, but treatment to remove "suspected" heavy metals from the blood, organs and even the brain is poorly defined.

I am not aware of exact timeframes for acute and chronic exposures, so I arbitrarily define anything more than six month's exposure to be chronic. It is generally accepted that blood is a more accurate reflection of more recent exposures to heavy metals, while urine can help assess chronic exposure. From the combination of these, inferences are made of the total body burden. For those interested in reading more about heavy metal exposures

I suggest "Integrative / Environmental Medicine Standard of Care Guidelines for Increased Total Body Burden of Toxic Metals,"[14] edited by Robban Sica, MD and "Chelating Agents for Neurodegenerative Disease's" by Ward, et al.[15]

I compare the patients' results to those of the CDC's National Report on Human Exposure to Environmental Chemicals.[16] This data is updated one to two times per year. For my patients in the 80th percentile or above, I treat. I do this mostly through sweat depuration,[17] exercise to tolerance, high fiber diets[18] to reduce enterohepatic redistribution, glutathione,[19] alpha lipoic acid,[20] N-acetylcysteine (NAC),[21] vitamin C,[22] probiotics[23,24] and occasionally, if body burden is very high, oral heavy metal chelators.[25]

I also run a battery of tests that reveal the status of key vitamins, minerals, and hormones, as well as assess markers of inflammation. That includes iron levels,[26] thyroid function (thyroid stimulating hormone [TSH], free thyroxine [FT4], and free triiodothyronine [FT3]), methylmalonic acid levels (MMA, a more sensitive indicator of B12 status than serum B12[27]), vitamin E[28] homocysteine,[29] dehydroepiandrosterone sulfate (DHEA-S),[30] pregnenolone,[31] testosterone,[32] estrogen,[33] 25(OH) D3[34], lipids[35,36,37] and inflammatory markers,[38] such as erythrocyte sedimentation rate and C-reactive protein. I treat based upon the blood tests' results. Most often, I see DHEA-S and pregnenolone low, or low normal, along with MMA and vitamin D. The remainder of the tests seem to run the gamut of low, to normal, to elevated, without much rhyme or reason. Do recall that both DHEA and pregnenolone (also known as the "master steroid hormone"), are steroid hormones, with known neurosteroid effects.[39,40]

Next, I consider infectious triggers and overall pathogen load. Depending on the case history and physical exam, I will consider tick-borne illnesses and viral[41,42] insults-particularly if extreme fatigue is present. I run quantitative titers of Epstein Barr virus (EBV), Cytomegalovirus (CMV) and herpes simplex 6 (HSV-6). If symptoms or history are suggestive, I also include testing for Helicobacter pylori[43,44] as its eradication has shown improvements in ND and dementia patients. In addition, stool microbiology cultures for assessment of the gastrointestinal (GI) microbiome[45] can also be very helpful. All these can give me a picture of potential infectious load which can activate the immune system and contribute to chronic inappropriate inflammation.

Some readers may wonder why I am not testing for more nutrients like Coenzyme Q10, or amino acids like L-carnitine. My rationale is that I end up using them anyway to enhance mitochondrial function, they're generally very well tolerated (even at very high doses), and sometimes these tests are not covered well by insurance, requiring the patient to pay out of pocket.

Diet is Key

I recommend all my ND patients go on a gluten-free, anti-inflammatory diet, which includes lots of low glycemic organic fruits and vegetables, such as blueberries, apples, pears, brussel sprouts and asparagus. This is essentially an adaptation of the traditional Mediterranean diet, minus gluten and many times, dairy. I recommend this diet because studies show that the inherently anti-inflammatory Mediterranean diet can improve white matter lesions.[46] I ask my patients to remove gluten from their diet, regardless of celiac disease, or sensitivity to gluten, because for some individuals gluten is pro-inflammatory, and even in my patients with negative serology and genetic tests for celiac, I see improvement after they remove gluten—some notice it within a few weeks, some within a few months.

Studies show that the inherently anti-inflammatory Mediterranean diet can improve white matter lesions.

I also suggest that they drink as much organic green tea[47] as they can, as polyphenols have been shown to be helpful in neurodegenerative diseases.[48] Decaf is fine, as with some individuals, caffeine may worsen their symptoms.

Constitutional Homeopathy

This is probably the most controversial and contentious of all medical modalities--conventional, integrative, or naturopathic. The details of this modality are beyond the scope of this article. It is very safe, very inexpensive and non-invasive. [49,50,51] Even in the prestigious journal, The Lancet, the authors report: "The results of our meta-analysis are not compatible with the hypothesis that the clinical effects of homeopathy are completely due to placebo."[52]

Classical homeopathy has been used in hundreds of thousands of patients over the 200 years since it was discovered by Samuel Hahnemann, MD and is the second most popular medical modality in the world (except the United States).[53] Every patient of mine ultimately receives a homeopathic medicine, which I have seen work in amazing ways, significantly improving quality of life, slowing down the progression of their disease(s), and even offsetting many of the side effects of their medications, so they can stay on a safer dose, with less toxicity and fewer side effects.

Nutrients I Use in Clinical Practice

Note the large dosage ranges, due to each patient's uniqueness, some may not tolerate higher doses. For simplicity, I am also only providing daily oral doses, not intramuscular or intravenous.

- NAC[54] 600-1200 mg
- Acetyl-Glutathione[55] 400-1000 mg
- Alpha Lipoic Acid (ALA)[56] 300-1200 mg
- Coenzyme Q10[57] 400-800 mg
- Acetyl-l-carnitine[58] 500-3000 mg
- Biotin[59] 200-300 mg
- Citicoline[60] 500-3000 mg
- B12 (as methyl, adenosyl and hydroxocobalamin)[61,62] 1000-5000 mcg
- Lipid Replacement Therapy[63] 3000-6000 mg
- Omega 3 & 6 essential fatty acids[64] 2000-6000 mg EPA/DHA, 600-1000 mg GLA
- Whole Coffee Fruit: 200 mg

Botanicals

(this is just a short list)

- Curcuma longa[65] 1000-5000 mg, depending on the form
- Mucuna pruriens[66] 400-1000 mg, standardized to 15% L-Dopa (caution with those on L-Dopa agonist medications)
- Bacopa monnieri[67] 150-500 mg
- Hericium erinaceus[68,69] 500-3000 mg
- Low Dose Naltrexone[70] 1.5-4.5 mg

There are, of course, caveats to my approach. None of these should be initiated without the guidance of a well-trained clinician. I suggest implementing just a few interventions at a time, based upon the condition(s) the individual has, and which intervention has the best level of evidence of improving outcomes, based upon published research. If one attempts to initiate too many simultaneous interventions and there is an adverse reaction, there are too many variables to determine the cause. Furthermore, the patient will end up finding an onslaught of treatments at the outset too cumbersome and will more than likely not adhere to the regimen if it seems overwhelming. If the patient is improving, or at least stable, there is no need to introduce another intervention.

There are also many combination products on the market, where synergy may play a role and the above dosages can be altered. This has the advantage of potentially cost savings and lower pill burden.

Save something in your therapeutic toolbox—these are progressive, debilitating diseases, with no known cure. Time will tell, but eventually, the disease(s) will progress and then, in my conjecture and experience, it is appropriate to introduce some of the additional treatment modalities.

Lastly, this information is not a complete list, but more of an idea-starter of how to help patients with these truly devastating conditions ■

Even in my patients with negative serology and genetic tests for celiac, I see improvement after they remove gluten—some notice it within a few weeks, some within a few months.

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