Dynamic Chiropractic

CHRONIC / ACUTE CONDITIONS

Functional Medicine

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Within the past five years, many nutritionally and holistically minded chiropractors have embraced "functional medicine" treatment concepts in dealing with the management of many commonly encountered chronic illnesses, including fibromyalgia, chronic fatigue syndrome and rheumatoid arthritis.

This article is an attempt to introduce, simplify, and summarize many of these seemingly complex concepts for practitioners who have just started to use these concepts, and for those practitioners who have been hearing about this revolutionary approach and have been considering incorporating these therapeutic strategies into their practices.

The functional medicine approach to the treatment of chronic disease is one that is based not on one agent or modality as the curative or palliative solution. It is holistically centered on the principle that restoration of proper cellular metabolism, through reducing cumulative toxic load and oxidative stress to the body, will allow normalization of mitochodrial respiration, cellular energy production, and ultimately to a reduction of the signs and symptoms of chronic disease. While many nutritionally-oriented doctors realize that standard nutritional support protocols alone are quite beneficial for cases of mild to moderate chronic disease, more severe cases often require a more comprehensive functional approach.

This functional medicine philosophy and approach was initially developed for clinical use in chronic fatigue patients with excellent results, and because of the commonality observed in many chronic conditions, it has been used over the years in other disorders with great success, including fibromyalgia, rheumatoid arthritis, and auto-immune disorders.[1-8] The seminal work of Bland, Rigden, Cheney, and others in the treatment of chronic fatigue syndrome has served as a successful template, and this approach is now used in the treatment of a broad range of chronic diseases[1-7].

The functional medicine philosophy is centered on the premise that a breakdown of the intestinal mucosa by the chronic ingestion of food and water-based toxins, and the use of common prescription and over-the-counter drugs (such as antibiotics and NSAIDS), can lead to dysbiosis and a hyperpermeable intestinal mucosa, or leaky gut syndrome. This intestinal hyperpermeablility can result in the intestinal mucosa failing to act as a selective barrier, leading to the crossing of food-based toxins and partially digested food proteins through the intestinal mucosa and into the systemic blood supply. The eventual result is an increase in food allergies and increased toxic load. (see Figure 1).

This increased toxic load can, over time, lead to increased stress on the liver and its ability to adequately detoxify these substances through phase I and II pathways. This will ultimately result in increased systemic tissue toxicity.

Increased tissue toxicity is thought to be a major trigger for mitochondrial dysfunction, which results in an inability of the body's cells, including the muscle cells, to efficiently utilize oxygen

dependant aerobic metabolic pathways. This accounts for the majority of ATP production. Decreased cellular ATP production can account for many (if not all) of the symptoms and signs associated with many chronic disease states, such as chronic fatigue syndrome (CFS) and fibromyalgia (FMS).

Increased intestinal permeability can also result in partially digested medium to large food proteins entering the blood supply and acting as antigens. The resulting antigen-antibody complexes seem to have an affinity for the synovium of articulations, This results in an inflammatory response in the joint linings commonly seen in arthritidies such as rheumatoid arthritis (RA). The main therapeutic agents used initially by standard medical physicians in the treatment of RA are (ironically) NSAIDs. NSAIDs, according to the PDR, result in increased intestinal permeability. Is it possible that the traditional allopathic treatment for arthritidies has only resulted in palliating the patient's symptoms, while actually exacerbating the disease?

The functional medicine therapeutic strategy is, therefore, centered around repairing the intestinal mucosa, correcting any intestinal dysbiosis, providing substances to the body to aid tissue detoxification, reducing oxidative stress, and ultimately promoting a return of normal cellular metabolism. Assessment begins by determining intestinal health and the functional reserve of the liver and its detoxification abilities. This is commonly done with the help of patient symptom questionnaires, such as the a metabolic screening questionnaire and functional laboratory studies, such as the lactulose/mannitol challenge for evaluating intestinal permeability, and the complete digestive stool analysis (CDSA) for detecting markers of digestion, absorption, and colonic flora. Detoxification ability of the liver can be assessed via the caffeine clearance and conjugation metabolite challenge tests, which evaluate phase I (cytochrome P450) and phase II (conjugation) liver detoxification pathways (see Figure 2). These tests are not performed by standard clinical laboratories, but are available through specialized laboratories who offer functional testing.[9]

Once the data is collected, a treatment program (see Figure 3) is selected, which may include specific nutrients to correct any intestinal hyperpermeability (leaky gut syndrome). Individual nutrients such as L-glutamine, purified hypoallergenic rice proteins, inulin, pantothenic acid, and antioxidants can be used, however, a formulary medicinal food[10,11] is usually much easier and more practical to use clinically. Digestion and absorption difficulties suggested on the CDSA can be treated with the temporary use of pancreatic enzymes and HCL (if indicated) in patients without gastritis or ulcers. Dysbiosis, a term used to describe an imbalance of colonic flora, can be addressed by the administration of lactobacillus acidophilus and probiotics such as fructooligosaccharides (FOS).

Any pathogenic bacteria, yeast, or parasites detected on the CDSA should be treated with the prescription (or natural) agents suggested by the sensitivity tests on the CDSA. These may include nonprescription substances such as berberine, garlic, citrus seed extract, artemisia, uva ursi, and others. This program of gut restoration is described by Bland, Rigden, Cheney, and others as the "Four R' approach.[3-4].

"Four R" Approach to Gastrointestinal Restoration

Remove: Eradicate any pathogenic microflora, yeast and/or parasites with natural or prescription agents suggested on the CDSA (i.e., berberine/goldenseal, garlic, artemesia, citris seed extract, uva ursi, etc.).

Eliminate known allergenic foods and/or follow a modified elimination diet by avoiding dairy and gluten containing foods, and emphasizing fresh nonprocessed foods.

Replace: Provide pancreatic multidigestive enzymes and HCL if appropriate, particularly if markers of malabsorption are present on the CDSA.

Reinoculate: Administer lactobacillus acidophilus, bifidobacteria and probiotics such as fructooligosaccharides (FOS) and inulin.

Repair: Provide nutrients to support gastrointestinal mucosal integrity, such as L-glutamine, antioxidants, glutathione, N-acetylcystein (NAC), zinc, pantothenic acid, medium chain triglycerides (MCTs), fiber, etc.

After intestinal issues have been effectively corrected, upregulation of liver detoxification pathways can be accomplished by providing nutrients which are used in phase I biotransformation and phase II conjugation pathways. These may include individual nutrients such as N-acetyl cysteine, methionine, cysteine, glycine, glutamic acid, glutathione and antioxidant nutrients (see Figure 3). However, the use of a specifically designed formulary medicinal food products are much more practical and efficient to use clinically.

Patients with elevated phase I cytochrome P450 enzyme activity and slow phase II conjugation activity should be treated with antioxidant therapy before detoxification begins. This slows the production of highly toxic biotransformed intermediate molecules which increase oxidative stress on the body.

This should all be combined with a diet which emphasizes fresh foods, and eliminates processed and allergenic foods. This will reduce the patients dietary toxic load (exotoxins), while the intestinal program will reduce gastrointestinal derived toxins (endotoxins). Following a modified elimination diet which eliminates the ingestion of gluten and dairy containing foods, and discontinuing as many drugs as possible, will also help during the detoxification process.

While a more comprehensive and complete discussion of this functional approach is beyond the scope of this article, referring to the cited literature can help further clarify these procedures for the practicing clinician and provide more information on the commercially available formulary products specifically designed for use in this program [1-11].

References

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