

Reducing Pain and Inflammation Naturally.

Part 6: Nutritional and Botanical Treatments Against “Silent Infections” and Gastrointestinal Dysbiosis, Commonly Overlooked Causes of Neuromusculoskeletal Inflammation and Chronic Health Problems

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Abstract: AT LEAST 56-70% OF PATIENTS WITH CHRONIC INFLAMMATORY ARTHRITIS ARE CARRIERS OF “SILENT INFECTIONS.” Non-infectious microbiological causes of musculoskeletal pain are commonly overlooked, and many doctors are unfamiliar with appropriate assessments and treatments for these conditions. Many patients have musculoskeletal pain and systemic inflammation as a result of “occult infections”, “silent infections”, or “dysbiosis”—including several subcategories of harmful relationships between the human host and his/her microbial guests or neighbors. This article reviews basic and advanced concepts so that clinicians can gain the practical insight necessary for effective clinical intervention.

INTRODUCTION

Approximately 70% of patients with chronic arthritis are carriers of “silent infections”, according to a 1992 article published in the peer-reviewed medical journal *Annals of the Rheumatic Diseases*.¹ A 2001 article in this same journal which focused exclusively on five bacteria showed that 56% of patients with idiopathic inflammatory arthritis had gastrointestinal or genitourinary dysbiosis.² Indeed, research evidence strongly indicates that bacteria, yeast/fungi, amebas, protozoa, and other “parasites” (rarely including helminths/worms) are an underappreciated cause of neuromusculoskeletal inflammation. This article will explain the mechanisms by which “silent infections” and “dysbiosis” can cause and perpetuate numerous health problems, and I will also discuss basic assessment and treatment measures that can be used clinically to help patients with microbe-induced musculoskeletal inflammation.

One of the problems that plagues many healthcare providers of all professions is that most doctors are still under the spell of the “Pasteurian paradigm of infectious disease”, namely that pathogenic microorganisms cause disease by causing “infection.” Relatedly, Koch’s Postulates first published in 1884 held that “the organism must be found in all animals suffering from the disease, but not in healthy animals” and “the cultured organism should cause disease when introduced into a healthy animal.” The major problems with the models proposed by Pasteur and Koch are that both of these models fail to appreciate 1) adverse microbe-host interactions which may not result in nor result from a true “infection”, and 2) the importance of the patient’s biochemical individuality and genetic uniqueness which results in the observed phenomenon that not all patients exposed to a particular microbe will express the associated disease. Supported amply by the research reviewed herein, healthcare providers have an obligation to move beyond these primitive “pathogenic” and “infection-based” models of microorganism-induced disease to

apprehend the more common “functional” disorders that can result from exposure to microbes.

PARADIGM SHIFT #1: MICROORGANISMS CAN CAUSE DISEASE EVEN WHEN NOT CAUSING “INFECTION”

We now recognize at least fourteen mechanisms by which microorganisms can cause immune dysfunction that promotes neuromusculoskeletal inflammation. Each of the following exemplifies a mechanism by which microbes can cause “disease” without causing an “infection.” Mechanisms by which microorganisms can contribute to musculoskeletal inflammation without causing “infection” include but are not limited to the following:

1) ***Molecular mimicry:*** Several microbes have peptides and other structures that resemble or “mimic” the peptides and cell structures found in human tissues. Thus, when the immune system fights against the microbe, the antibodies and T-cells can “cross-react” with the tissues of the human host. In this way, the immune system begins attacking the human body, which is otherwise an innocent bystander—the victim of “friendly fire.”³

2) ***Superantigens:*** Many viral, bacterial, and fungal microbes produce “superantigens”, molecules which are capable of causing widespread, nonspecific, and unregulated pro-inflammatory immune activation. One of the hallmarks of superantigens is their ability to induce polyclonal T- and B-lymphocyte activation and the production of excessive levels of cytokines and other inflammatory effectors.⁴ Obviously, when the body is in such a state of unregulated hyper-inflammation, inevitably some of this inflammation will affect the structures of the musculoskeletal system, especially since articular tissues are predisposed to immune attack. Several research groups have found evidence of superantigen involvement in the pathogenesis of rheumatoid arthritis.^{5,6}

3) ***Peptidoglycans and exotoxins from gram-positive***