

JOURNAL OF MUSCULOSKELETAL PAIN

Volume 8
Number 4
2000

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Fibromyalgia: Time to Consider a New Taxonomy?

Jan Dommerholt

ABSTRACT. Objectives: The purpose of this paper is to review whether the time has come to reconsider the use of the term “fibromyalgia” to describe this syndrome.

Findings: The term “fibromyalgia” suggests that fibrous and muscular abnormalities are causally involved in the etiology of the syndrome or that muscle pain is the most relevant clinical finding, however, current research suggests that there are no significant structural or functional differences between fibromyalgia and normal muscles. Persons with fibromyalgia have altered nociception, hyperalgesia, allodynia, and hypervigilance. The hyperalgesia is present not only over fibromyalgia tender points but also in nonpainful regions. Several studies have suggested that fibromyalgia is due to hypersensitivity of the central nervous system rather than pathologically painful muscles.

Conclusions: The etiology and symptoms of fibromyalgia are not due to structural or functional changes in muscle or fibrous tissues. Hence, the term “fibromyalgia” does not describe the etiology of the syndrome adequately. The International MYOPAIN Society could be a conduit for a change in taxonomy from “fibromyalgia” to for example, “complex widespread pain syndrome,” or other name that adequately reflects the etiology and complexity of the syndrome that is now known as “fibromyalgia.” *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: <getinfo@haworthpressinc.com> Website: <http://www.HaworthPress.com>]*

KEYWORDS. Fibromyalgia, taxonomy, hypersensitivity, allodynia, etiology

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Submitted: November 3, 1999.

Revision accepted: January 12, 2000.

Fibromyalgia is a disorder of chronic widespread pain, accompanied by tenderness, fatigue, sleep disturbance, and psychological distress. Several other syndromes and clinical entities have been linked to fibromyalgia including headaches, irritable bowel syndrome, chronic fatigue syndrome, interstitial cystitis, depression, panic disorder, dyspareunia, endocrine dysfunction, restless leg syndrome, attention deficit hyperactivity disorder, and noncardiac chest pain (1-11). The term "fibromyalgia" replaced the previously used term "fibrositis" with the introduction of the 1990 American College of Rheumatology Criteria for the Classification of Fibromyalgia (12). The term "fibromyalgia" suggests that fibrous and muscular abnormalities are causally involved in the etiology of the syndrome or that muscle pain is the most relevant clinical finding. Based on current research findings, the time has come to review whether the term "fibromyalgia" is still appropriate. A brief review of pertinent literature will follow.

While several studies identified "rubber bands" in single muscle fibers, "moth-eaten" and "ragged red" fibers, a reduced content of high energy phosphates, and a higher rate of phosphodiester resonance, that were thought to be related to damage to the sarcolemma, an abnormal occurrence of elastic fibers, decreased levels of collagen cross links, an energy deficiency state, or local muscle hypoxia, others did not find any significant structural or functional differences between fibromyalgia and normal muscles (13-26). When fibromyalgia patients were matched with equally fit healthy controls, no differences were found in lactate and potassium levels, oxygen uptake and ^{31}P magnetic resonance spectroscopy, suggesting that patients with fibromyalgia do not have abnormal muscle metabolism (27-32). The abnormalities noted in earlier studies appear to be the result of muscle deconditioning and are not specific for fibromyalgia (33).

It has been established that persons with fibromyalgia have altered nociception and hypervigilance (34-37). Vecchiet and colleagues measured the sensitivity to electrical stimulation of the skin, the subcutis, and the muscle and observed that hyperalgesia in all three tissues was present not only over fibromyalgia tender points, but also in nonpainful regions (38). In another study, the pressure-induced pain sensitivity in fibromyalgia patients was more pronounced deep to the skin and not restricted to muscle tissue. The altered sensitivity was not dependent on increased skin sensibility (39,40). Gibson and colleagues demonstrated that persons with fibromyalgia exhibit a significant reduction in heat pain threshold as well, although this was not confirmed by Nørregaard and colleagues (41,42). In spite of these findings, there is no convincing evidence that the peripheral tissues in persons with fibromyalgia are abnormal (21,43). Graven-Nielsen and colleagues concluded that the hyperalgesia observed following painful stimuli of a pain-free muscle in fibromyalgia patients indicates the involvement of central hyperexcitability (44).

Because of the lack of specific peripheral and histological findings, the focus of fibromyalgia research has shifted toward investigations of the central nervous system and the endocrine system. Several studies have identified substance P levels to be up to three times higher in the cerebrospinal fluid of persons with fibromyalgia compared with healthy controls (45-47). Russell reported the findings of elevated levels of nerve growth factor in the cerebrospinal fluid of persons with fibromyalgia (48). Lower serum levels of both tryptophan and serotonin have been reported and it is likely that persons with fibromyalgia have low brain tissue levels of both serotonin and substance P, and low spinal cord levels of serotonin and high spinal cord levels of substance P (49-53). Several studies have found disturbances of the hypothalamic pituitary adrenal axis (7,54).

As the most widely accepted model for the pathogenesis of fibromyalgia suggests hypersensitivity of the central nervous system rather than pathologically painful muscles, the questions emerge whether fibromyalgia should still be considered a "muscle pain syndrome," and whether the term "fibromyalgia" is still appropriate for the syndrome. Because persons with fibromyalgia display a generalized, decreased pain threshold, Russell suggested that fibromyalgia can be considered "chronic widespread allodynia," as it meets the criteria for allodynia as defined by the International Association for the Study of Pain (55,56). Allodynia is defined as "a painful response to a normally nonpainful stimulus" (55). This modified descriptor of fibromyalgia does not consider the multiple other features of the diagnosis, including hypervigilance, hyperalgesia, psycho-social dysfunction, etc. Considering all the different aspects of the syndrome, perhaps a more appropriate name would be "complex widespread pain syndrome," analogous to the development of the term "complex regional pain syndrome" that replaced the misleading terms "reflex sympathetic dystrophy" and "causalgia" (57). As the only international medical society devoted to myofascial pain syndrome and fibromyalgia syndrome, the International MYOPAIN Society could be a conduit for a change in taxonomy from "fibromyalgia" to "complex widespread pain syndrome," or any other name that adequately reflects the etiology and complexity of the syndrome that is now known as "fibromyalgia." Perhaps a consensus meeting during the 2001 MYOPAIN conference in Oregon would be the appropriate format to determine whether it is indeed time to change the taxonomy of fibromyalgia.

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