Part I: Fibromyalgia Wars

Fibromyalgia syndrome (FMS) is a condition characterized by chronic widespread pain and extreme fatigue. It has long been considered a controversial diagnosis, largely because its pathophysiology is poorly understood. Some have thought it to be a form of malingering, or a psychosomatic condition; others have viewed it as a rheumatologic or neurologic illness.

As early as the 19th century, descriptions of FMS are found in which terms such as rheumatism, muscular rheumatism, and fibrositis are used. The term “fibromyalgia” first came into use in 1976. The first controlled study finding symptom associations now considered characteristic of fibromyalgia was published in 1981. By 1987, the Journal of the American Medical Association was using the term “fibromyalgia syndrome”, noting it to be a “controversial condition”.

You might think that the emergence of diagnostic guidelines in 1990 would have lessened the degree of controversy but such has not been the case. In 2009, one of the authors of these guidelines, Fredericke Wolfe, MD, wrote about the continued controversy in the American Journal of Rheumatology:

FM is a bitterly controversial condition. It pits patients, pharmaceutical companies, some specialty physicians, professional organizations, and governmental agencies — groups with substantial political and economic power who benefit from the acceptance of FM — against the large majority of physicians, sociologists, and medical historians in what we call the “fibromyalgia wars.”

In 2011, Dr. Wolfe published a study based on the updated American College of Rheumatology (ACR) 2010 diagnostic criteria for FMS, arguing that the clinical variables of FMS are not sufficiently distinct to be considered disease-specific. In counterpoint, Dr. Hugh A. Smythe, a coauthor of the ACR 1990 guidelines, argued that qualitative distinctions are identifiable and consistent with the 2010 guidelines.
The debate is more than academic since research funding, treatment development, and quality of life for those with FMS are impacted by the lack of consensus surrounding it. While recent studies identifying the involvement of a type of neuropathy[12] and circulatory pathology,[13] have helped to establish a physical basis for the syndrome, they have also added to the lack of clarity regarding the classification of the disease. The research continues, and so, unfortunately, does the controversy.

In part II, we will discuss what is known about FMS in terms of risk factors and other contributors to the condition…

References:
Part II: Risk Factors and Contributors

In the previous article on fibromyalgia, we saw that this is a condition with a long history of controversy. In this second article, we will see how research is helping to develop a profile of the kind of person most likely to be at risk to develop it.

The prevalence of FMS ranges from 0.4–9.8% worldwide. Previously considered to be a disease of developed countries, it is interesting to note that the highest prevalence rate was found in Tunisia, and countries such as Bangladesh and Pakistan report prevalences of 3.6% and 2.1%, respectively.[1] In Canada, the prevalence has been estimated to be 1.1–3.3%, with a 6:1 ratio of females to males, affecting people of all ages.[2, 3]

Risk factors are currently considered to include:

- genetics;[4]
- family environment;[5]
- history of physical or emotional trauma;[6]
- factors such as alterations in the anatomy,[7, 8] functioning,[9] and chemistry[10, 11] of the nervous system;
- simultaneous illness with conditions such as HFE-related hereditary hemochromatosis,[12] migraine,[13] disordered sleep,[14] irritable bowel syndrome,[15] and negative affects — anxiety, depression, stress.[16]

Of the other conditions associated with FMS, one of the most significant is impaired sleep. A 2008 study found that widespread pain associated with disordered sleep resolved when restorative sleep occurred.[17]

In a small study published in 2013, researchers found that the body chemistry of disturbed sleep for people with FMS differ from those with other causes of sleep impairment. An
increase in one marker, TNF-\textit{alpha}, was positively correlated with fatigue, stress and neurological symptoms for subjects with FMS. This was not the case in the control group. Controls with obstructive sleep apnea had positive correlations of fatigue and poor sleep quality with an increase in another marker, interleukin-1\textit{beta}; these correlations did not hold true for subjects with FMS.\cite{18}

While the research continues to expand and refine our understanding of risk factors for fibromyalgia, the studies cited here give rise to the following profile for a person who may be at risk: this would be an adult female with a known case of fibromyalgia in another member of her immediate family, and/or a personal history showing long or multiple periods of elevated stress, mood disorder, poor sleep, irritable bowel syndrome, and/or migraine.

\textbf{References:}
Part III: Diagnosis of FMS

The first article in this series discussed the history of fibromyalgia (FMS) and the controversy surrounding its status as a diagnosis. The second article identified those who may be at risk of developing this illness. In this article, we will look at the current as well as emerging standards for making a diagnosis.

The controversy surrounding the validity of fibromyalgia diagnoses, and concern related to the potential for misdiagnoses led to the development of diagnostic guidelines in 1990 by the American College of Rheumatology.[1] These have been subsequently updated, most recently in 2010.[2]

In Canada, a separate set of guidelines has been developed to support an FMS diagnosis, endorsed by the Canadian Pain Society and the Canadian Rheumatology Association. The diagnosis is based on the chronic presence of a complex of symptoms including widespread pain, fatigue, nonrestorative sleep, cognitive dysfunction, mood disorder, pain-related somatic symptoms such as irritable bowel syndrome and migraine, and non–pain-related symptoms such as sexual dysfunction and posttraumatic stress disorder (PTSD).[3]

The American and Canadian guidelines make reference to the well-known “tender-point examination.” While the tender-point examination should be part of the diagnostic process, its findings no longer constitute a requirement for a confirmed diagnosis under either set of guidelines.[2, 3]

This departure from the original guidelines has generated considerable debate, with many specialists arguing that the tender-point exam constitutes one of the few relatively objective tests available to diagnose FMS and distinguish it from other conditions also characterized by widespread pain.[4–7]
The diagnostic controversy around FMS may be resolved in the future by current research which is identifying physical (testable) markers:

- elevated brain chemicals such as substance P and glutamate;[8]
- neurological changes including a specific type of neuropathy[9] and MRI brain-scan patterns;[10]
- a blood test that detects FMS-specific changes in the way in which the body uses an amino acid, tryptophan,[11] and some that identify functional alterations in cellular elements called mitochondria.[12]

Taken together, these diagnostic advances accomplish several things: they validate FMS as a condition with physiological (versus psychological) causes; they provide objective, reproducible, and verifiable means of reaching a diagnosis; and they provide the means of distinguishing potential FMS cases from other possible causes of widespread pain and fatigue, such as chronic fatigue syndrome, myalgic encephalomyelitis, and rheumatoid arthritis. We may, at last, be moving from controversy to clarity.

In this series of articles, we have thus far explored the controversial history of fibromyalgia, the factors that increase the risk of developing it, and advances in the processes used to diagnose it. In the final article, we will investigate the status of treatments for FMS.

References
Fibromyalgia

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Part IV: Treatment

Having explored the controversies associated with fibromyalgia (FMS) and its diagnosis in preceding articles, this final article will identify evidence-informed treatments.

Within the realm of mainstream medicine, key forms of treatment include:

- psychological interventions, such as Cognitive Behavioural Therapy[1]
- medications, such as antidepressants,[2] anticonvulsant drugs,[3] opioid pain-killers,[4] and muscle relaxants;[5]
- lifestyle modification such as activity pacing[6] and exercise.[7]

In the realm of natural treatments, the following are supported by research:

- supplements that target energy production, such as coenzyme Q_{10},[8] B vitamins,[9] quercetin,[10] and L-carnitine;[11]
- supplements that normalize sleep patterns, such as melatonin,[12] niacin,[13] and valerian;[14]
- supplements that modify stress responses and promote muscle relaxation, such as magnesium, ashwagandha,[15] and rhodiola.[16]

The controversy and confusion related to fibromyalgia within the health-care industry has prompted the development of a vast array of “alternative” treatments accessible through the Internet. One such treatment with long-standing popularity is the so-called guaifenesin protocol.

Guaifenesin is an over-the-counter medication that is used primarily as an expectorant for cough and cold compounds. The protocol was developed by Dr. R. Paul St. Amand in the 1990s based on his observations of FMS patients, along with some small studies he did to substantiate the treatment and three primary elements: 1) taking considerable amounts
of guaifenesin daily, 2) adopting a low-glycemic diet, and 3) avoiding salicylates (plant-generated compounds thought to interfere with action of guaifenesin). Dr. St. Amand theorizes that an excess of the mineral phosphorus (as phosphate) causes the muscular symptoms of FMS which are relieved when guaifenesin promotes its excretion.[17]

Of course, this theory is... controversial. Detractors tell us there is no evidence of phosphate overload in FMS,[18] and that guaifenesin has muscle relaxant and analgesic properties that could account for its benefits as a treatment[19] — a version of guafenesin is used for these reasons in the Robax brands of over-the-counter muscle spasm relief medications.

As research dispels the confusion and controversy connected with FMS, targeted treatments will emerge. For now, approaches that offer integration of conventional and natural treatments seem to provide the greatest relief.

References