

Fibromyalgia, Diagnosis and Management

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ABSTRACT

Fibromyalgia (F.M) is a syndrome characterized by chronic widespread pain that causes disability, with a prevalence of 2-5 % in the general population as recent studies revealed (1).

This syndrome is of multifactorial etiology including psychological, biological and social factors. Other possible predisposing factors may include: female gender, menopause, poor physical condition.

Nevertheless, (F.M) causes have not yet been fully elucidated. There was a central sensitivity and an abnormal process of central nociception. Type of (F.M) pain is considered to be of a sensorineural origin.(2)

Diagnosis of (F.M) is somewhat difficult as it has mostly subjective findings and less or few objective elements; that makes it to be diagnosed by exclusion, sometimes it may takes few years for the diagnosis to be made in a person because of the need to exclude many other possible causes that met the complaints.(3)

Treatment of fibromyalgia is multimodal directed toward symptoms and the main target of management besides pain alleviation is the modification of patients life style, psychological status, and sleeping issues . Patient and family education of the long term treatment and nature and course of the (F.M) syndrome is a milestone in the treatment regimen.

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INTRODUCTION

Fibromyalgia is a chronic, diffuse musculoskeletal pain syndrome of unknown etiology that most commonly affects adults.(4) Other common symptoms are extreme fatigue impacting on day to day activities, difficulty sleeping, increased sensitivity to stimuli such as heat, cold and smell, memory and concentration problems Depression and anxiety can also be symptoms although it is possible that these symptoms are as a result of the other symptoms.

“Fibromyalgia is a complex condition and psychological, social and lifestyle factors have all been found to play an important role in symptom experience”.

Fibromyalgia affects 2–4% of the general population and of those affected, 80–90% are female. In general, symptom onset occurs between the ages of 30 – 60 .central and peripheral system changes in terms of hypothalamic-pituitary-adrenal axis dysfunction,

,central sensitization, windup (a progressive increase in sensitivity over time, i.e., lower stimuli result in increased pain), elevated excitatory neurotransmitters, vasoconstriction, ischemia and adrenergic receptor sensitivity have been described, although none have been identified as clear causative factors.(6) Patients may exhibit symptoms of fibromyalgia for 5 years before a diagnosis is made. A significant reduction in the quality of life may occur for patients with fibromyalgia. Fibromyalgia symptoms are worse and the quality of life is poorer for young (younger than 39 years) or middle-age (40–59 years) patients with fibromyalgia versus older (older than 60 years) patients..

Symptoms of fibromyalgia syndrome:

The most common presentation of fibromyalgia patients is that they " feel unwell" , 30% of patient may relate the onset of the symptoms to a traumatic experience(6),they can specify the time of onset precisely by date and time. The hallmark of the

disease that there is no concurrent association of inflammation anywhere or ongoing inflammatory process with the widespread pain they are suffering. Chronic fatigue, cold extremities, memory and cognitive impairment, sleeping disturbances and imbalance, musculoskeletal pain and involuntary contractions, headache, depressive disorders; are

common symptoms associating fibromyalgia. These are daily complaints that affects the lifestyle and may induce functional disability and has a great impact on the diseased person's life. These patients are never symptom free nevertheless the severity of which may be of a variable degree.

(Figure 1) show the effects of F.M.S

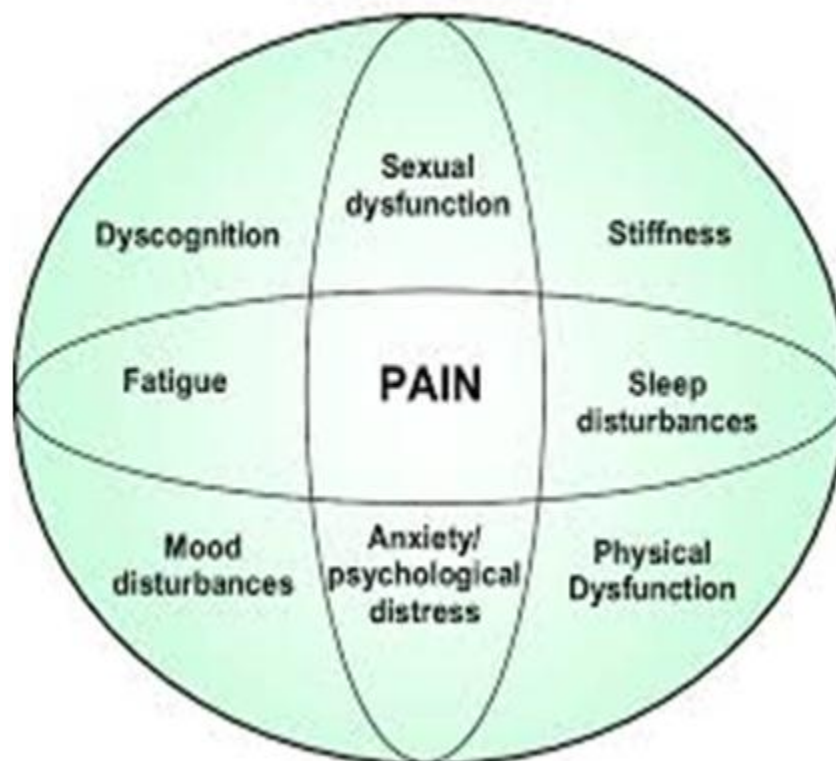


Figure 1 - the symptoms and impacts of F.M.S

Awareness and intrafamily understanding has a major role in both the diagnosis and the treatment of this disease as well as supporting and modifying the behavior and the psychological impact of the affected victim.

Assessment and diagnosis:

In 1990, the American College of Rheumatology (ACR) developed research criteria requiring that an individual possess both a history of chronic

widespread pain and 11 of 18 possible tender points on physical examination. The Manchester criteria¹⁰ utilize a whole body diagram to indicate areas of pain, thereby obviating the necessity of tender points. However, both of these criteria are used predominantly for research/epidemiologic purposes. The use of tender points as diagnostic criteria began to fade as it fails to recognize the presence of other symptoms that need to be addressed to optimally manage FM patients.⁽⁷⁾

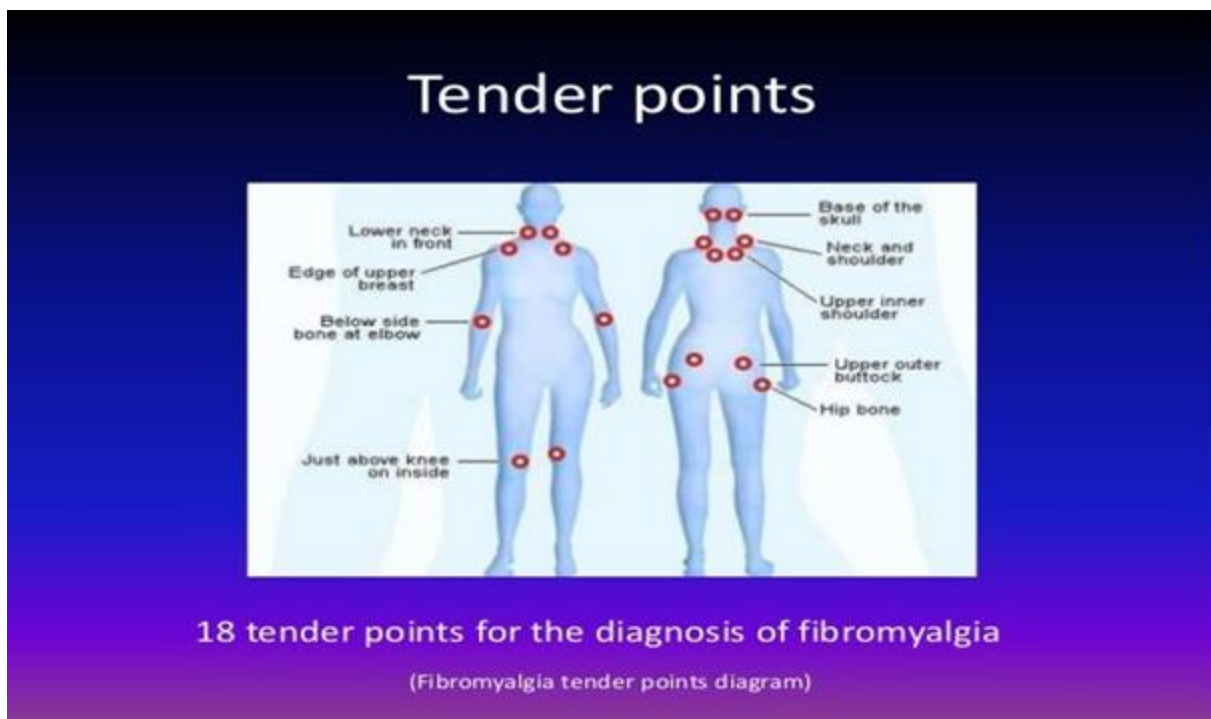


Fig 2 – the 18 tender points for the diagnosis of F.M.S

The ACR Classification criteria (8):

History of widespread pain > three months

- Above and below waist
- Left and right side
- Must include axial spine

Pain in 11 of 18 tender points, palpation pressure < 4 kg

- Suboccipital muscle insertions
- Low cervical (C5 – C6 transverse processes)
- Upper middle trapezius muscles
- Supraspinatus origins (medial upper scapula)
- 2nd ribs (near costochondral junction)
- Lateral epicondyles (2 cm distal to them)
- Gluteal muscles (upper outer quadrant)
- Greater trochanters (2 cm posterior)
- Medial fat pad of knees (above joint line)
- Table 1- 1990 ACR diagnostic criteria for F.M.S
- Diagnosing FMS in Clinical Practice

FMS should be positively diagnosed. The 1990 American College of Rheumatology (ACR) diagnostic criteria were developed for research purposes and not purely as a diagnostic instrument (Table 1). (8) This older criteria require the presence of widespread pain for at least three months duration with the presence of at least 11 of 18 tender points in designated areas (fig2). Tender points, the only physical examination finding used to help diagnose FM, indicate an overall reduction in pain threshold. They do not represent localized soft tissue pathology, and have been criticized for reliance on subjective interpretation.

New ACR criteria are currently being reviewed to eliminate overreliance on tender points in favour of incorporating other clinically meaningful symptoms (sleep disturbance, fatigue, cognitive impairment) and somatic symptoms (depression, headache, irritable bowel) frequently present in FMS patients. (9) An about to be validated tool that the author has found to be very helpful in screening for FMS is the Fibromyalgia Moldofsky Questionnaire. A score > 11 is suggestive of FMS.)

Table 1. The Evolution of ACR Classification of Fibromyalgia
The ACR 1990 Criteria

Widespread pain in combination with:

- Tenderness at ≥ 11 out of 18 specific tender points
- Digital palpation should be done with about 4 kg of force.
- The patient must state that the palpation was painful for the tender point to be considered positive.
- Concomitant radiographic or laboratory abnormalities do not lead to exclusions.

In terms of diagnosis or classification, there is no distinction between primary fibromyalgia and secondary (or concomitant) fibromyalgia.

The ACR 2010 Criteria

Tender-point examination eliminated and patient questionnaire with 2 scales: widespread pain index (WPI) and the symptom severity score (SSS) were added. Numerical score was created—the diagnosis of fibromyalgia syndrome was supported when:

- WPI ≥ 7 and SSS ≥ 5 or
- WPI 3-6 and SSS ≥ 9

The ACR 2011 Criteria Modification

Physician-estimate of somatic symptoms eliminated and the WPI and expanded. The new 0-31 FM symptom scale (FS) include:

- 19 pain locations
- 6 self-reported symptoms, including difficulty sleeping, fatigue, poor cognition, headache, depression, and abdominal pain.
- An FS ≥ 13 best separated criteria+ and criteria- patients

ACR, American College of Rheumatology

As there are no routine laboratory test that confirm the diagnosis of F.M.S , only ordinary tests may be recommended , including (CBC),(ESR).(CK), rheumatoid factors and thyroid hormones and function.

Unneeded investigations may drive the patients to believe that there is a more serious pathology and this will be reflected on there behavior and dealing with the symptoms in aggravated reaction besides the psychological trauma for both the patients and there families which is not true in the first place(10).

Treatment of F.M.S:-

Treatment of fibromyalgia is of two lines ; non-pharmacological ; such as encouraging physical exercises , education , cognitive and behavioral therapy. The obstacle of these regimen is the underestimation of there beneficial effect"s by the patient"s themselves , may be due to long term exercise and slow progression and curing of the symptoms(11).

Physical exercises appears to beneficial in F.M patients , it showed improvement of physical symptoms and reduce some of the functional disability(12), these exercises modalities included aerobics ,muscle strengthening and flexibility trainings.

Education , cognitive-behavioral therapy focuses on the negative thoughts of the outcome of F.M, the fear of unknown ,feeling of being disappointed of the treatment, all of these catastrophic thought can increase the severity of pain and suffering. The rule of the therapist is to take these negative thought and converts them to more positive ideas and giving hope of a more promising outcomes, together with success of physical treatment and intrafamily encouragement, paying more attention to the emotional status of the patients is a corner stone in the prognosis and better outcome.(13).

Pharmacological treatment of F.M.S:

Pharmacological treatment is targeting to decrease the severity of pain as much as possible, and to alleviate sleeping disturbances , and as mood stabilizers; anti-depressant.

The usually prescribed drugs are:-

1. Tricyclic anti-depressant; Cyclobenzaprine, a centrally acting muscle relaxant that showed reduction of pain severity by about 27%.. amitriptyline another TCA proved to be effective in reducing pain,fatigue and improving sleep in F.M patients.(14)
2. pregabalin; a (GABA) analogue, There was strong evidence demonstrating reduction of pain , improvement in sleep , but no effect on mood depression .(15)

3. Gabapentine; an antiepileptic drug similar to pregabalin, but less effective in the treatment of F.M as pregabalin although it is safe as shown in clinical trials.(16)
4. Pramipexole,a dopamine agonist used for Parkinson's disease, could be potentially useful for FM patients with concomitant restless leg syndrome.
5. Tramadol, which possesses some analgesic activity,may be utilized for FM patients with a significant pain component to their disease.
6. tizanidine, an alpha-2-adrenergic agonist muscle relaxant, could be potentially used for FM patients with spasticity.

References:-

1. Vincent A , Lahr BD , Wolfe F , et al . Prevalence of fibromyalgia : a population-based study in Olmsted County, Minnesota, utilizing the Rochester Epidemiology Project. *Arthritis Care Res (Hobken)*. May 2013; 65 (5):786-92.
2. Burgmer M, Pogatzki-Zahn E, Gaubitz M, et al . Altered brain activity during pain processing in fibromyalgia. *Neuroimage*. 2009; 44(2):502-508.
3. Smith WA. Fibromyalgia syndrome. *Orthopedic Nursing* 1988; 33(4):653-669.
4. Centers for Disease Control and Prevention. Fibromyalgia. In: Centers for Disease Control and prevention, editor; 2012
5. Abeles AM, Pillinger MH, Solitar BM et al. Narrative review: the pathophysiology of fibromyalgia. *Ann Intern Med* 2007;146(10):72634
6. Abeles M. Fibromyalgia Syndrome in Functional Somatic Syndromes etiology diagnosis and treatment edited by Manu P Cambridge Universtiy Press 1998, page 32-57
7. Carville SF, Arendt-Nielsen S, Bliddal H, et al; EULAR. EULAR evidencebased recommendations for the management of fibromyalgia syndrome. *Ann Rheum Dis*. 2008;67:536–41.
8. Wolfe F, Smythe HA, Yunus MB, et al: The American College of Rheumatology 1990 Criteria for the Classification of Fibromyalgia. Report of the Multicenter Criteria Committee. *Arthritis Rheum*.1990;33(2):160-72.
9. Wolfe F, Clauw DJ, Fitzcharles MA et al: American College of Rheumatology Preliminary Diagnostic Criteria for Fibromyalgia and Measurement of Symptom Severity. *Arthritis Care Res*.2010;62(5):600-10
10. Hughes G, Martinez C, Myon E et al: The Impact of a Diagnosis of Fibromyalgia on Health Care Resource Use by Primary Care Patients in the UK: An Observational Study Based on Clinical Practice. *Arthritis Rheum*. 2006; 54(1):177-183. Chou R, Huffman LH; American Pain Society; American College of Physicians.
11. Nonpharmacologic therapies for acute and chronic low back pain:a review of the evidence for an American Pain Society/American College of Physicians clinical practice guideline. *Ann Intern Med*. 2007;147:492–504.
12. Jones KD, Liptan GL. Exercise interventions in fibromyalgia: clinical applications from the evidence. *Rheum Dis Clin N Am*. 2009;35:373–91.
13. Thieme K, Flor H, Turk D. Psychological pain treatment in fibromyalgia syndrome: efficacy of operant behavioural and cognitive behavioural treatments. *Arthritis Res Ther*. 2006;8:121–32.
14. Bennett RM, Bushmakin AG, Cappelleri JC, Zlateva G, Sadosky AB.Minimal clinically important difference in the fibromyalgia impact questionnaire.J *Rheumatol*. 2009;36:1304–11.
15. Häuser W, Bernardy K, Uçeyler N, Sommer C. Treatment of fibromyalgia syndrome with gabapentin and pregabalin—a meta-analysis of randomized controlled trials. *Pain*. 2009;145:69–81.
16. Arnold LM, Goldenberg DL, Stanford SB, et al. Gabapentin in the treatment of fibromyalgia: a randomized, double-blind, placebo-controlled,multicentertrial. *Arthritis Rheum*. 2007;56:1336–44.