

Review Article

The Fibromyalgia Syndrome Management- A Short Review on Recent Trends

Priyabrata Dash¹, Manas Ranjan Mahanta², Nihar Ranjan Mohanty³, Manasa Ranjan Pattanaik⁴, Smrutiranjana Sahu³, Dwarikanath Rout^{3*}

¹Associate Professor cum Principal (I/C), KIMS School of Physiotherapy, KIMS, KIIT-DU, Bhubaneswar, India

²Department of Physiotherapy, Institute of Health Sciences, Chandaka, Bhubaneswar, India

³Assistant Professor, KIMS School of Physiotherapy, KIMS, KIIT-DU, Bhubaneswar, India

⁴Physiotherapist, KIMS School of Physiotherapy, KIMS, KIIT-DU, Bhubaneswar, India

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Abstract: Background: Fibromyalgia (FM) is characterized by widespread musculoskeletal chronic pain, which compromises the patient's quality of life and is a Somatic symptom disorder. A typical symptom seen in the patients is the lack of acceptance of the disease, since its pathophysiology is not clear. This work aims to clear few new treatment methods at a holistic level, that is, cognitive, physical, and pharmacological therapies. **Methodology:** A literature review was carried out from researchgate, google scholar, pubmed, scopus etc. that discusses treatment methods that relieves the pain and manage the symptoms of the disease. **Results:** Fibromyalgia symptoms can be managed by various treatment protocols that include a response to the mind through pain management, response to the body through physical activity, and response to the pain through pharmacological treatment. **Conclusions:** Treatment for fibromyalgia often involves medications along with complementary treatments, such as exercise, acupuncture, and life style modification.

Keywords: Fibromyalgia, Somatic symptom disorder, pathophysiology.

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INTRODUCTION

Fibromyalgia is a syndrome of unknown etiology characterized by chronic wide spread pain, increased tenderness to palpation and additional symptoms such as disturbed sleep, stiffness, fatigue and psychological distress [1-3]. Fibromyalgia is a form of soft tissue rheumatism. A combination of three terms i.e., **fibro** - (from the Latin fibra, or fibrous tissue), **myo** - (the Greek prefix myos, for muscles), and **algia** - (from the Greek algos, which denotes pain).

Fibromyalgia replaces earlier names for the syndrome that are still used by doctors and other health professionals such as myofibrositis, myofascitis, muscular rheumatism, fibrositis, and generalized musculoligamentous strain. Fibromyalgia is not a form of arthritis, since it is not associated with joint inflammation.

“Definition by American College of Rheumatology (ACR) is considered as ‘suitable for research purpose’ i.e. the presence of unexplained widespread pain or aching, persistent fatigue, generalized morning stiffness, non-refreshing sleep & multiple tender point.” Fibromyalgia as being part of a

wider spectrum encompassing headache, irritable bladder, spastic colitis, painful menstrual periods, temperature sensitivity, atypical patterns of numbness and tingling, exercise intolerance, and complaints of weakness in addition to persistent fatigue, stiffness, and non-restoring sleep. Rheumatologists recognize two types of fibromyalgia: Primary & Secondary.

The cause of primary fibromyalgia syndrome is unknown, but it can be induced by trauma, infection, stress, inflammation, or other factors. Secondary fibromyalgia occurs when a primary condition, such as hypothyroidism or lupus, creates a concomitant fibromyalgia, the treatment of which may make the syndrome disappear. In both the types, the syndrome is characterized by pain amplification, musculoskeletal discomfort, and systemic symptoms. Fibromyalgia Syndrome is sensitive to smell, sound, light & vibrations:

- Noise emitted by fluorescent light can drive them crazy.
- FM syndrome sensitizes nerve ending, which means that the ends of the nerve receptors have changed shape. E.g.-body might interpret “touch, light” or “sound” as “pain”.

Regional forms of fibromyalgia are called regional myofascial syndrome or myofascial pain syndrome. The etiology and pathophysiology of FM are complex since they involve various biological, psychological and social factors. This is a difficult diagnosis to make since the classification, diagnostic criteria are still in flux, and there are no specific clinical or laboratory signs associated with this condition.

RISK FACTORS:

- ✓ Age: Fibromyalgia can affect people of all ages, including children. However, most people are diagnosed during middle age and you are more likely to have fibromyalgia, as you get older.
- ✓ Lupus or Rheumatoid Arthritis: If you have lupus or rheumatoid arthritis (RA), you are more likely to develop fibromyalgia. Some other factors have been weakly associated with the onset of fibromyalgia, but more research is needed to see if they are real. These possible risk factors include:
 - Sex: Women are twice as likely to have fibromyalgia as compared to men.
 - Stressful or traumatic events, such as car accidents, post-traumatic stress disorder (PTSD), repetitive injuries. Injury from repetitive stress on a joint, such as frequent knee bending.
 - Illness (such as viral infections)
 - Family history
 - Obesity
 - Females: The disorder appears to be more prominent in women (between the ages of 25 and 60) than in men – comprising up to 90% of cases diagnosed.
 - Family history: Relatives with similar symptoms or who have been diagnosed with fibromyalgia themselves have been noted in those with the condition. Related or similar health conditions such as rheumatoid arthritis or osteoarthritis, and even lupus can sometimes lead to the development of fibromyalgia.
 - Complications, which can arise, include disturbed sleep or lack of sleep, sleep apnea or insomnia.
 - The inability to effectively function at work, school or in your personal (home) life.
 - The development of mood disorders, such as anxiety or depression.

CLINICAL SIGNS & SYMPTOMS:

i. Pain-widespread pain. Patients use descriptive terms such as aching, burning, gnawing, smarting, or throbbing. Tender points are common in myofascial planes.

ii. Fatigue (prominent feature of fibromyalgia; which is defined as physical or mental exhaustion or weariness)

iii. Muscular symptoms or signs Aching in the muscles, or myalgias, in the upper or lower back and neck areas. Myalgias are usually present on both the right and left sides and present as a dull, throbbing discomfort. Lack of Endurance

iv. Soft tissue and joint problems: pain usually emanates from the soft tissues, muscles, and joints No damage or inflammation of joints, but it can produce joint complaints; aching in their joints, or arthralgia’s & stiffness. (Arthritis, especially osteoarthritis, and a few have autoimmune disorders such as lupus or rheumatoid arthritis with a secondary fibromyalgia can develop). Stiffness in the late afternoon and early evening. Rheumatologists use the term gelling to denote the jello-like feeling of the stiff, tightened joints, muscles, and soft tissues of fibromyalgia.

v. Recurrent headaches, two types:

- a) **Tension headaches** (muscular contraction headaches) Patients describe these headaches as a dull “tight band around the head”.
- b) **Migraines** (much more common) in fibromyalgia patients who have ANS dysfunction. They complain of a throbbing or aching on one side of the head.

vi. Vertigo

vii. Fevers

viii. Swollen or Tender Glands

ix. Cognitive Impairment or brain fatigue [Serious, obvious cognitive dysfunction is uncommon, found in less than 5% of fibromyalgia patients.]

x. Skin complications: Skin itself is tender to touch. A manifestation of widespread allodynia, or heightened pain perception, this discomfort is present in more severe cases and is especially prevalent in patients taking steroids.

Prevalence (%) of frequently observed symptoms and signs in fibromyalgia

Symptom & Signs	Percentage (%)
Widespread pain with tender points	100
Generalized weakness, muscle and joint ache	80
Unrefreshing sleep	80
Fatigue	70
Stiffness	60
Tension headaches	53
Painful periods	40
Irritable colon, functional bowel disease	40

Symptom & Signs	Percentage (%)
Subjective numbness, swelling, tingling	35
Skin redness, lace-like red skin mottling	30
Complaints of fever	20
Complaints of swollen glands	20
Complaints of dry eyes	20
Subjective significant cognitive dysfunction	20
Significant psychopathology	5-5
Nocturnal myoclonus, restless legs syndrome	15
Female urethral syndrome, irritable bladder	12
Vulvodynia or vaginismus	10
Concomitant reflex sympathetic dystrophy	5

EVALUATION & DIAGNOSIS:

The 1990 ACR criteria for fibromyalgia

1. *History of widespread pain.*

Definition: Pain is considered widespread when all of the following are present: pain in the left side of the body, pain in the right side of the body, pain above the waist and pain below the waist. In addition, axial skeletal pain (cervical spine or anterior chest or thoracic spine or low back) must be present. In this definition shoulder and buttock, pain is considered as pain for each involved side. “Low back” pain is considered lower segment pain.

2. *Pain in 11 of 18 tender point sites on digital palpation.*

Definition: Pain, on digital palpation, must be present in at least 11 of the following 18 tender point sites:

Occiput: Bilateral, at the suboccipital muscle insertions.

Low cervical: bilateral, at the anterior aspects of the intertransverse spaces at C5-C7.

Trapezius: Bilateral, at the midpoint of the upper border.

Supraspinatus: Bilateral, at origins, above the scapula spine near the medial border.

2nd rib: Bilateral, at the second costochondral junctions, just lateral to the junctions on upper surfaces.

Lateral epicondyle: Bilateral, 2 cm distal to the epicondyles.

Gluteal: Bilateral, in upper outer quadrants of buttocks in anterior fold of muscle.

Greater trochanter: Bilateral, posterior to the trochanteric prominence.

Knees: Bilateral, at the medial fat pad proximal to the joint line.

For a tender point to be considered “positive”, the subject must state that the palpation was painful. Widespread pain must have been present for at least 3 months. The presence of a second clinical disorder does not exclude the diagnosis of fibromyalgia.

The criteria endorsed in 1990 by the American College of Rheumatology (ACR), for diagnosis of fibromyalgia were:

1. Widespread pain of at least 3 months’ duration (this rules out viruses or traumatic insults that resolve on their own).

2. Pain in all four quadrants of the body: right side, left side, above the waist, below the waist.
3. Pain occurring in at least 11 of 18 specified “tender” points (as shown in the figure) with at least one point in each quadrant.
4. Pain defined, in this context, as discomfort when 8 pounds of pressure are applied to the tender point.
5. Tender points usually occur in a specific distribution. For instance, 8 of the 18 tender points are in the upper back and neck area, and only 2 are below the buttocks. The reader should be aware that tender points can occur almost anywhere in the body; the ACR criteria simply represent the most common 18 points.

MANAGEMENT:

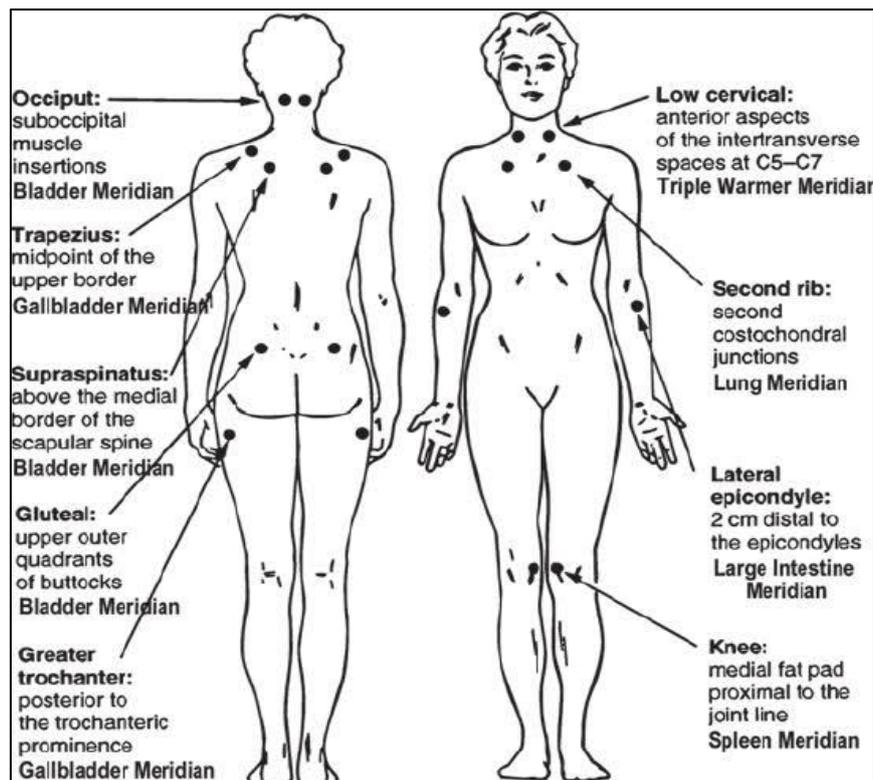
There is no single best treatment option for the wide spectrum of symptoms of Fibromyalgia Syndrome. Accordingly, a multidisciplinary approach combining these therapies in a well-balanced program may be the most promising strategy and is currently recommended in the treatment of fibromyalgia [4-7].

While medication mainly focus on pain reduction, physical therapy is aimed at disease consequences such as pain, fatigue, deconditioning, muscle weakness and sleep disturbances and other disease consequences [3].

Aerobic exercise:

The intensity of the aerobic exercise should be between 40% and 80% of the maximum heart rate or at a perceived exertion level between 9 and 15 on the Borg scale [8].

NOTE-It should be noted that exercise can be done without increasing pain if the principles of reducing the amount of eccentric work and working at lower intensity levels are followed [3]. The exercise program involved the whole body and aimed at minimizing eccentric muscle strain [9]. Teaching the patient the nature of eccentric work and initially prescribing stretching followed by activities that minimize eccentric workload will help patients to exercise appropriately [3].



Stretching:

Stretching of neck, shoulders and lower back for 5 ± 15 minutes may help to keep particular muscle groups at a proper length [3].

NOTE- Stretching exercises should be slow and gradual, with smooth, coordinated movements [3].

In very acute phase, gentle massage and passive stretching may be indicated, or application of cold compresses. In the chronic phases, heat (e.g. a shower, bath or dry or moist pads) usually relieves muscle soreness for temporary periods, and is helpful before a stretching program [3].

Heat Therapy:

The basic therapeutic use of heat is based on analgesia, hyperemia, local and systemic hyperthermia and reduction of muscle tone [3]. Moist hot packs, heat pads, whirlpools, warm showers or baths (at homes).

Massage:

Massage used alone does not promote self-efficacy or increase activity and should rarely be prescribed independently of other therapeutic interventions [3].

Trigger Point Injection:

Some patients with FM also have a myofascial pain syndrome (MPS) with active trigger points that contribute to their pain [10]. Injection of lidocaine, dry needling or spray and stretch techniques is commonly used to inactivate a trigger point [11].

NOTE- More than three or four Trigger point injection should not be injected at one time.

The post injection management should always include stretching and other physical therapy or trigger point injection must be used in conjunction with a comprehensive program including stretching exercises, aerobic exercise and functional and vocational restoration [11, 12].

Acupuncture:

There are a number of conditions including FM for which acupuncture may be useful as an adjunct treatment or an acceptable alternative or may be included in a comprehensive management program [14].

TENS:

Since FM is a characterized by generalized musculoskeletal pain it is obvious that the use of TENS is limited [3].

The effectiveness of TENS depends on proper instruction and monitoring of its use [14].

Aquatic exercise:

Aerobic exercises, warm up & cool-down periods and relaxation exercises are common features of hydrotherapy programs.

Treatment duration of 60 minutes, frequency of three sessions per week can be implemented [15].

Extracorporeal shockwave treatment:

In a multidisciplinary approach, Radial Shockwave Therapy appears to be a safe and effective early adjunctive therapy in patients suffering from FM.

In Fibromyalgia patients, radial Radial Shockwave Therapy for treating the myofascial component of pain with a radial treatment of 1000e1500 pulses on each tender or trigger point, at 2 bar intensity and 10 Hz frequency.

In all the cases, ESWT should be accompanied by a comprehensive supervised exercise program [16].

Life-style Changes & Home:

- a) Avoiding overloading activities in activities of daily living and at work
- b) Avoid forward-stooped shoulders, or drooped head. Instruct the patient in correct sitting and standing posture as well as reading position [17].
- c) Correct sleeping posture, Poor sleeping posture, especially with pillows that hyperflex the neck,

have been described as contributing to symptoms [18]. This situation can be improved by the use of a neck support in FM patients [19].

- d) Conditioning weak muscles - Instruct the patients how to condition weak muscle groups, taking into account the different responses to eccentric and concentric exercises. Eccentric exercise produces significantly greater symptoms of delayed muscle soreness than activities, which involve a lesser degree of eccentric work [20]. Thus, Eccentric are minimized or avoided as much as possible.
- e) Avoiding inactivity and establish appropriate periods of rest [3].
- f) Instruct patients in the use of heat at home.

There are a number of different forms of applying heat (i.e. hot packs, heat lamps; hydrotherapy in different forms: hot baths, contrasts baths, sauna baths) [21].

DIFFERENTIAL DIAGNOSIS [22]

<i>Common conditions and disorders that can mimic fibromyalgia</i>
Hormonal imbalances
Menstrual disorders
Low thyroid, high parathyroid levels
Pregnancy
Adrenal insufficiency
Diabetes
Menopause
Infections
Bacteria
Viruses
Fungi
Parasites
Musculoskeletal or autoimmune disorders
Rheumatoid arthritis
Ankylosing spondylitis in females
Seronegative spondyloarthropathies
Lyme disease
Systemic lupus erythematosus
Palindromic rheumatism
Inflammatory bowel disease
Polymyalgia rheumatica
Neurologic disease
Multiple sclerosis
Myasthenia gravis
Malignancy
Substance abuse
Malnutrition
Primary psychiatric disorders
Allergies

***Myofascial pain syndrome (MPS)*:**

One of the condition which has very similar presentation like Fibromyalgia Syndrome. Myofascial pain syndrome (MPS) is defined as a series of sensory, motor, and autonomic symptoms caused by a stiffness of

the muscle, caused by hyperirritable nodules in musculoskeletal fibers, known as myofascial trigger points (MTP), and fascial constrictions.

It is a musculoskeletal disorder with local pain and stiffness, characterized by the presence of hyperirritable palpable nodules in the skeletal muscle fibers, known as myofascial trigger points (MTP).

Trigger points

Unlike tender points, trigger points can and do refer pain to other parts of the body.

The trigger point is an exquisitely sore point that not only hurts where it is pressed, like an FMS tender point, but it also “triggers” a referred pain pattern to somewhere else in the body.

Trigger point symptoms:-

1. Painful lumps of hardened fascia, due to the constriction of blood and other fluids. Ropy bands are often easier to feel along the arm and legs.
2. If nerve passes through a muscle between the ropy band or when a nerve lies between the band and bone, the pressure on the nerve can produce numbness, but only in the area of compression.
3. Test which is helpful to identify whether there is nerve entrapment or not? If ice feels better- a sign of nerve entrapment. If heat relieves pain and ice, make it worse - no nerve entrapment.
4. Pain from trigger points is usually steady, dull, deep and aching.
Intensity can range from mild discomfort to incapacitating torture.

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