Fibromyalgia

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Chad S. Boomershine

Diagnosis

1990 American College of Rheumatology (ACR) Classification Criteria [1]

- Developed to identify subjects for research studies, later applied to clinical diagnosis but 2010 and 2011 diagnostic criteria have largely supplanted it (see below)
- Requires widespread pain (axial plus upper and lower segment plus left- and right-sided pain) for 3 months or more in combination with pain to palpation at 11 or more of the 18 specific tender point sites
- Eighteen tender points located bilaterally at suboccipital muscle insertions, midpoint of upper border of trapezius, above medial border of scapular spines, upper outer quadrant of buttocks, anterior aspect of intertransverse space of C5-7, second costochondral junctions, 2 cm distal to lateral epicondyles, posterior to trochanteric prominence, medial fat pad proximal to joint line in knees [2]
- Tender points palpated using thumb pad applying 4 kg pressure for 4 seconds

2010 ACR Diagnostic Criteria [3]

- Developed specifically for clinical diagnosis and also to provide a symptom severity scale
- Diagnosis requires all three of the following conditions be met:
  - Widespread pain index (WPI) ≥7 and symptom severity (SS) scale score ≥ 5 or WPI 3–6 and SS scale score ≥ 9.
    - WPI is total number of areas in which patient has had pain over the last week including the chest, abdomen, upper back, lower back, and neck and bilateral body areas including the shoulder girdle, upper arm, lower arm, hip, upper leg, lower leg, and jaw.
    - SS scale score is a 0–12 score which is the sum of the severity of symptoms of fatigue, waking unrefreshed, and cognitive symptoms over the past week each on a 0–3 scale where 0 = no problem and 3 = a severe, pervasive, continuous, life-disturbing problem plus the number of general somatic symptoms as determined by the physician where 0 = no symptoms and 3 = a great deal of symptoms.
  - Symptoms have been present at a similar level for at least 3 months.
  - The patient does not have a disorder that would otherwise explain the pain.
    - This provision makes fibromyalgia a diagnosis of exclusion.

C.S. Boomershine, MD, PhD
Rheumatology and Immunology, Vanderbilt University, Nashville, TN, USA
e-mail: fibromd1@gmail.com

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- Must perform thorough evaluation to rule out other disorders.
- If other disorders found, disorder should be successfully treated, and then patient should be reassessed for fibromyalgia if pain persists.

Modification to the ACR 2010 Fibromyalgia Diagnostic Criteria (Fig. 149.1) [4]

- Developed to allow for use of 2010 ACR Diagnostic Criteria utilizing a patient self-report questionnaire without the requirement for an examiner.
- Diagnosis using Modification analogous to 2010 Criteria except physician assessment of number of general somatic symptoms replaced by number of the following symptoms occurring during the previous 6 months: headaches, pain or cramps in the lower abdomen, and depression.
- Patients cannot self-diagnose; diagnosis must be made by a clinician.

Pathophysiology [5]

- Fibromyalgia is primarily a neurologic disorder.
  - Pain results from neurochemical imbalances that lead to "central amplification" of pain characterized by allodynia and hyperalgesia.
    - Fibromyalgia patients have lower levels of neurotransmitters important for descending inhibitory pain pathways including serotonin and norepinephrine.
    - Fibromyalgia patients have higher levels of neurotransmitters involved in ascending excitatory pain pathways including glutamate and substance P.
  - Functional MRI studies have shown that fibromyalgia patients have increased activity in brain areas involved in pain processing.
- Baseline endogenous opioid activity in fibromyalgia patients is increased.
- Endogenous opioid levels are increased.
- Opioid receptor binding is decreased.

Please check (√)Yes or No to indicate whether or not you have had PAIN or TENDERNESS in each area OVER THE PAST WEEK.

Right Side	Yes (1)	No (0)	Trunk	Yes (1)	No (0)	Left side	Yes (1)	No (0)
Jaw			Neck			Jaw		
Shoulder			Upper Back			Shoulder		
Upper Arm			Chest			Upper Arm		
Lower Arm			Abdomen			Lower Arm		
Hip/Buttock			Low Back			Hip/Buttock		
Upper Leg			OFFICE USE ONLY:			Upper Leg		
Lower Leg			Widespread Pain Index (WPI) (0-19)_____			Lower Leg		

Circle the number that best indicates the severity of each symptom OVER THE PAST WEEK
0 = No Problem; 1 = Slight or Mild Problem: Generally Mild or Intermittent; 2 = Moderate: Considerable Problem, Often Present and/or at a Moderate Level; 3 = Severe: Pervasive, Continuous, Life-disturbing problem.

SYMPTOM	No problem	Slight/Mild	Moderate	Severe
Fatigue or Tiredness Through the Day	0	1	2	3
Waking Up Tired or Unrefreshed	0	1	2	3
Trouble Thinking or Remembering	0	1	2	3

Please check (√) Yes or No to indicate whether or not you have experienced any of the following symptoms OVER THE PAST 6 MONTHS.

SYMPTOM	Yes (1)	No (0)
Pain or cramps in the lower abdomen		
Depression		
Headache		

Symptom Severity (SS) Scale (0-12) _____ FM Diagnosed if WPI ≥7 and SS ≥5 or WPI 3-6 and SS ≥ 9

Fig. 149.1 Modified ACR 2010 fibromyalgia diagnostic criteria (Adapted from Wolfe et al. [4])

- This explains why opioids are typically not effective and not recommended for treating fibromyalgia pain.

Presentation

- In addition to widespread pain, fibromyalgia patients typically present with multiple other problematic symptoms that can be recalled using the FIBRO mnemonic.
  - F = Fatigue, Fog (cognitive difficulty), and poor physical Function
  - I = Insomnia (difficulty with all aspects of sleep: initiation, maintenance and restoration)
  - B = Blues (depression and anxiety symptoms)
  - R = Rigidity (muscle stiffness)
  - O = Ow! (widespread pain)
- In addition to FIBRO symptoms, fibromyalgia patients tend to present with other central sensitivity syndromes including systemic exertion intolerance disease (previously chronic fatigue syndrome), irritable bowel syndrome, chronic low back pain, migraine, restless legs syndrome, temporomandibular dysfunction syndrome, and multiple chemical sensitivity [6].

Treatment [6]

- Effective fibromyalgia management requires an individualized regimen of pharmacologic and nonpharmacologic treatments that address not only pain but all associated FIBRO symptoms [6].
- Nonpharmacologic treatments include stretching, graduated aerobic and resistance exercise, education, and psychological, physical, and manual therapies.
  - Combining education and aerobic and resistance exercise is superior to the use of these modalities in isolation.

Pharmacologic Therapies

Anticonvulsants

- Pregabalin is FDA approved for managing fibromyalgia.
  - Recommend starting with a low dose (25–50 mg) at night.
  - Increase as needed and tolerated up to 225 mg twice daily.
- Gabapentin has been shown to improve fibromyalgia symptoms.
  - Recommend starting with a low dose (100–300 mg) at night.
  - Increase as needed and tolerated up to 800 mg three times daily.
  - Sustained-release preparations can limit side effects and permit once-daily dosing.
- Combining pregabalin or gabapentin with serotonin and norepinephrine reuptake inhibitors (SNRIs) has been shown to improve efficacy and reduce side effects.
- Topiramate may be helpful particularly in patients with migraines and/or obesity.
  - Recommend starting with low dose (25–50 mg) at night.
  - Increase as needed and tolerated up to 200 mg twice daily.
  - Sustained-release preparations can limit side effects and permit once-daily dosing.

Antidepressants

- Duloxetine is FDA approved for managing fibromyalgia.
  - Available in 20, 30, and 60 mg capsules, may be taken morning or night
  - Fibromyalgia approved dosing up to 60 mg per day, may increase up to 120 mg per day if needed and tolerated
- Milnacipran is FDA approved for treating fibromyalgia.
  - Available as 12.5, 25, 50, and 100 mg tablets
  - Recommend starting 12.5 mg once daily with food since frequently causes nausea
  - FDA-approved dosing 50–100 mg twice daily
- Other SNRIs such as venlafaxine, desvenlafaxine, and levomilnacipran are also reasonable options.
- Fluoxetine or paroxetine can be helpful since they have SNRI activity.
  - Start with low dose (10–20 mg) once daily.
  - If used as monotherapy, typically need to use high doses (60 mg/day paroxetine,

80 mg/day fluoxetine) that are usually not well tolerated.
  - Combining with tricyclic antidepressants (TCAs) can allow for efficacy at lower doses with fewer side effects (see below).
  - Newer highly serotonin-selective drugs are typically not helpful for fibromyalgia pain but can help depression and anxiety symptoms.
- TCAs can be helpful including nortriptyline, amitriptyline, and desipramine.
  - Start low dose (10–25 mg) at night.
  - Consider nortriptyline or desipramine first since amitriptyline causes more severe anticholinergic side effects (e.g., dryness, constipation).
  - Effectiveness of TCAs can be increased by combining with fluoxetine or paroxetine.
- Bupropion reduces pain by inhibiting neuronal uptake of norepinephrine and dopamine.
  - Recommend starting at low dose (37.5–75 mg) in the morning.
  - Can increase up to 450 mg per day.
  - Typically avoid night-time dosing or 24 h preparations since they can cause or worsen insomnia.
- Serotonergic 5-HT1A receptor agonists including buspirone, vilazodone, and vortioxetine are alternatives if patients don't tolerate other antidepressants.

Muscle Relaxers

- Cyclobenzaprine is a TCA that has demonstrated efficacy in fibromyalgia
  - Recommend starting with low dose at night (5–10 mg).
  - Can be increased up to 30 mg per day.
  - Sustained-release preparation allows for once-daily dosing.

Tramadol

- While traditional opioids should be avoided, tramadol has been recommended for fibromyalgia treatment since it combines SNRI and mu-opioid agonist activities.
- 1–2 tramadol/acetaminophen 37.5/325 mg tablets taken four times daily have been shown to improve pain, stiffness, and work interference in fibromyalgia patients.
- Also available as single-ingredient 50 mg immediate-release and 24 h extended-release tablets up to 300 mg.
- Maximum per day dosing 400 mg.

Medications to Avoid

- Benzodiazepines should be avoided since they can worsen nonrestorative sleep and cognition and have high addiction potential.
- Opioids other than tramadol should typically be avoided since they can paradoxically worsen pain by increasing central sensitization.
  - Due to increased central sensitization, patients can become dependent on opioids as discontinuation can dramatically worsen pain.
  - Opioids should be tapered off very slowly in fibromyalgia patients.
- Steroids are typically not helpful and should not be used as primary therapy.
- Nonsteroidal anti-inflammatory drugs (NSAIDs) are not helpful for the majority of patients and should not be used first line.

References

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