Learn the latest treatment strategies and multidisciplinary management options for patients with acute and chronic pain.
Fibromyalgia and Myofascial Pain

Jeffrey M. Thompson MD
Disclosure

• Relevant Financial Relationship(s)
  • None

• Off Label Usage
  • Trazodone – generic
  • Nortriptyline - generic
Learning Objectives

• Describe the evolution of the muscle pain syndromes
• Compare and contrast the diagnostic criteria for fibromyalgia and myofascial pain
• Describe several current theories of the etiology of widespread muscle pain
• Outline a treatment approach to widespread muscle pain
Different Names for Widespread Pain

- Chronic nervous exhaustion
- Fibrositis
- Fibromyositis
- Muscular rheumatism
- Neurasthenia
- Myofascial pain
- Psychogenic rheumatism
- Tension myalgia
Muscle Pain Syndrome Family Tree

1700s  Musculoskeletal pain

1800s  Muscle pain (muscular rheumatism)  Joint pain (rheumatism)

1904  Fibrositis (Gowers/Stockton)  localized and regional

1940s  Myofascial pain (local pain)

1970s  Fibrositis redefined widespread pain (Smythe/Modolfsky)

1980s  Fibromyalgia

1990  American College of Rheumatology Criteria
Myofascial Pain Criteria

- Tender nodule within a taut band
- Reproduction of the patient’s pain on palpation
  - Other criteria: twitch response, “jump” sign, pain referral pattern
- Criteria used (even in research) are variable and none have been studied for reliability

Fibromyalgia
1990 criteria

• History of widespread pain for at least 3 months
  • pain on both sides of the body
  • pain above and below the waist
  • axial skeletal pain

• 11 of 18 tender points on palpation
  • occiput - second rib
  • low cervical - lateral epicondyle
  • trapezius - lateral gluteal
  • supraspinatus - greater trochanter
  • knee
Fibromyalgia
Need for new criteria

• 1/3 of rheumatologists do not use the 1990 criteria in clinical practice

• 25% of patients being treated by rheumatologists for fibromyalgia do not meet criteria

New clinical criteria were proposed that do not include tender points

• The combination of multiple areas of pain (widespread pain index) and significant associated symptoms (symptom severity scale) sufficient

Areas of Pain = Widespread Pain Index (WPI)

Score = 0 - 19
Which of these symptoms have you **frequently** experienced in the **past 6 months**?

<table>
<thead>
<tr>
<th>Headache</th>
<th>Loss of/change in taste</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMJ symptoms</td>
<td></td>
</tr>
<tr>
<td>Muscle weakness</td>
<td>Heart burn</td>
</tr>
<tr>
<td>Numbness/tingling of extremities</td>
<td>Nausea</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>Loss of appetite</td>
</tr>
<tr>
<td>Dry eyes</td>
<td>Bowel cramps</td>
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<tr>
<td>Hair loss</td>
<td>Frequent loose stools</td>
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<tr>
<td>Hearing difficulties</td>
<td>Constipation</td>
</tr>
<tr>
<td>Ringing in the ears</td>
<td>Cold intolerance</td>
</tr>
<tr>
<td>Lightheadedness</td>
<td>Heat intolerance</td>
</tr>
<tr>
<td>Sense of imbalance</td>
<td>Multiple sensitivities (lights, sounds, smells, foods, medicines)</td>
</tr>
<tr>
<td>Palpitations</td>
<td>Rash</td>
</tr>
<tr>
<td>Chest discomfort</td>
<td>Sun sensitivity</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>Hives</td>
</tr>
<tr>
<td>Wheezing</td>
<td>Easy Bruising</td>
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<tr>
<td>Increased sweating</td>
<td>Decreased sex drive</td>
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<tr>
<td>Bladder cramps</td>
<td>Nervousness</td>
</tr>
<tr>
<td>Frequent urination</td>
<td>Difficulty falling asleep and staying asleep</td>
</tr>
<tr>
<td>Pain or cramps in lower abdomen</td>
<td>Depressed mood</td>
</tr>
<tr>
<td>Dry mouth</td>
<td></td>
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<tr>
<td>Oral ulcers</td>
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</table>

**Symptom score part one:**

- 1-13 = 1
- 14 – 26 = 2
- >26 = 3
Symptom score part 2:

For each of the symptoms below, indicate the level of severity over the past 7 days using the following scale:

0 = no problem
1 = slight or mild
2 = moderate
3 = severe

_____ Fatigue
_____ Waking unrefreshed
_____ Cognitive symptoms
2010 Fibromyalgia Diagnostic Criteria (modified)

- Widespread Pain Index (WPI) ≥ 7 (out of 19)
- Symptom Score (SS) ≥ 5 (out of 12)

OR

- WPI 3-6 and SS ≥ 9

The sum of both numbers (WPI + SS; 0-31) is the fibro severity scale or “fibromyalgianess” scale (aka polysymptomatic distress scale PSD)

http://www.jrheum.org/content/early/2011/01/27/jrheum.100594
Fibro Outcome Measures

The revised fibromyalgia impact questionnaire (FIQR) is better for measuring severity (and therefore outcomes) than the “fibromyalgianess”/polysymptomatic distress scale (PSD).

J Rheumatol 2015;42;2404-2411
http://fiqrinfo.ipage.com/
FIQR Questions (0-10 scale)

**Functional domain:** For each of the following 9 questions check the box that best indicates how much your fibromyalgia made it difficult to perform each of the following activities during the past 7 days. If you did not perform a particular activity in the last 7 days, rate the difficulty for the last time you performed the activity. If you can’t perform an activity, check the last box.

1. Brush or comb your hair
2. Walk continuously for 20 minutes
3. Prepare a homemade meal
4. Vacuum, scrub or sweep floors
5. Lift and carry a bag full of groceries
6. Climb one flight of stairs
7. Change bed sheets
8. Sit in a chair for 45 minutes
9. Go shopping for groceries

**Overall domain:** For each of the following 2 questions, check the box that best describes the overall impact of your fibromyalgia over the last 7 days:

10. Fibromyalgia prevented me from accomplishing goals for the week
11. I was completely overwhelmed by my fibromyalgia symptoms
FIQR Questions (0-10 scale)

- **Symptom Domain** For each of the following 10 questions, select the box that best indicates your intensity of these common fibromyalgia symptoms over the past 7 days

  - 12. Please rate your level of pain
  - 13. Please rate your level of energy
  - 14. Please rate your level of stiffness
  - 15. Please rate the quality of your sleep
  - 16. Please rate your level of depression
  - 17. Please rate your level of memory problems
  - 18. Please rate your level of anxiety
  - 19. Please rate your level of tenderness to touch
  - 20. Please rate your level of balance problems
  - 21. Please rate your level of sensitivity to loud noises, bright lights, odors and cold

**Scoring:** Function/3 [30 max] + Overall [20 max] + Symptoms/2 [50 max] = 0-100
Epidemiology

• widespread pain as defined by ACR90 found in 11.2% of adult population in Northern England
  • About equal among men and women
• In Olmsted County prevalence by survey 6.4%; diagnosed FM 1.1%

Arthritis care & research. 2013 May; 65(5): 786-92
Etiology

Unknown
Is There Something Wrong with the Muscles?

• No consistent, specific pathology on muscle biopsy
The “Taut Band” of Myofascial Pain

MRE showing “stiffness gradient”

Normal upper trapezius

Upper trapezius with taught band
Is it just a sleep disorder?

- Poor sleep often a factor (but present in any pain disorder)
- Very difficult to improve symptoms unless "restorative sleep" is obtained
Are You Sure it isn’t Just “All in Their Head”? 

• Your pain is all in your head too 

• At the far end of the spectrum there is more psychopathology (as with any chronic pain) and there is an increased incidence of suicide
Central Sensitization

- Increased connectivity in networks involved in pain processing
- Decreased connectivity in networks involved in pain inhibition
- These are reversed by cognitive behavioral therapy
- Electro-convulsive therapy (ECT) and repetitive transcranial magnetic stimulation (rTMS) improve the pain of FM independent of anti-depressant effect (in a few case reports).
Etiology – Still Unknown

• Twin study: 50% genetic, 50% environmental
• Seems to start with muscle pain secondary to “dysfunction”
• Many different “triggers” for the muscle dysfunction
  • Viral illness, surgery, MVA, extreme psychosocial stress
• The more chronic and widespread the pain is, the more central sensitization plays a role
• At the far end of the spectrum it becomes indistinguishable from other causes of “chronic pain syndrome”
Treatment Approaches
Widespread Pain requires multi-pronged approach

• Take the time to explain the diagnosis
  • Just having a diagnosis may reduce medical resource utilization

• Let them know what it isn’t
  • screening labs for muscle pain include CBC, ESR, CK, sTSH, Vit D level, [ANA, Rheum factor, EMG if clinically indicated]
Reassurance

• Give the patient the responsibility to control their symptoms

• Cognitive-Behavioral Therapy (CBT) often very effective
  • Catastrophizing increases activity in brain areas associated with attention to pain
Treatment of Sleep Disturbance

• The goal is restorative sleep - number of hours may not tell the whole story

• Also consider sleep apnea and restless legs syndrome - a formal sleep study may be warranted

• Trazodone 25-50 mg one hour before sleep with gradual increase to 100-150 as needed to restore restful sleep (improved pain similar to newer agents)

• Amitriptyline/Nortriptyline starting at 10 - 25 mg is another option
Treatment of stress/anxiety/depression

- If concomitant clinical depression is present overall improvement is not likely until this is treated
  - The dual re-uptake inhibitors (serotonin & norepinephrine) thought to be most effective in pts with depression and pain (duloxetine [Cymbalta™ - now generic as well]; nortriptyline [generic] venlafaxine [generic])

- Stress management classes can be helpful
  - Anger and sadness increase sensitivity to pain

- Be careful with support groups
Improve Aerobic Fitness & Strength

• Gradual introduction of a low impact program such as walking, swimming, stationary cycling
• Avoid weight lifting/heavy resistance training
• Avoid co-contraction
• Higher levels of aerobic fitness, flexibility and strength have consistently been associated with less pain in fibromyalgia

Arth Care and Research, Vol 67: 11; November 2015, 1561–1570
PM R 2012;4:889-893
Approved medications for Fibromyalgia

- Pregabalin [______] start 75mg at night; target dose 300 -450 mg per day
- Duloxetine [_______, others] start 30 mg/d; target dose 60 – 120 mg per day
- Milnacipran [_______] start 12.5 mg/d; target dose 50 mg twice a day
- Treatment response expected in 2-4 weeks

## Medications Alone Almost Never Sufficient

<table>
<thead>
<tr>
<th>Drug (reference)</th>
<th>Number of RCTs/participants</th>
<th>30% pain reduction true drug vs. placebo (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duloxetine [17]</td>
<td>5/1,884</td>
<td>46.8 vs. 34.0</td>
</tr>
<tr>
<td>Milnacipran [17]</td>
<td>5/4,110</td>
<td>36.4 vs. 28.1</td>
</tr>
<tr>
<td>SSRIs [20]</td>
<td>7/414</td>
<td>36.4 vs. 20.6</td>
</tr>
<tr>
<td>TCAs [20]</td>
<td>9/542</td>
<td>48.3 vs. 27.8</td>
</tr>
<tr>
<td>Pregabalin [22]</td>
<td>5/3,259</td>
<td>40.0 vs. 29.1</td>
</tr>
</tbody>
</table>

Other Drugs shown useful for Fibromyalgia

• Gabapentin (________) [anti-epileptic, neuropathic pain drug]

• Pramipexole (_______) [Parkinson’s, restless legs]
Drugs not to use long term

• Opioids
• NSAIDs
Treatment for Those with Chronic Pain Syndrome or Widespread Allodynia

• Cognitive-behavioral program in a Pain Rehabilitation Center

• Recent reviews for primary care physicians:
  • Mayo Clinic Proceedings, May 2012, 87: p488
Questions & Discussion