

Fibromyalgia

Joanna G Katzman, MD, MSPH

Director, UNM Pain Center and Project ECHO
Chronic Pain Program

Original Author: Arthur D. Bankhurst, M.D.
Chief, Division of Rheumatology, School of Medicine, University of New Mexico

Case Study

- **A 45-year-old woman presents with diffuse muscle pain, weakness, and significant fatigue.**
- **Symptoms for over 3 years that have become slightly worse in past 6 months. Generalized pain and fatigue that limit her ability to work.**
- **Increasing sleep difficulty due to the pain Denies major depression or anxiety but increasingly frustrated by symptoms and lack of a diagnosis.**
- **Previously suffered from migraine but no major headaches since menopause**
- **Told that she had irritable bowel syndrome 3 years ago**

Case Study (cont)

- **General physical examination is unremarkable**
- **Diffuse muscle tenderness is noted**
- **Some tenderness around the joints, but no synovitis**
- **No objective muscle weakness**
- **Normal neurologic examination**
- **CBC, ESR, and chemistry profile are normal**

Fibromyalgia Controversies

- Is it real?
- Can it be reliably diagnosed?
- Is it physical or psychological?
- Is there any effective treatment?
- Is a diagnosis helpful or harmful?

Problems in Defining Fibromyalgia

- “Real” if no clear pathophysiologic basis?
- Gold standard is “expert opinion.”
- Tender points, symptoms are subjective.
- Fewer than 11 tender points?
- Symptoms are not dichotomous.
- Same diagnostic criteria and dilemma for any illness lacking objective biologic markers (depression, migraine, IBS, CFS).

Functional Somatic Syndromes

Rheumatology	Fibromyalgia
Gastroenterology	Irritable bowel
Neurology	Tension headache
Infectious Disease	Chronic fatigue
Gynecology	Chronic pelvic pain
Cardiology	Non-cardiac chest pain
Urology	Irritable bladder (ICS)
Allergy	Multiple chemical sensitivity
ENT	TMJ

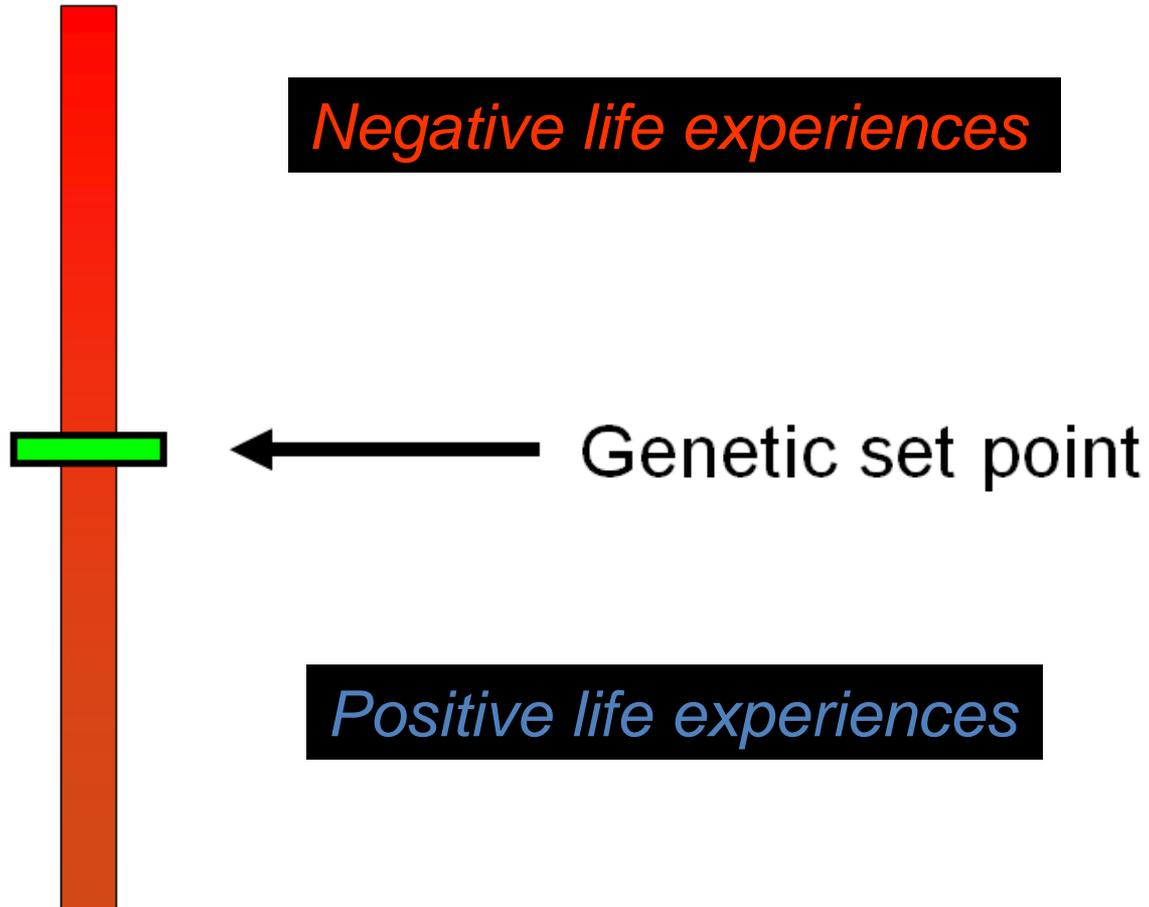
FMS and Mood Disorders

- At the time of FMS diagnosis, mood disorders are present in 30-50%, primarily depression.
- Increased prevalence of mood disorders is primarily in tertiary-referral patients.
- Increased lifetime and family history of mood disorders in FM vs RA (Odds = 2.0).
- FMS aggregates in families and co-aggregates with mood disorders. Odds of having FMS in relatives is 8.5 in FMS vs RA proband (Arnold, et al 2003).

Genetic Factors in Fibromyalgia

- Familial predisposition
 - Arnold¹ found that if an individual has fibromyalgia there is >8 odds ratio (OR) for first-degree relatives to develop fibromyalgia
- Candidate Genes
 - 5-HT_{2A} receptor polymorphism T/T phenotype²
 - Serotonin transporter³
 - Dopamine D4 receptor exon III repeat polymorphism⁴
 - COMT (catecholamine o-methyl transferase)⁵
 - Heterozygous beta-3 adrenergic receptor allele⁶

Stress Susceptibility



Is there any effective management of fibromyalgia?

- **All patients**
 - **Reassurance re diagnosis**
 - **Give explanation, including, but not solely, psychological factors**
 - **Promote return to normal activity, exercise**
- **Most patients**
 - **Medication trial (esp antidepressants, anticonvulsants)**
 - **Cognitive behavior therapy, counseling**
 - **Physical rehabilitation**

Medications in FMS

- Strong evidence for efficacy:
 - Amitriptyline, 25-50 mg at bedtime
 - Cyclobenzaprine, 10-30 mgs at bedtime
 - Pregabalin, 300-450 mg/day
 - Gabapentin, 1600-2400 mg/day
 - Duloxetine, 60-120 mg/day
 - Milnacipran, 100-200 mg/day
- Modest evidence for efficacy:
 - Tramadol, 200-300 mg/day
 - SSRIs (fluoxetine, sertraline)

Medications in FMS (cont)

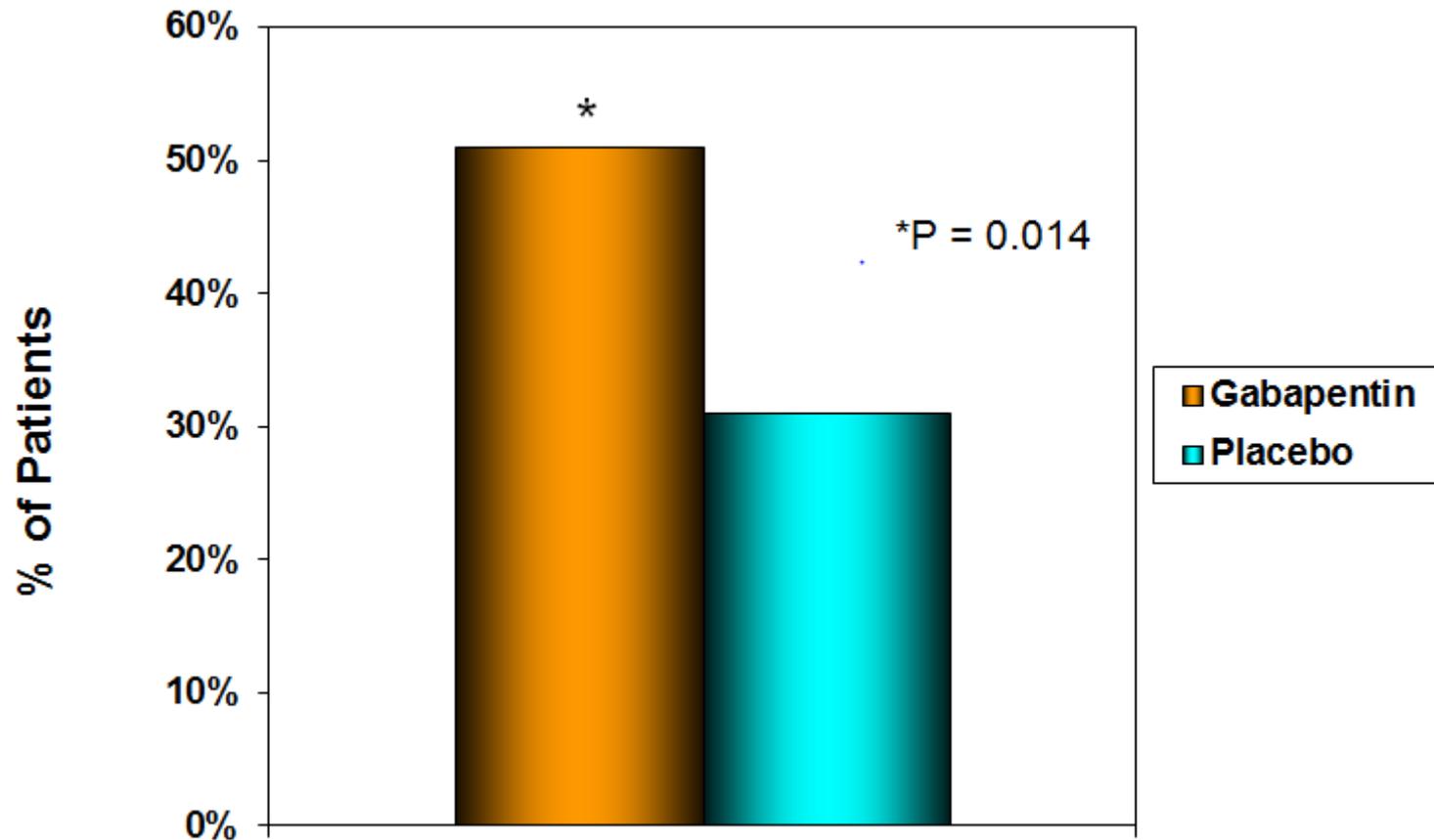
- Weak evidence for efficacy: pramipexole, gamma hydroxybutyrate, growth hormone, 5-hydroxytryptamine, tropisetron, s-adenosyl-methionine.
- No evidence: opioids, NSAIDS, benzodiazepene and nonbenzodiazepene hypnotics, melatonin, magnesium, DHEA, thyroid hormone, OTC including guaifenesin.

Modified from Goldenberg, et al: Management of fibromyalgia syndrome. JAMA 2004; 292:2388-95.

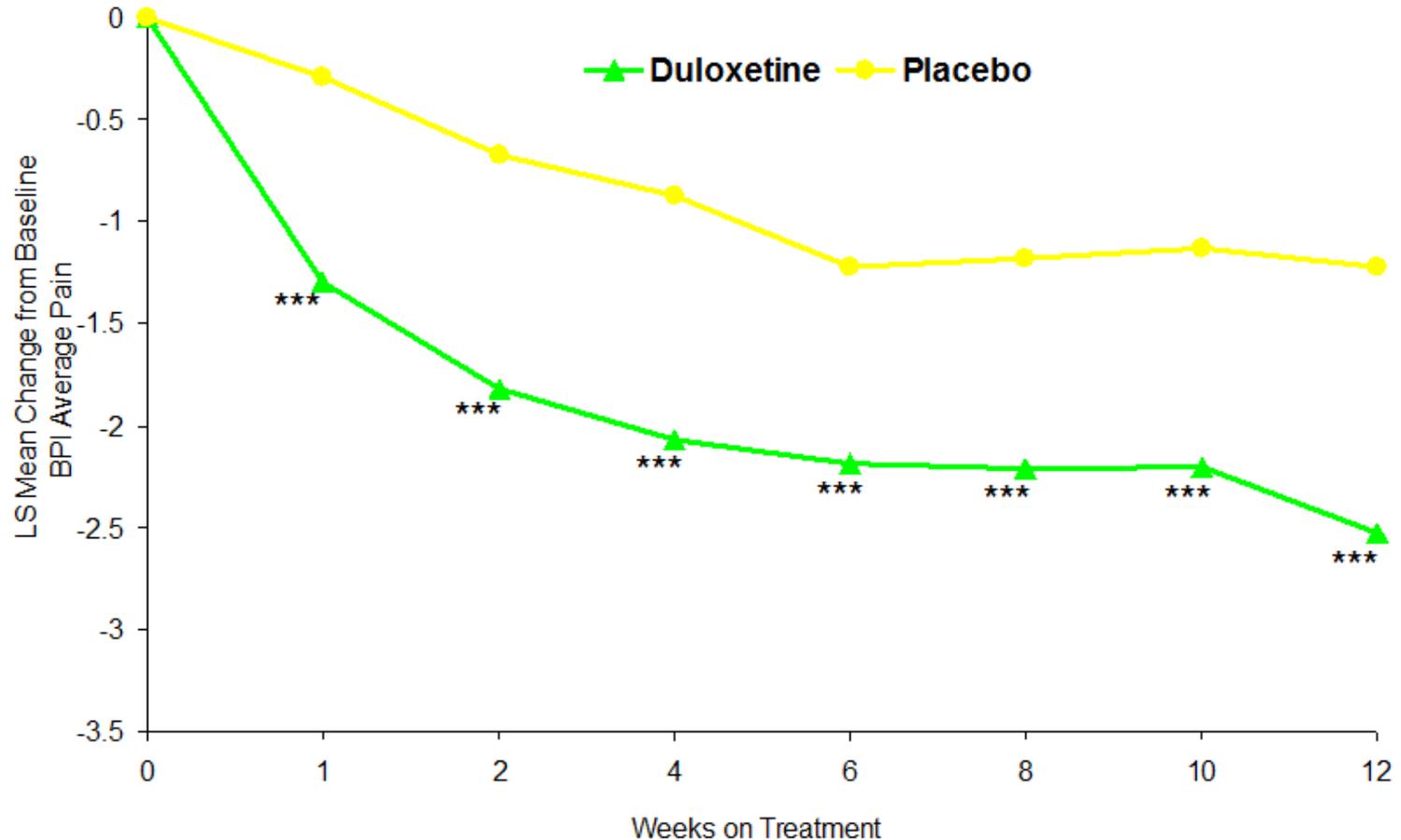
New Fibromyalgia Treatment Approaches

- Combination antidepressants (SSRI+TCA)
- Individualized dosing (fluoxetine)
- Dual reuptake inhibitors (venlafaxine, duloxetine, milnacipran)
- Antiepileptics (gabapentin, pregabalin)
- Patient subsets treated differently
- Combine non-medicinal with drug therapies
- Multi-disciplinary programs

Gabapentin in FM: 30% Reduction on BPI Pain Severity Score

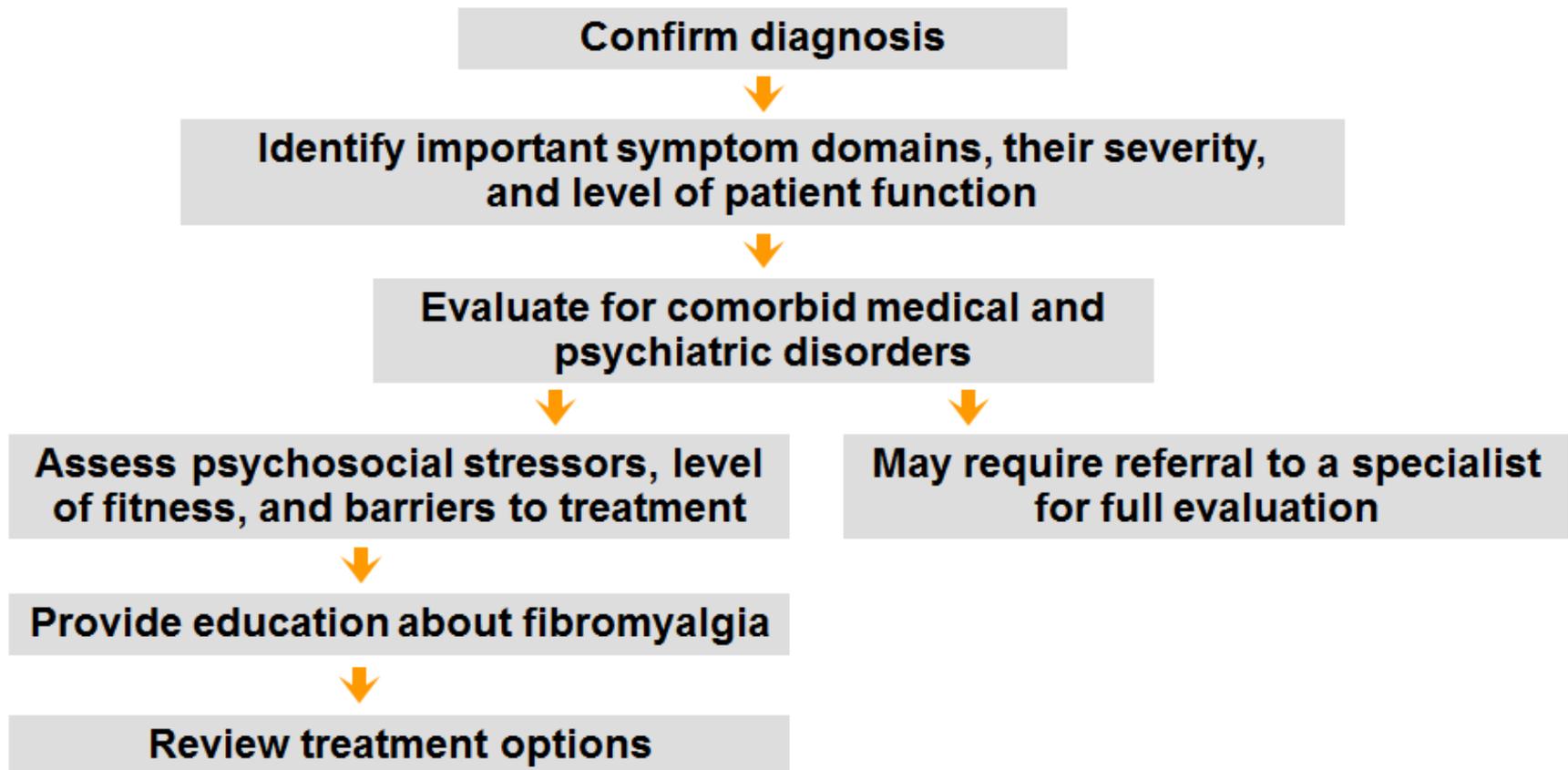


Changes in the Brief Pain Inventory Average Pain Severity Score: Duloxetine vs. Placebo



Arnold LM, et al. J Women's Health 2007;16:1145-1156

Stepwise Treatment of Fibromyalgia



Stepwise Treatment of Fibromyalgia (cont)

As a first-line approach for patients with moderate to severe pain, trial with evidence-based medications



Provide additional treatment for comorbid conditions



Adjunctive CBT for patients with prominent psychosocial stressors, and/or difficulty coping, and/or difficulty functioning



Encourage exercise according to fitness level

Therapies with No to Mixed Evidence in Fibromyalgia

No Evidence

- NSAIDs
- Corticosteroids
- Opiates
- Chiropractic
- Trigger or tender point injections
- TENS units

Mixed Evidence

- SSRIs
- Acupuncture
- Massage
- Strength exercises
- Hypnosis
- Biofeedback
- Balneotherapy

Why isn't FM outcome better with current medical care?

- Long delay in diagnosis, initial therapy.
- Patients are often led to believe they have an intractable disease for which treatment options are limited.
- Need Individual Rx plan with active patient participation.
- Patient subsets.
- Often best handled with multidisciplinary care.

Subgroups of FM Patients

Group 1 (n=50)

- Low depression/anxiety
- Not very tender
- Low catastrophizing
- Moderate control over pain

Psychological factors neutral

Group 2 (n=31)

- Tender
- High depression/anxiety
- Very high catastrophizing
- No control over pain

**Psychological factors
worsening symptoms**

Group 3 (n=16)

- Extremely tender
- Low depression/anxiety
- Very low catastrophizing
- High control over pain

**Psychological factors
improving symptoms**

Does the FM diagnostic label promote helplessness and disability?

- **Recent studies: Diagnostic label is helpful.**
- **Diagnosis should be reassuring and end doctor shopping.**
- **Only if diagnosis is coupled with education.**
- **Causation: issue is contentious.**