Recognizing and Treating Fibromyalgia in Primary Care

Long Beach, CA

October 11, 2008
2:45 PM – 4:00 PM
Session 11: Recognizing and Treating Fibromyalgia in Primary Care

Learning Objectives

- Understand the basic anatomy, physiology, and brain regions involved in pain and the systemic consequences of undertreated pain conditions.
- Utilize your knowledge of the neurobiology of pain to further appreciate the clinical relevance of early recognition and comprehensive treatment of fibromyalgia.

Faculty
Jon W. Draud, MS, MD
Private Practice Physician,
Heritage Medical Associates, PC
Medical Director, Psychiatry and Addiction Medicine Services
Baptist Hospital
Nashville, Tennessee

Jon W. Draud, MS, MD, is currently in the private practice of psychopharmacology and adult psychiatry at Heritage Medical Associates, PC. He is also medical director of Psychiatry and Addiction Medicine Services at Baptist Hospital, and he is on the clinical faculty in the Department of Psychiatry at Vanderbilt University in Nashville, Tennessee.

Dr Draud received his MS in pharmacology and his MD at the University of Kentucky in Lexington. He received postgraduate medical education at Vanderbilt University Medical Center in Nashville, where he completed a residency in psychiatry. A diplomate of the American Board of Psychiatry and Neurology, Dr Draud is a member of the American Psychiatric Association, American Medical Association, and the American Academy of Psychiatry and Law. He is active in teaching medical students and residents, and he has delivered over 1500 professional lectures to medical personnel. Dr Draud serves on numerous advisory boards, is an active, national-level speaker for several companies, and is involved in research activities at Vanderbilt University.

Additionally, Dr Draud has been involved in design and implementation of 4 separate neurobiology projects, including disease states of depression, bipolar disorder, insomnia and pain. Most recently, he was appointed by the MJ consulting group to its Neuroscience Advisory Council and is one of the 4 founding members of the Integrative Neurobiology Educational Institute, which is a nationally based “think tank” aimed at raising public awareness about the neurobiological underpinnings common among many psychiatric disease states.

Faculty Financial Disclosure Statement
The presenting faculty reported the following:
Dr Draud has no relationships to disclose.

Drug List

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<td>amitriptyline</td>
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<td></td>
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<td>milnacipran</td>
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Suggested Reading List


Recognizing and Treating Fibromyalgia in Primary Care

Jon W. Draud, MD, MS
Medical Director of Psychiatry and Addiction Medicine, Baptist Hospital, Nashville, TN

Presentation Across Pain States Varies

Nociceptive Pain
Pain caused by injury to body tissues (musculoskeletal, cutaneous or visceral)1

Mixed Pain
Pain with neuropathic and nociceptive components

Neuropathic Pain
Pain initiated or caused by a primary lesion or dysfunction in the nervous system (either peripheral or central nervous system)2

Fibromyalgia & Its Neurobiology: A Primer for Primary Care Clinicians

1. Normal and Abnormal Pain Processing
2. Inflammatory Cytokines and Pain
3. HPA Axis Abnormalities in Pain

Introduction to the Pain Circuit – Body-Brain Link

Chronic Pain can lead to ‘Re-wiring’ of the Pain Circuit - Further Facilitating Abnormal Pain

Change in synaptic connectivity and loss of inhibition


Giordano J, Ohayon MM. Neuropsychobiology 2003;47:122-129

*All pain is to some extent inflammatory in nature. It happens after a tissue injury, surgery or in response to a pathological condition. Postoperative wound pain

Common descriptors:

aching
applying
burning
dull
faint
irritating
mild
numbing
piercing
searing
stinging
thirsting
uncomfortable

Examples:

- Pain from a traumatic injury that is related to a fracture.
- Pain from a medical condition.
- Postoperative wound pain.

Common descriptors:

aching
shock
sharp
stinging

Examples:

- Low back pain with radiculopathy.
- Cervical radiculopathy.
- Carpel tunnel syndrome.

Common descriptors:

aching
burning
cold
numbing
painful
pricking
tingling
uncomfortable

Examples:

- Hypersensitivity to touch or cold.
- Sensitivity to heat or cold.
- Sensitivity to mechanical, chemical, or thermal stimuli.
- Sensitivity to a particular type of stimulus.

Prevalence of Chronic Painful Physical Conditions (CPPCs) by Age Group and Gender

Prevalence of CPPCs

- Men (N = 315)
- Women (N = 296)

Age Group

Prevalence of CPPCs

15–24
15–29
25–44
45–64
≥ 65

9.4
13.5
16.5
19.4
28.5

P < .0001

Primary Care Clinicians Primary Care Clinicians

1. Normal and Abnormal Pain Processing
2. Inflammatory Cytokines and Pain
3. HPA Axis Abnormalities in Pain
Fibromyalgia as a Mind-Brain-Body Condition: Importance of Considering the Whole Person

Fibromyalgia may be associated with gray matter changes

FMS may be associated with elevation in inflammatory cytokines

Increased inflammatory cytokines in FMS patients

Brain areas involved in pain processing

fMRI Evidence of Central Sensitization in FM

Magnetic resonance imaging (MRI) studies show cortical/subcortical augmentation of pain processing in FM.
Pain - a Complex Issue in Centrally Medicated Pain Disorders


Genetic predisposition
Neuroendocrine-immune dysfunction
Physical trauma/Peripheral nociception
Psychological factors/Stress
Infections/Inflammation
Neonatal/Childhood trauma
Other factors

Hyperexcitement of central neurons
Environmental Noise/Chemicals/Others

CSS
ANS dysfunction

Goal of Treatment: Targeting Sensory, Emotional, & Neurodegenerative Processes

Needs are - a) provide early and prolonged pain relief
b) have peripheral and central effects
c) have neuroprotective effects
d) protect against neurodegenerative effects
e) modulate cytokines/immune responses

Fibromyalgia – an Introduction

- Fibromyalgia (FMS): common, chronic pain disorder characterized by widespread pain and somatic sx
  - Prevalence in industrialized countries, ~2%-4%
  - Most common rheumatologic disorder after osteoarthritis
  - More common in women (as with most pain disorders) than men
  - Prevalent in all ethnic groups

1: Immunologic
2: Psychiatric
3: Rheumatologic
4: Neurologic

Risk Ratio of Various Co-morbidities (Psychiatric and Non-Psychiatric) with Fibromyalgia

Odds Ratio (compared to those without Fibromyalgia)

“Ring of Fire”: Odds Ratio of Co-morbidities In A Common Pain Condition - Fibromyalgia


What are the Goals of Treatment When helping a Patient with Pain?

Assessing for Fibromyalgia

The American College of Rheumatology Criteria for the Classification of Fibromyalgia

- History of widespread pain has been present for at least 3 months
- Pain is considered widespread when all of the following are present:
  - Pain in both sides of the body
  - Pain above and below the waist
  - Pain in 11 of 18 tender point sites on digital palpation

Fibromyalgia (FMS): Laboratory Testing to Rule Out Other Medical Conditions

- Basic Lab Panel – CBC, Chemistry, LFTs, Electrolytes, Thyroid panel
- If indicated, more detailed Rheumatology work-up is appropriate – ESR, Protein electrophoresis, CPK, CRP, etc (consider getting a consult)

A Step Approach to A Patient with Fibromyalgia

- Confirm Diagnosis
- Create an Individualized Treatment Plan
- Consider Adjunctive Treatment Option

A Primary Care Clinician’s Diagnostic Paradigm for FMS

- Suspect fibromyalgia in all patients reporting significant pain/fatigue symptoms
- Conduct the ACR examination on all such patients (takes only minutes, and it is approximately 85% sensitive and specific for FMS)
- Carefully screen for comorbidities: consider mood disorder, anxiety disorders, eating disorders, substance use disorders, etc.
- Consider referral to PCP for full medical evaluation and necessary lab testing—create a treatment plan

Fibromyalgia – Associated Symptoms

- Other symptoms of FMS:
  - Fatigue
  - Nonrefreshing sleep
  - “Fibro fog” (ie, difficulty concentrating)
- Comorbid conditions:
  - Localized pain syndromes (eg, noncardiac chest pain, headache)
  - Irritable bowel syndrome
  - Temporomandibular disorder
  - Chronic fatigue syndrome

Fibromyalgia – Differential Diagnosis

- Myofascial pain syndrome
- Chronic fatigue syndrome: may overlap with FMS
- Hypothyroidism
Which of the following are FDA-indicated for treatment of fibromyalgia?

1: Duloxetine
2: Pregabalin
3: Venlafaxine
4: 1 and 2
5: All of the above

Non-Pharmacological Treatment Options in Fibromyalgia

- Education about the nature of fibromyalgia (e.g., central sensitization and other central pain processes, interaction between emotions, behavior and cognition in coping and functioning)
- Realistic goal setting for work or work-like activities, social activities, and involvement with family and friends
- Relaxation training (e.g., progressive muscle relaxation training, controlled diaphragmatic breathing)
- Appropriate behavioral pacing of activities to not overdo or underdo activity levels

Key elements of cognitive behavioral therapy for fibromyalgia (cont.)

- Identification of dysfunctional thought patterns and techniques to counter negative automatic thoughts, and the underlying maladaptive attitudes or beliefs fueling these thoughts
- Communication skills training, to enhance appropriate assertiveness and allow a corresponding release of tension from controlling and bottling up negative thoughts and feelings, and enhance interactions with health-care providers and others
- Strategies for acquisition, maintenance, and generalization of skills
- Strategies for relapse prevention and for managing painful flare-ups

Long Term Benefits of Psychotherapy in Fibromyalgia (12 month follow-up data)

Key elements of cognitive behavioral therapy for fibromyalgia:

- Clinically significant reduction of pain
- Clinically significant increase of pain
Exercise in Fibromyalgia: A Meta-analysis of Studies

% Worsening 0 % % Improvement

-1.6 17.1

Tender Point Pain Pressure Threshold

-7.0 28.1

Improvement in Pain

-1.6 11.4

Control Group  Exercise Intervention Group

Busch, AJ et al., Cochrane Database, 2002, Issue 2

Pharmacological Treatment Option in Fibromyalgia

Antinociceptive Effects of Antidepressants

Trials Reporting Positive Antinociceptive Effect, %

-0.5 0.0 0.5 1.0 1.5

Outcome Measure

TCAs in Fibromyalgia: Wide Spectrum of Action

Effect Size (Standard Deviation)

Outcome Measure

Pregabalin: FDA-Approved Treatment

Least Squares Mean Pain Score

Week

Base-Line 1 2 3 4 5 6 7 8 End-Point

Placebo  Pregabalin 150 mg/day  Pregabalin 300 mg/day  Pregabalin 450 mg/day

Crofford, LJ et al., Arthritis & Rheumatism. Vol. 52. No. 4, April 2005 (1264–1273)

Mode of action of α2δ Ca++ channel modulators

α2δ voltage-dependent Ca++ channel subunits tend to be expressed on membranes of sensitized neurons. Their modulation may influence neurotransmitter (glutamate) release.

Fluoxetine (SSRI) in Fibromyalgia


12 Week study
Placebo n = 30
Fluoxetine n = 30 (dose 10-80 mg/day)

*p = .005

No statistical separation between placebo and fluoxetine on number of tender points or total myalgia scores

Fluoxetine is not FDA-approved for fibromyalgia

Rostroventral medulla
(5-HT)

Dorsal root ganglion

Descending Pathways

Dorsolateral pontine tegmentum (NE)

Neurobiology of Serotonin & Norepinephrine
Their Importance in Pain Modulation


Venlafaxine (SNRI) in Fibromyalgia

Sayer, K et al., Annals of Pharmacotherapy 2003; Nov; 37 (1561–1565)

Open label, Venlafaxine fixed dose = 75 mg
n = 15

Venlafaxine is not FDA-approved for fibromyalgia

Sayer, K et al., Annals of Pharmacotherapy 2003; Nov; 37 (1561–1565)

Fibromyalgia: Duloxetine Effective in non-depressed and depressed patients


Fluoxetine, Amitriptyline, & Combination in the Treatment of Fibromyalgia


Milnacipran (SNRI) In Fibromyalgia

Milnacipran is not FDA-approved for fibromyalgia

Milnaipran BID, n=51 (dose = 200mg/day) ; Placebo n=28; 3 month study

These medications are not FDA-approved for fibromyalgia

Always consider adding exercise, spirituality, meditation, psychotherapy, etc. to pharmacotherapy

Using the '4- Ds' for Optimum Outcomes with Medications

- Dose
- Duration
- Drug
- Diagnosis