Integrative Medicine Approach to Chronic Pain

Nov 14, 2018

Integrative Medicine & Community Nutrition Symposium
Community Healthcare Network
Raymond Teets, MD
My story

- Integrative Family Medicine in FQHC
- Board Certified in Family Medicine
- Institute for Family Health

- Educator in Integrative Medicine
- Icahn School of Medicine at Mount Sinai
- Mount Sinai Downtown Residency in Urban Family Medicine Faculty
- Integrative Medicine Fellowship
- Interprofessional Program in Integrative Health
My story

- Integrative Family Medicine in FQHC
- Board Certified in Family Medicine
- Institute for Family Health

- Educator in Integrative Medicine
- Icahn School of Medicine at Mount Sinai
- Mount Sinai Downtown Residency in Urban Family Medicine Faculty
- Integrative Medicine Fellowship
- Interprofessional Program in Integrative Health
Objectives

- To understand an integrative approach to chronic pain
- Become familiar with the evidence for non-pharmacological modalities to treat chronic pain
- Become familiar with supplements with evidence for chronic pain
- Become familiar with wellness approaches for chronic pain
Stakes and Scope

Common clinical conditions
- Lower back pain
- Osteoarthritis
- Chronic neck pain
- Headache
- Chronic pain NOS

Chronic pain is... common
- Opiates are out
- NSAIDs and other medicines carry risks
- Lots of our patients are suffering
Integrative Medicine

- Patient-centered approach
- Lifestyle medicine
  - Diet, movement, habits, stress-coping
- Conventional medicine combined with Complementary and Alternative Medicine (CAM)
- Informed by evidence
Patient D.M.

- 59 y/o male with CAD, DM, HTN, lower back pain, knee osteoarthritis, elevated trigs and Major Depression
  - Uncontrolled A1c, tends to be between 8-9%
  - Blood pressure borderline control (150/92)
  - MI 1.5 years ago, echo done 1 month ago normal
  - Meds: Lantus 10 units at night, metformin 1000 mg bid, HCTZ 25 mg daily, lisinopril 40 mg, atorvastatin 80 mg daily
  - Doesn’t take any supplements except occasional MVI
  - Doesn’t always take meds, insurance lapses, not much money
59 y/o male with CAD, DM, HTN, lower back pain, knee osteoarthritis and Major Depression

- Lives alone, on disability, no kids, sister lives in NYC who he talks to frequently
- Nutrition: opportunistic at best, poor historian
- Doesn’t exercise other than some walking
- Has never tried acupuncture, chiropraxy, etc.
- Asks for help on his knee and back pain
- “Ibuprofen and tylenol doesn’t work” 😞
- “I’m in a lot of pain”
Process: how do we help with chronic pain both for us and our patients

How to create some optimism?

Opportunities for empowerment

3 “types” of patients

- Those who will jump at self-help opportunity
- Those who won’t jump today but will in future
- Those who just won’t... ever

Attempt at “authentic conversation”
Specific IM questions

- Dietary supplements?
- Any CAM use?
- What do you do for movement?
- What do you do for calming / stress relief?

Nutrition:
- Any foods you avoid?
- 24 diet history
- Do you cook?
Integrative Treatments
# Integrative Pain Tx

<table>
<thead>
<tr>
<th>APPROACH</th>
<th>BACK PAIN</th>
<th>FIBROMYALGIA</th>
<th>OA KNEE</th>
<th>NECK PAIN</th>
<th>HA / MIGRAINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acup</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Massage</td>
<td>+++,-</td>
<td>++</td>
<td>+++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relaxation</td>
<td></td>
<td>+++</td>
<td></td>
<td></td>
<td>+++</td>
</tr>
<tr>
<td>Spinal Manip</td>
<td>mixed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OMM</td>
<td>mixed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tai Chi</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Yoga</td>
<td>++++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Nahin 2016)
Fibromyalgia evidence
- Yoga
- Relaxation
- Normalization of vitamin D
  - No clear benefit to extra-supplementation for vitamin D

OA of knee
- Acupuncture
- Massage
- Tai Chi

Massage has evidence for tx
- Lower back pain, neck pain, OA of knee

Florian 2014
Chronic pain guidelines

- Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians (Qaseem 2017)
  - Sponsored by AHRQ (Agency for Healthcare Research and Quality)
  - Looking to provide guidelines based on effectiveness and safety for primary care
  - Systematic Review of the evidence
## ACP Chronic Low Back Pain

<table>
<thead>
<tr>
<th>MODALITY</th>
<th>CONTROL</th>
<th>EFFECT ON PAIN</th>
<th>EFFECT ON FUNCTION</th>
<th>LEVEL OF EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture</td>
<td>No acupuncture</td>
<td>moderate</td>
<td>moderate</td>
<td>moderate</td>
</tr>
<tr>
<td>Exercise</td>
<td>Usual care / no</td>
<td>small</td>
<td>small</td>
<td>moderate</td>
</tr>
<tr>
<td></td>
<td>exercise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBSR</td>
<td>Usual care</td>
<td>improved</td>
<td>improved</td>
<td>moderate</td>
</tr>
<tr>
<td>Nsaisds</td>
<td>Placebo</td>
<td>moderate to</td>
<td>small to none</td>
<td>moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>small</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong opioids</td>
<td>Placebo</td>
<td>small</td>
<td>small</td>
<td>moderate</td>
</tr>
<tr>
<td>Duloxetine</td>
<td>Placebo</td>
<td>small</td>
<td>small</td>
<td>moderate</td>
</tr>
<tr>
<td>Tramadol</td>
<td>Placebo</td>
<td>moderate</td>
<td>small</td>
<td>moderate</td>
</tr>
</tbody>
</table>

Qaseem 2017
<table>
<thead>
<tr>
<th>MODALITY</th>
<th>CONTROL</th>
<th>EFFECT ON PAIN</th>
<th>EFFECT ON FUNCTION</th>
<th>LEVEL OF EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture</td>
<td>No acupuncture</td>
<td>moderate</td>
<td>moderate</td>
<td>moderate</td>
</tr>
<tr>
<td>Exercise</td>
<td>Usual care / no exercise</td>
<td>small</td>
<td>small</td>
<td>moderate</td>
</tr>
<tr>
<td>MBSR</td>
<td>Usual care</td>
<td>improved</td>
<td>improved</td>
<td>moderate</td>
</tr>
<tr>
<td>Nsaids</td>
<td>Placebo</td>
<td>small</td>
<td>small to none</td>
<td>moderate</td>
</tr>
<tr>
<td>Strong opioids</td>
<td>Placebo</td>
<td>small</td>
<td>small</td>
<td>moderate</td>
</tr>
<tr>
<td>Duloxetine</td>
<td>Placebo</td>
<td>small</td>
<td>small</td>
<td>moderate</td>
</tr>
<tr>
<td>Tramadol</td>
<td>Placebo</td>
<td>moderate</td>
<td>small</td>
<td>moderate</td>
</tr>
</tbody>
</table>

Qaseem 2017
## Lower quality evidence

<table>
<thead>
<tr>
<th>MODALITY</th>
<th>CONTROL</th>
<th>EFFECT ON PAIN</th>
<th>EFFECT ON FUNCTION</th>
<th>LEVEL OF EVIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor control exercise (spine)</td>
<td>Minimal intervention</td>
<td>moderate</td>
<td>small</td>
<td>low</td>
</tr>
<tr>
<td>Multidisciplinary rehab</td>
<td>Usual care</td>
<td>moderate &amp; small</td>
<td>small</td>
<td>low</td>
</tr>
<tr>
<td>Progressive relaxation</td>
<td>Wait-list</td>
<td>moderate</td>
<td>moderate</td>
<td>low</td>
</tr>
<tr>
<td>Tai chi</td>
<td>Wait list or no tai chi</td>
<td>moderate</td>
<td>small</td>
<td>low</td>
</tr>
<tr>
<td>Yoga</td>
<td>Usual care</td>
<td>moderate</td>
<td>moderate</td>
<td>low</td>
</tr>
<tr>
<td>Yoga</td>
<td>Education</td>
<td>small</td>
<td>moderate</td>
<td>low</td>
</tr>
</tbody>
</table>

Qaseem 2017
Acupuncture and Pain

✚ Chronic pain most common presentation for therapy

✚ Heavily studied for pain
  ● One systematic review found 29 RCT’s with 17,922 subjects
  ● At least 4 weeks in duration
    ● Back pain
    ● Shoulder pain
    ● Chronic headaches
    ● Osteoarthritis

Vickers 2012
Acupuncture

- Systematic review (25 good quality studies) of benign lower back pain
  - Adults age 17 to 90
  - Chronic: lasting longer than 6 weeks
  - Treatment duration ranged from 1 treatment to 20 treatments
  - Overall, acupuncture provided meaningful pain response

Lam 2013
Acupuncture

- Evidence good for common chronic pain ailments & effect may last significantly longer than time of treatment (Macpherson 2016)

- Of note, Lam 2013 points out (via ACP) that “moderate evidence” when compared without sham; low-level evidence when compared with sham

- Risk is very low

- Recommended by Joint Commission as a modality
Dose of treatment needed?
- Unclear – common number of treatments between 6 and 12, done weekly
- Practitioners best to do it? Not important, all practitioners (MD’s, DOs, L.Acs) equivalent for pain

Access
- Physicians can bill in traditional system and not worry about procedural billing
- Some insurances covering acupuncture benefit now
- Acupuncture students can provide low-cost treatments

Good safety profile, minimal contraindications
Mindfulness Based Stress Reduction (MBSR)

- Mind-body approach, form of meditation
- Focus on increasing awareness and acceptance of momentary experiences, even emotional and physical difficulties
- Developed by Jon Kabat-Zinn, not intended to be religious
- Standardized program
Also incorporates yoga, “body scan”

One program with favorable results chronic lower back pain:
- 8 weeks of group format, 2 hours each
- Not all participants attended all 8 sessions
- Participants encouraged to do homework

Improvement in function and pain seen at week 8
- Sustained results through week 52

Cherkin 2016
MBSR & LBP

- Results equivalent to Cognitive Behavioral Therapy (Cherkin 2016)
- Unclear optimal dose
- How important group work?
- Adverse effects low
- How to introduce to your patients
Manipulation Therapy

- Scope of practice for Chiropractors and Osteopaths
- Good evidence for Tx of chronic lower back pain
- Tx not limited to “high-velocity” therapies
- Insurance covers chiropraxy in some instances
- Osteopaths struggle with reimbursement making manipulation feasible

Nahin 2016
Often therapies not covered by insurance

Requires knowing local community resources

There are CAM practitioners who are interested in underserved

- Group acupuncture in community
- Schools (PCOM, Tristate, Swedish Institute)
Dietary supplements

Therapies for chronic pain
Dietary supplements

In the eyes of the law: legal category created in 1994 by Dietary Health Supplements Act ➔ neither food nor pharmaceutical
- Regulated by FCC regarding truth claims
  - Makers of glucosamine can claim “good for joint health,” but not “helpful for OA” regardless of research

Under the Department of Health and Human Services (HHS)
- Food and Drug Administration (FDA)
- Center for Disease Control (CDC)
- Centers for Medicare & Medicaid Services (CMS)
Secretary of HHS can issue regulations around Good Manufacturing Processes (GMP)

- Based on food GMPs, not drug GMPs: less stringent than pharmaceuticals, expiration dates on supplements
- Supplement can be pulled from the shelf (eg, Ephedra)

Natural Medicines Database
- Made by folks who publish Prescriber’s Letter

Consumerlab.com
- Does testing of supplements
  - Quality
  - Toxicity
- Identifies comparable prices as well

Pull research studies with transparency
Osteoarthritis
Dietary supplements
Ginger (Zingiber officinale)

- Known anti-inflammatory components
  - Pungent ketones including gingerol

- Inhibits cyclo-oxygenase enzymes
  - Enzymes inhibited by ibuprofen / naproxen / NSAIDs in general
  - May be less toxic to the GI tract

- Some evidence in OA
  - Doses at 750 mg to 2 gm equivalent to crude herb
  - Unclear optimal dose

Bartels 2015
Herbs and processing

Distinction of food vs medicine
- Bartels meta-analysis looked at processed ginger root
  - Concentrated forms of ginger
  - Varied in the studies
  - Not the same as eating ginger in cooking or making ginger tea
- Trade-off of more potency vs little more risk (eg, avoid high-dose ginger in pregnancy)
  - Avoid in patients on coumadin
  - More work to be done on drug interactions
- Be clear with patient about specific products
Turmeric

- *Curcuma longa*
- Culinary herb same family as ginger
- Used in traditional medicine *eg*, Ayurvedic medicine
- Root is anti-inflammatory
- Lab data shows inhibit COX-2 and 5-LOX
  - Protecting chondrocytes from the effects of IL-1
  - In patients with osteoarthritis
- Generally low significant side effects

Lopez 2012
Belcaro 2010
Doses ranged from 1-2 grams in many studies
- Amounts as high as 10 grams a day might be safe

Bioavailability of oral turmeric is poor
- Poor stability in intestinal pH
- Low GI absorption.
- Absorption and stability improves when given with piperine (a component of black pepper), or when complexed with phospholipids.

Good safety and efficacy data after 8 months of use

Use with caution in patients on antiplatelet or anticoagulant activity.
S-adenosyl methionine

- AKA “SAM-e”
- Amino acid derived from methionine
- Found endogenously, can be ingested via meat
- Some evidence in treatment of depression and osteoarthritis

Lopez 2012
S-adenosyl methionine

- Mechanism likely via structure-modifying process
  - Proteoglycan synthesis
  - Role in methylation

- Max doses of 1200 mg per day (can start at 200 mg po daily)
  - May take longer to take effect, like glucosamine

- Can have effects for mood (depression), avoid in bipolar but CAN add onto patients taking SSRIs

- More expensive than other supplements

- Product matters, so consult database like Consumerlab.com
Glucosamine sulfate

- Important component of human cartilage
- Produced endogenously
- Mechanism structure-modifying (“disease-modifying” supplement?) for osteoarthritis (OA)
  - Also some anti-inflammatory and anti-catabolic effects in OA
- Usually derived from shellfish exoskeletons
  - “fish allergy” or “iodine allergy?”
Glucosamine sulfate

- Use sulfate salt, NOT the hydrochloride salt
- Possible synergism with chondroitin sulfate (derived from bovine cartilage; also found endogenously)
- Likely need to use for up to 6 months before full evaluation of benefit
- 1500 mg total daily dose glucosamine
- Specific product essential? Industry bias vs ideal product
- Bottom line: Most studies in OA of the knee → arguable benefit
Glucosamine sulfate

- Generally well-tolerated
- Theoretical risk of increasing blood glucose levels → monitor in diabetics
- Not an ideal supplement for vegetarians
Fish oils

Nutrition vs Therapy
Fish oils Review

- Omega 3’s (in contrast to Omega 6’s)
  - Polyunsaturated Fats
    - Sources include fish, flax, walnuts, canola oil
    - *Essential fatty acid* includes **alpha-linolenic acid (ALA)**

- Fish oils provide long chain omega 3s
  - Eicosapentaenoic acid (EPA)
  - Docosahexaenoic acid (DHA)

- Anti-inflammatory mechanism
Fish Oils

- Evidence for improving Rheumatoid Arthritis outcomes (Proudman et al 2015)
- Worthwhile attempt in other inflammatory conditions?
- Doses need to be approximately 2.7 gm daily (equivalent of 6 oz salmon steak daily, but daily salmon not recommended 😞)
  - Concerns of pollution toxicity with eating whole fish
- Lovaza is pharmaceutical fish oil, can be covered by insurance
Wellness & Nutrition

Anti-inflammatory diet
Wellness vs therapeutic

Wellness and supplements

- Omega 3s: As an essential fatty acid (Wellness)
  - Epidemiological nutritional studies tend to suggest that taken in at low levels in the standard American diet
  - Institute of Medicine recommends intake of 1.6 gm of ALA
  - Possible importance of omega 6:3 ratio of 4:1 (but not clear)
  - Omega 6: omega 3 ratio in diet → “good” 4:1, standard American diet tends to be higher

- Ginger and turmeric: taken in as foods, as spices
  - Less potent than what is studied (less concentrated)
  - Often cheaper, safer, with possible effect
What is the anti-inflammatory diet?

- Eating whole foods, emphasis on fish, plant foods for protein
- Eating good fats - use of olive oil as a central cooking fat
- Minimally processed carbohydrates
- Varied fruits and vegetables
- Significant overlap with DASH diet

Moderation, good fats, whole foods, variety
Mediterranean Diet

High in:

- Whole grains
- Legumes (beans)
- Oily fish (omega-3 fats)
- Fruits
- Vegetables
- Walnuts
- Olive oil
Food more than simply calories
- Inflammation to be addressed for general health
- Fats matter, fruits and vegetables matter – diet of what to eat

Good diet for DM and HTN, overlap with DASH diet

Wellness: healthy diet, offers things for patient to do, can begin re-orienting healing ownership
Returning to DM...

- Understanding the personal aspect of the pain
- What are the goals of the patient?
- Specific etiologies / diagnoses / imbalances are at play for DM
  - Low grade inflammation of OA, diabetes physiology may be contributing
  - Depression likely diminishing his ability to cope with pain
  - Low back pain generally not inflammatory process
Engaging the patient

- Likely to jump at suggestions today?
  - Maybe not
  - Broadening discussion
  - Planting seeds

- Long-term relationship

- De-emphasizing role of pharmaceuticals

**Possible options:** acupuncture, yoga, meditation, fish oils, OA dietary supplement, anti-inflammatory diet, cooking with healthy species
“Nonpharmacologic interventions are considered as first-line options in patients with chronic low back pain because fewer harms are associated with these types of therapies than with pharmacologic options.” (Qaseem 2017)
Chronic Pain

- Permissive around lower evidence modalities
- Patient centered: personal resonance of therapies and specific patients
- Offer of hope?
- Brainstorm around therapies that
  - Are accessible
  - Have evidence
  - Non-invasive
Addressing pain beyond pharmaceuticals
- Good evidence
  - Acupuncture
  - Mindfulness
- Weaker evidence but can be safe
  - Yoga
  - Manual manipulation
  - Dietary supplements

Begin dialogue with patients and colleagues
- Start with safer options

Wellness approaches: Nutrition, exercise, stress management
The end

Thanks!