Integrative Medicine Approach to Chronic Pain

Nov 14, 2018

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

Community Healthcare Network

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

Patient D.M.

- 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"

Primary care and 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 for calming / stress relief?
- Nutrition:
  - Any foods you avoid?
  - 24 diet history
  - Do you cook?

Integrative Treatments

Integrative Pain Tx

APPROACH	BACK PAIN	FIBROMYALGIA	OA KNEE	NECK PAIN	HA / MIGRAINE
Acup	++		++		+
Massage	+++, -		++	+++	
Relaxation		++++			++++
Spinal Manip	mixed				
OMM	mixed				
Tai Chi			+		
Yoga	++++	+			

(Nahin 2016)

Therapies and conditions

- 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

MODALITY	CONTROL	EFFECT ON PAIN	EFFECT ON FUNCTION	LEVEL OF EVIDENCE
Acupuncture	**No acupuncture**	moderate	moderate	moderate
Exercise	**Usual care / no exercise**	small	small	moderate
MBSR	**Usual care**	improved	improved	moderate
Nsaids	**Placebo**	moderate to small	small to none	moderate
Strong opioids	**Placebo**	small	small	moderate
Duloxetine	**Placebo**	small	small	moderate
Tramadol	**Placebo**	moderate	small	moderate

Qaseem 2017

Summary ACP

MODALITY	CONTROL	EFFECT ON PAIN	EFFECT ON FUNCTION	LEVEL OF EVIDENCE
Acupuncture	**No acupuncture**	moderate	moderate	moderate
Exercise	**Usual care / no exercise**	small	small	moderate
MBSR	**Usual care**	improved	improved	moderate
Nsaids	**Placebo**	moderate to small	small to none	moderate
Strong opioids	**Placebo**	small	small	moderate
Duloxetine	**Placebo**	small	small	moderate
Tramadol	**Placebo**	moderate	small	moderate

Qaseem 2017

Lower quality evidence

MODAILTY	CONTROL	EFFECT ON PAIN	EFFECT ON FUNCTION	LEVEL OF EVIDENCE
Motor control exercise (spine)	**Minimal intervention**	moderate	small	low
Multidisciplinary rehab	**Usual care**	moderate & small	small	low
Progressive relaxation	**Wait-list**	moderate	moderate	low
Tai chi	**Wait list or no tai chi**	moderate	small	low
Yoga	**Usual care**	moderate	moderate	low
Yoga	**Education**	small	moderate	low

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

Practicalities

- 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

MBSR

- 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

Systems issues

- 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)

Quality & safety

- 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

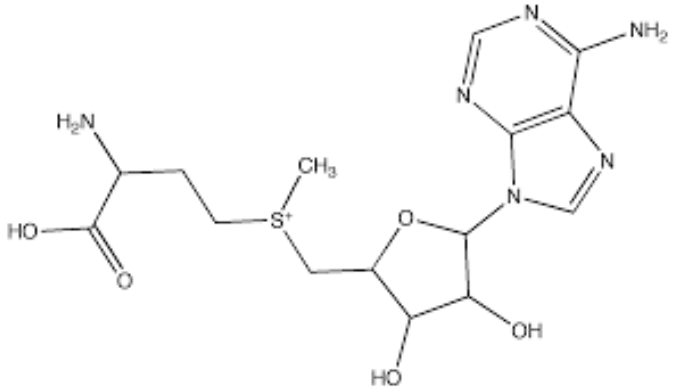
Lopez 2012
Belcaro 2010

Turmeric

- 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

Erikson et al, 2014

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

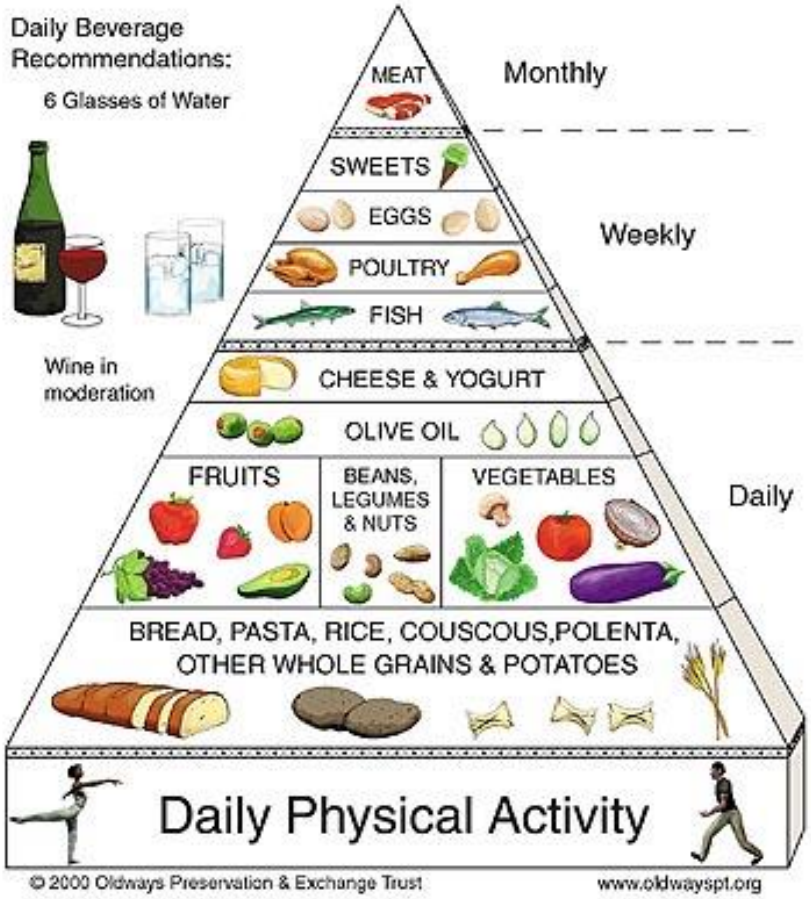
Wellness & Nutrition

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

Anti-inflammatory Diets



Reference: Oldways Preservation, www.oldwayspt.org

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

Broad context

- 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

Integrative Pain Approach

"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

Summary

- 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!