
N. ANTON BORJA, DO, MATCM
DIRECTOR OF INTEGRATIVE MEDICINE CLINIC, ASST. PROFESSOR
DEPARTMENT OF FAMILY MEDICINE,
QUILLEN COLLEGE OF MEDICINE, EAST TENNESSEE STATE UNIVERSITY
I, Neil A. Borja, do not have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.
Learning Objectives

- Discuss the rationale for recommending Integrative medicine therapies in chronic pain management.
- Describe the rationale for recommending Integrative medicine therapies as adjuvant therapy to conventional pharmacotherapy.
- Summarize the research and evidence available for Integrative medicine treatments used in chronic pain management.
- Outline the components of an Integrative medicine treatment plan for a patient with chronic pain.
What's in a name?

- Conventional medicine:
  - Medicine as usually practiced by MDs, and DOs, and other allied health professionals.
  - The kind of medicine most Americans still encounter in hospitals and clinics.
  - Primarily uses synthetic drugs, and surgery to treat symptoms and diseases.

- Alternative medicine:
  - Using a non-mainstream approach instead of conventional medicine (NIH).
What's in a name?

- Complementary medicine:
  - Using a non-mainstream approach together with conventional medicine (*NIH*).
Integrative medicine

- Integrative medicine is healing-oriented medicine that takes account of the whole person (mental, physical, spiritual, community, socio-economic status, etc.) including all aspects of lifestyle.
- It emphasizes the therapeutic relationship between practitioner and patient, is informed by evidence, and makes use of all appropriate therapies both conventional and complementary.
Integrative medicine

- Integrative medicine neither rejects conventional medicine nor accepts alternative therapies uncritically.
- Good medicine is based on good science; inquiry-driven and open to new (and old) modalities.
- Effective interventions that are natural, less invasive, and more cost-effective should be used whenever possible.
- Health promotion and the prevention of illness are paramount.
- Relationship centered care
Andrew Weil, MD

- Director of the Center for Integrative Medicine of the College of Medicine, University of Arizona.
- Created the Fellowship in Integrative medicine at University of Arizona.
- “Father of Integrative medicine.”
Consortium of Academic Health Centers for Integrative Medicine

- 57 Academic medical centers and affiliate institutions
- Mission: Advance the principles and practices of Integrative healthcare within academic institutions
- Academic Centers include:
  - University of Arizona
  - University California Los Angeles (UCLA)
  - University California San Francisco (UCSF)
  - Stanford University
  - Columbia University
Consortium of Academic Health Centers for Integrative Medicine

- Yale University
- George Washington University
- Georgetown
- John Hopkins
- Boston University
- Harvard University
- Duke University
- UNC Chapel Hill
- Vanderbilt
- And many more!!
Consortium of Academic Health Centers for Integrative Medicine

- Maybe one day??

EAST TENNESSEE STATE UNIVERSITY
In December, 2014 NIH, National Center for Complementary and Alternative Medicine (NCCAM) changed its name to:

**National Center for Complementary and Integrative Health (NCCIH).**

NCCIH mission: define, through rigorous scientific investigation, the usefulness and safety of complementary and integrative health approaches and their roles in improving health and health care.
Surveys have found that the use of alternative medicine—unproven practices used in place of conventional medicine—is rare”.

“Integrative health care,...is more common.”

“The use of an integrative approach to health and wellness has grown within care settings across the United States, including hospitals, hospices, and military health facilities.”
Center for Disease Control, under the National Center for Health Statistics annually conducts the National Health Interview Survey (NHIS).

Major source of information on the health of Americans.

Every 5 years, NHIS includes questions about complementary health approaches.

Key Findings from 2012 NHIS:

- **~33% of U.S. adults** used complementary health approaches. (2007/35%, 2002/32%)

- **~12% of U.S. children** used complementary health approaches. (2007/12%)

- Most commonly used complementary approach was natural products (dietary supplements other than vitamins and minerals).
Use of Complementary Health Approaches in the U.S.
National Health Interview Survey (NHIS)

7.8% of U.S. adults (18.8 million) used fish oil/omega 3/DHA, EPA fatty acids

- 7.8% Fish oil/omega 3/DHA, EPA fatty acids
- 2.6% Glucosamine and/or chondroitin
- 1.6% Probiotics/Prebiotics
- 1.3% Melatonin
- 1.3% Coenzyme Q10
- 0.9% Echinacea
- 0.8% Cranberry (pills or capsules)
- 0.8% Garlic supplements
- 0.7% Ginseng
- 0.7% Ginkgo biloba

CAM Use by Age - 2007

CAM Use by Race/Ethnicity Among Adults - 2007

- American Indian/Alaska Native: 50.3%
- White: 43.1%
- Asian: 39.9%
- Black: 25.5%
- Hispanic: 23.7%

Education Level and Type of CAM Used in the Past 12 Months

- Herbal products or dietary supplements:
  - High school or less: 30%
  - Some college: 47%
  - College graduate: 44%

- Massage therapy, chiropractic manipulation, other bodywork:
  - High school or less: 16%
  - Some college: 29%
  - College graduate: 28%

- Mind/body practices:
  - High school or less: 4%
  - Some college: 14%
  - College graduate: 14%

- Naturopathy, acupuncture, homeopathy:
  - High school or less: 3%
  - Some college: 11%
  - College graduate: 6%

*Base: All respondents (n=1,013). Sampling error: ± 3.1 percentage points. Respondents could choose more than one answer.

Source: AARP/NCCAM Survey of U.S. Adults 50+, 2010
Diseases/Conditions for Which CAM Is Most Frequently Used Among Adults - 2002

- Back Pain: 16.8%
- Head or Chest Cold: 9.5%
- Neck Pain: 6.6%
- Joint Pain: 4.9%
- Arthritis: 4.9%
- Anxiety/Depression: 4.5%
- Stomach Upset: 3.7%
- Severe Headache or Migraine: 3.1%
- Recurring Pain: 2.4%
- Insomnia: 2.2%

Diseases/Conditions for Which CAM Is Most Frequently Used Among Adults - 2007

- Back Pain: 17.1%
- Neck Pain: 5.9%
- Joint Pain: 5.2%
- Arthritis: 3.5%
- Anxiety: 2.8%
- Cholesterol: 2.1%
- Head or Chest Cold: 2.0%
- Other Musculoskeletal: 1.8%
- Severe Headache or Migraine: 1.6%
- Insomnia: 1.4%

Use of Complementary Health Approaches in the U.S.
National Health Interview Survey (NHIS)

Diseases/conditions for which complementary health approaches are most frequently used among children—2012

- Back or Neck Pain: 8.9%
- Other Musculoskeletal: 6.0%
- Head or Chest Cold: 5.1%
- Anxiety or Stress: 3.4%
- ADHD: 2.2%
- Insomnia: 1.7%

*Diary supplements other than vitamins and minerals.

THAT'S ODD... MY NECK SUDDENLY FEELS BETTER...

EARLY ACUPUNCTURE
• 2007 Health Care Expenditure: $2.2 trillion (2013 = $2.9).

• Out of Pocket Spending:
  - Conventional Medical Care $268.6 Billion
  - Complementary & Alternative Med. $33.9 Billion
Total self care $22 billion  Practitioner costs $11.9 billion
Out-of-Pocket Costs for Select CAM Therapies*

- Nonvitamin, Nonmineral, Natural Products (Practitioner and Self-Care) $15.4 billion
- Massage (Practitioner) $4.2 billion
- Yoga, Tai Chi, Qi Gong Classes (Self-Care) $4.1 billion
- Chiropractic or Osteopathic Manipulation (Practitioner) $3.9 billion
- Homeopathic Medicine (Practitioner and Self-Care) $3.1 billion

* Totals for nonvitamin, nonmineral, natural products and homeopathy include both CAM practitioner costs and costs of purchasing CAM products. Totals for massage and chiropractic and osteopathic manipulation are only CAM practitioner costs. Totals for yoga, tai chi, and qi gong classes are only the cost of purchasing CAM products.
Chronic pain is associated with impairment of function and quality of life.

Current traditional management using pharmacotherapy, and physical therapy are frequently inadequate to manage chronic pain.

Or pain management = narcotics = can of worms!

Large body of evidence on the benefits of Integrative medicine for chronic pain.
Integrative medicine in chronic pain management

- As previously discussed:
  - 1/3 of adults already use complementary and Integrative medicine.
  - Majority of patients use complementary and Integrative medicine to treat PAIN!
4 Chronic Pain conditions to discuss:
- Migraine Headaches
- Knee Osteoarthritis
- Fibromyalgia
- Low back pain
Diseases/Conditions for Which CAM Is Most Frequently Used Among Adults - 2007

- Back Pain: 17.1%
- Neck Pain: 5.9%
- Joint Pain: 5.2%
- Arthritis: 3.5%
- Anxiety: 2.8%
- Cholesterol: 2.1%
- Head or Chest Cold: 2.0%
- Other Musculoskeletal: 1.8%
- Severe Headache or Migraine: 1.6%
- Insomnia: 1.4%

Pharmacotherapy is conventional management for migraine headaches.

Combination of prophylactic and abortive drugs, e.g. beta blockers with triptans.

For patients who do not experience acceptable control of migraines, or who cannot tolerate adverse effects from pharmacotherapy there are numerous Integrative treatments available.

Integrative medical treatments include biofeedback, butterbur extract and acupuncture.
Biofeedback is defined as ‘a process that enables an individual to learn how to change physiologic activity for the purpose of improving health and performance.’

Patient is seated and connected to computer instrumentation via different probes measuring temperature, blood pressure, pulse, etc.

Learns to modify physiologic function by using mind-body activities like deep breathing, or progressive muscle relaxation.
Migraine Headaches: Biofeedback

- Picture from Brigham Young University, Counseling and Psychological Services.

- 55 Studies (n=2229).
- Biofeedback associated with a short and long term medium effect in patients with migraine, significantly reducing pain and psychological symptoms.
- Biofeedback can be recommended as an alternative treatment for patients with chronic migraine and is suitable for the long-term prevention of migraine attacks.
Butterbur (Petasites hybridus)

Found in the sunflower family in the genus petasites.

Perennial plants with thick rhizomes and large leaves.

AKA Sweet Coltsfoot.

Concluded that a proprietary extract of butterbur is effective in reducing the frequency of episodic migraines.
Migraine Headaches: Butterbur

- Butterbur root extract at dosages of 50 to 150 mg/day has shown strong clinical effect.
- Safe and efficacious to both adults and children.
- Not to be confused with **Butterbeer**: 
Knee Osteoarthritis

- Primarily affects older adults.
- Conventional management includes Non-steroidal anti-inflammatory drugs and joint replacement when severe.
- Integrative treatments for knee osteoarthritis include glucosamine, turmeric, balneotherapy and acupuncture.

Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT) was a multi center RCT of ~1500 patients.

Randomized to 1 of 5 treatments for 24 weeks: chondroitin only, glucosamine only, glucosamine/chondroitin, celecoxib, or placebo.
Placebo group with 60% response rate (pain reduction by 20% or greater) so difficult to show benefit among all groups.

Only celecoxib with marginal outcomes better than placebo after primary trial, but no difference at 2 years.

GAIT used glucosamine hydrochloride, while previous trials, with positive results, used glucosamine sulfate.

Evidence for chondroitin weaker than glucosamine.
Knee Osteoarthritis: Studies evaluating the Rotta preparation (glucosamine sulfate) showed that glucosamine was superior to placebo in the treatment of pain and functional impairment resulting from symptomatic Osteoarthritis.

Knee Osteoarthritis-Turmeric

- Turmeric (*Curcuma domestica*).
- Perennial plant native to southern Asia.
- Widely grown for domestic and medicinal purposes.

- 107 patients randomized to 2 g turmeric or 800 mg ibuprofen daily for 6 weeks.
- In both groups, pain improved when walking or climbing stairs, as well as knee function.
- Turmeric group had improved pain levels when climbing stairs.
Knee Osteoarthritis- Balneotherapy

- The treatment of medical conditions through the use of hot or cold mineral baths.
- Latin: Balneum, “bath”.
- An ancient treatment and one of the oldest, & longest utilized.
Osteoarthritis: Spending time in a mineral bath compared to no treatment may improve pain and quality of life. Spending time in both a sulfur bath and a dead sea bath compared to no treatment may improve pain one month after treatment.

Fibromyalgia

- A complex, and difficult to treat, condition consisting of diffuse musculoskeletal pain which can be disabling.
- Often associated with other symptoms including fatigue, sleep difficulties, cognitive dysfunction ("brain fog"), depressed mood.
- More common in women.
Fibromyalgia

- Conventional management currently includes pharmacotherapy, and psychotherapy including cognitive behavioral therapy (CBT).
- Integrative medicine emphasizes a multi-dimensional approach to fibromyalgia using pharmacotherapy, CBT and the addition of tai chi, mind-body therapies, balneotherapy and acupuncture.
Fibromyalgia - Tai Chi

- A martial art which originated in China.
- A slow, meditative exercise popularly used for health and relaxation.
Fibromyalgia- Tai chi

- 66 patients with fibromyalgia were randomized to tai chi versus wellness education and stretching.
- 44% reduction in pain and other symptoms in tai chi group, no change in control group.
Fibromyalgia- Balneotherapy & Mind-Body Therapies

- Only balneotherapy and mind-body therapies with significant benefit over control groups.
- Mind-body therapies included guided imagery, hypnosis, biofeedback and mindfulness meditation.
70 to 85% of U.S. adults will experience LBP at some time in their lives.

Back pain is the primary reason patients seek out complementary/Integrative medicine treatments.

Conventional management includes symptom treatment using analgesics, physical therapy, and spinal injections.

Integrative medicine therapies which should be considered in chronic back pain include manipulation, massage, and acupuncture.
Osteopathic manipulation: A treatment to diagnose, treat, and prevent illness or injury by moving muscles and joints using techniques including stretching, gentle pressure and resistance.

Chiropractic adjustment: A treatment to restore joint mobility by manually applying a controlled force into joints that have become hypomobile as a result of a tissue injury.

Osteopathic and chiropractic manipulation can involve different variations of hands on therapy, including soft tissue, myofascial, and high velocity.
Chronic low back pain: there is no clinically relevant difference between spinal manipulation and other interventions (standard medical care, exercise therapy or physiotherapy) for reducing pain and improving function in patients with chronic low-back pain. Determining cost-effectiveness of care has high priority.

Low back pain: Massage might be beneficial for patients with subacute and chronic non-specific low-back pain, especially when combined with exercises and education. Acupressure massage may be more effective than classic massage.

**Acupuncture**

- Acupuncture as defined by the NIH:
  - A family of procedures involving the stimulation of points on the body using a variety of techniques.
  - The technique most studied scientifically involves penetrating the skin with thin, solid, metallic needles that are manipulated by the hands or by electrical stimulation.
  - Practiced in China and other Asian countries for thousands of years, acupuncture is one of the key components of traditional Chinese medicine.
Acupuncture History

- Earliest written evidence of Acupuncture 2500 years ago: *Yellow Emperor's Classic of Internal Medicine*, 400 BCE.
- Earliest evidence of Acupuncture are stone needles from 4000-8000 years ago: *Bian stone needles*.
- 1800s, European and American interest in Acupuncture (interest faded in the U.S).
- 1971, NY Times reporter James Reston accompanied Kissinger to China and developed appendicitis. He got an operation & acupuncture and wrote a NY Times article.
Acupuncture
"You gotta be kidding! Your back still hurts?!"
Migraine prophylaxis: Acupuncture is at least as effective as, or possibly more effective than, prophylactic drug treatment, and has fewer adverse effects. Acupuncture should be considered a treatment option for patients willing to undergo this treatment.

**Osteoarthritis:** trials of acupuncture for peripheral joint osteoarthritis suggest statistically significant and clinically relevant benefits which may be due to expectation or placebo effect.

Fibromyalgia: low to moderate-level evidence that compared with no treatment and standard therapy, acupuncture improves pain and stiffness in people with fibromyalgia. Electroacupuncture is probably better than manual acupuncture for pain and stiffness reduction and improvement of global well-being, sleep and fatigue.


- Determine the effect size of acupuncture for 4 chronic pain conditions: back and neck pain, osteoarthritis, chronic headache, and shoulder pain.
- Meta-analysis of 29 of 31 eligible RCTs.
- Total of 17,922 patients analyzed.
Results: In the primary analysis acupuncture was superior to both sham and no-acupuncture control for each pain condition.

Conclusions: Acupuncture is effective for the treatment of chronic pain and is therefore a reasonable referral option. Significant differences between true and sham acupuncture indicate that acupuncture is more than a placebo.
ED'S 1 SECOND ACUPUNCTURE TREATMENT

Ready?
Incorporating Integrative medicine into practice

- Requires conventional practitioners to be open to non-conventional approaches.
- Assess which conditions are most responsive to Integrative medicine.
  - Pain is a good starting point/condition.
- Chronic pain is associated with significant morbidity and lower quality of life.
- Consider incorporating a comprehensive management plan using pharmacotherapy, physical therapy and integrative treatments which patient may be open to utilizing.
Integrative medicine takes account the whole person, emphasizes a therapeutic relationship between patient and practitioner, and uses evidence-based treatments both conventional and complementary.

1/3 of American adults use Integrative and complementary medicine and spend $34 billion out-of-pocket for these treatments.

Acupuncture and many other integrative medicine treatments are reasonable referral options for chronic pain.
Parting Words...

“If you have a good diet, you don’t need acupuncture or herbs.”

“If you have a bad diet, you don’t need acupuncture or herbs.”
References

References


http://www.yosan.edu/


N. ANTON BORJA, DO, MATCM
DIRECTOR OF INTEGRATIVE MEDICINE CLINIC, ASST. PROFESSOR
DEPARTMENT OF FAMILY MEDICINE,
QUILLEN COLLEGE OF MEDICINE, EAST TENNESSEE STATE UNIVERSITY
FINI!