Acupuncture in Sports Medicine

Priscilla Tu, DO, FAAFP, FAOASM
VTC-Carilion Family Medicine
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• No financial disclosures…unfortunately 😞

Objectives
• Understand what acupuncture is and who can practice it
• Briefly discuss history of acupuncture
• Discuss the uses of acupuncture and studies involved
• Sports applications for acupuncture

Poll?: What is Acupuncture?
What is Acupuncture?

- NCCIH – “a family of procedures involving the stimulation of points on the body using a variety of techniques”
- Most common and most studied = penetrating the skin with thin, solid, metallic needles that are manipulated by the hand or by electrical stimulation

Acupuncture Principles

- Qi (“life energy”) – regulates spiritual, emotional, mental, and physical balance
- Qi is influenced by opposing forces of yin and yang
- Qi flows through body along “meridians” (14)
  - Focus of energy = acupuncture point

Acupuncture Points

Auricular Acupuncture Points

Auricular Master Points

- Sympathetic Tone
- Master Oscillation
- Adrenal Stress
- Endocrine Hormones
- Master Cerebral
- Shenmen
- Zero
- Thalamus
- Master Sensory
Chinese Scalp Acupuncture

Points

Acupuncture Styles

• Traditional Chinese Medicine (includes Chinese scalp and 5 elements)
• French energetics
• Auricular
• Myofascially based
• Japanese style
• Korean hand

Poll ?: Who Can Practice Acupuncture?

Licensed Acupuncture (LAC)
• National Certification Commission for Acupuncture and Oriental Medicine
• 3-4 years of post-graduate study
• AL, KS, ND, OK, SD, WY – no acupuncture
• 21 of 44 – no certification required

Medical Acupuncture
• 200-300 hours of medical acupuncture study
• Board Certification ABMA
• Completed recognized course
• Passing board examination
• Submission of 500 clinical cases
• Only MD/DO/DC – AL, DL, KS, MS, ND, OK, SD
Who Can Practice Acupuncture?

- 90% physicians practicing acupuncture trained through Helms Medical Institute
  - Oldest ongoing medical acupuncture training programs (old UCLA course)
  - 300+ hours = self study, plus 18 days broken into 3 sessions of intense clinical testing and training
  - Combination of TCM, French, auricular

History of Acupuncture

- 2nd century BC – earliest source of acupuncture during Han Dynasty = Huang Di Nei Jing
- 1st and 2nd AD – also during Han Dynasty = Nan Jing
- 1601 = Zhen Jiu Da Cheng – most influential medical text – helped transmit acupuncture through Europe 17th-19th centuries

History of Acupuncture

- George Soulié de Morant (20th cent Europe) – introduced the concepts of “meridian” and “energy”; propelled the development of “French Energetic Acupuncture”
- Acupuncture developed into a biomedical science in the 20th century which influenced the practice of conventional western medicine
History of Acupuncture

- July 1971: Henry A. Kissinger, Secretary of State for President Nixon, went to China to re-establish relationships
- James Reston of the N.Y. Times with him and had an acute appendicitis attack
- Chinese physicians performed emergency appendectomy using acupuncture for pain relief
- Reston wrote article about his experience in N.Y. Times
- Kissinger mentioned occurrence in a press briefing
- He and President Nixon’s interest in acupuncture → many in US beginning to try acupuncture

Acupuncture Uses – WHO

Respiratory Diseases
- Acute/Chronic sinusitis
- Acute/Chronic rhinitis
- Common cold
- Acute tonsillitis
- Acute/Chronic allergic rhinitis

Bronchopulmonary Diseases
- Acute bronchitis
- Bronchial asthma
- Eye Disorders
- Acute conjunctivitis
- Cataract (without complications)
- Myopia
- Central retinitis

Gastrointestinal Disorders
- Spasm of the esophagus and cardia
- Hiccups
- Gastroptosis
- Acute and chronic gastritis
- Gastric hyperacidity
- Chronic duodenal ulcer
- Acute and chronic colitis
- Acute bacterial dysentery
- Constipation
- Diarrhea
- Paralytic ileus

Disorders of the Mouth Cavity
- Toothache
- Pain after tooth extraction
- Gingivitis
- Pharyngitis

Neurologic Disorders
- Headache
- Migraine
- Trigeminal neuralgia
- Facial paralysis
- Paralysis after apoplectic fit
- Peripheral neuropathy
- Paralysis caused by poliomyelitis
- Meniere's syndrome
- Neurogenic bladder dysfunction
- Nocturnal enuresis
- Intercostal neuralgia

Mental and Emotional Problems
- Anxiety fearful states or early stages of depression

Orthopedic Disorders
- Periarthritis humeroscapulares
- Tennis elbow
- Sciatica
- Low back pain
- Rheumatoid arthritis

Gynecological problems
- Dysmenorrhea
- Infertility
- Menorrhagia
Science of Acupuncture

- 1980s: endorphin and monoamine mechanisms
  - Activates inhibitory mechanism in ascending pain pathway and stimulates descending analgesic pathway
- fMRI studies demonstrate acupuncture modulates cortical, subcortical, and brainstem pathways in pain processing

Is Acupuncture Safe?

- YES!!
  - When performed by well-trained practitioners
  - Common SE: mild pain with insertion, minor bleeding, bruising
  - Less common SE: lightheadedness, HA, nausea, drowsiness, vasovagal syncope
  - Severe SE (<0.05/10,000 tx): retained needle, organ puncture, infection, PTX, Sz, drowsiness
  - Up to 15% people = no response

Acupuncture Studies

- True RCT difficult
  - Sham acupuncture difficult
  - Trials should use same technique for all but in practice, acupuncture is very individualized

Acupuncture Research

- Low Back Pain
- Knee Osteoarthritis
- Migraines
- Cancer: Fatigue; N/V
- Substance Abuse
- Traumatic Brain Injury
- Acute Pain
Low Back Pain

- Manheimer et al 2005: Acupuncture more effective than sham/no treatment; No evidence versus other tx
- Lam et al 2013: statistically and clinically significant reduction pain and improved function v no tx or standard tx

Knee OA

- White et al. 2007: significantly superior to sham and no tx, even when all received diclofenac
- Corbett et al 2013: significantly better than "standard care"
- Manyanga et al 2013: significant dec pain intensity, improved fxnal mobility and QOL

Traumatic Brain Injury

- Wong et al 2012: effective tx
- Zollman et al 2012: improved perception of sleep, improved cognitive fxn
- Shih et al. 2013: decreased ED visits and hospitalization first year after injury

Acute Pain

- Colonel Niemtzow = Battlefield ACP 2001
- 2009 – Air Force study with Helms Institute
  - ACP effective in reducing pain, decreasing need for narcotics, and facilitating earlier assessment of TBI
Application to Sports Medicine

- Licensed Acupuncturists have special Sports Medicine certification – additional training specific to sports injuries
- Pain management that can be safe, easy to transport, stable in all environments, nonsedating, minimal side effects, and able to be used on a patient regardless of hemodynamic status or injury

Poll ?: What Are Applications of Acupuncture to Sports Medicine?

Application to Sports Medicine

- Pain Management
- Prevent Injury – promote neuroanatomic and cardiovascular balance
- Prevent Illness – inc WBC
- Improve Recovery
  - Decrease HR, increase blood flow, promote relaxation of tight muscles (inc flexibility/mobility)
  - Increase carnitine to help muscle fatigue
- Improve Athletic Performance
  - Aerobic conditioning (dec HR, inc SV, inc CO) – inc exercise capacity
  - Increase blood flow, increase strength/power (tone)

Poll ?: Is Acupuncture A Form of Doping?
Acupuncture as Doping?

• Targeted due to analgesic effect and release of endogenous opiates
• In order to be considered a doping agent:
  • Enhance performance or have potential to enhance performance
  • Evidence that the method creates a potential risk of harm to the athlete

Adjuvants to Acupuncture

• Myofascial
  • Cupping
  • "Gua Sha" aka Scraping
    • Reinforce acupuncture input
    • Stimulate blood flow and relax muscles
    • Decrease stagnation of energy, blood, and body fluids thereby decreasing pain

Cupping / Gua Sha

Adjuvants to Acupuncture

• Heat
  • Increases microcirculation, loosens fascia
  • Helps in transfer of energy through needles
  • Moxibustion – heat with Artemisia vulgaris (common mugwort)
  • Heat lamp
Complementary Modalities

• Osteopathic Manipulation
• Craniosacral Therapy
• Massage Therapy
• Physical Therapy
  • Dry Needling
  • Graston
• Other body work practitioners (kinesiologist)

Take Home Points

• Check State Credentialing Needs
• Can be great adjunct or stand-alone tx
• OMT and acupuncture work well together
• Minimal risks with potential for huge benefits

References

References