Integrative Therapies for Common Running Related Injuries

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Objectives

1. To report the current state of running participating and running injury prevalence

2. To identify the most common musculoskeletal injuries and their etiology

3. To identify the role of integrative medicine in the treatment of these injuries
“The physician of the future will give no medicine, but will interest his patients in the care of the human frame, in diet and in the cause and prevention of disease.” – Thomas Edison
What is integrative medicine?

- A healing-oriented medicine that takes account of the whole person, 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.
Increase in integrative care

- Study showed that one in three Americans had used an alternative therapy, often under the medical radar.

- According to the American Hospital Association, the percentage of U.S. hospitals that offer complementary therapies has more than doubled in less than a decade, from 8.6% in 1998 to almost 20% in 2004. Another 24% of hospitals said they planned to add complementary therapies in the future.
Running in the USA

- Between 1990 and 2013, finisher totals increased from five million road race runners to over 19 million.

- For 2015, 17.1 million finishers were reported across all road race distances, a decrease of nine percent from the previous year.
Racing demographics

- Females account for 9.7 million finishers nationwide and continue to represent 57% from event fields.
- Males in 2015 represented over 7 million finishers in U.S. races.
- The 25 to 44 year old age group accounts for half of finishers.
- Total number of U.S. running events reached 30,300, up 8% from 2014, with the largest growth seen by the 10K distance (14%) from an all-time high in 2013.
- In 2015, the 5K maintained the #1 position of all race distances with 7.6 million finishers, claiming 45% of all finishers in the U.S., while the half-marathon again held the #2 position with approximately 12% of the finishers, followed by the 10K (7%).
What is a runner?

- Competitive running
  - Professional, collegiate, high school, road running, trail running

- Non-competitive
  - Those that use running for weight control and health maintenance or improvement.
More runners mean more injuries.

- Reported incidences of injuries among runners ranges from 19.4% to 79.3%.

- Medial tibial stress syndrome
  - (incidence ranging from 13.6% to 20.0%; prevalence of 9.5%)

- Achilles tendinopathy
  - (incidence ranging from 9.1% to 10.9%; prevalence ranging from 6.2% to 9.5%)

- Plantar fasciitis
  - (incidence ranging from 4.5% to 10.0%; prevalence ranging from 5.2% to 17.5%)

- Patellofemoral syndrome
  - (prevalence ranging from 7.4% to 15.6%)

van Gent et al., 2007, Lopes et al., 2012
Treatment Options

- Conservative therapies
  - Rest
  - Medications
  - Supplements

- OMM, physical therapy and massage.

- Invasive therapies
  - Injections
  - Needle therapy
  - Surgery
Medial tibial stress syndrome (MTSS)

- Pain on the posteromedial tibial border during exercise, with pain on palpation of the tibia over a length of at least 5 cm
- What is MTSS?? Inflammatory response, stress syndrome...
- Risk factors are over pronation, female gender, and prior history of MTSS
  - Increased BMI, navicular drop, ankle plantarflexion range of motion and hip external rotation ROM
- Common treatments
  - Conservative therapies- most commonly rest
Integrative Thoughts: MTSS

- Training program
  - Too much, too fast, too soon
- Training surfaces
  - Trial, road, track, grass
- Shoe wear
  - Minimal, supportive, rock plates
- Stress
- Nutrition
- Rest/ sleep
  - Recovery, fatigue
Integrative Therapies: **MTSS**

- Osteopathic manual medicine
  - Myofascial release
- Acupuncture/ Acupressure
  - Cupping
  - Gua Sha
- Regenerative injection therapies
Acupuncture

- “Acupuncture is a method of encouraging the body to promote natural healing and to improve functioning. This is done by inserting needles and applying heat or electrical stimulation at very precise acupuncture points.”- AAMA

- Works through the use of meridians to unblock the flow of chi.
Meridians

https://blog.udemy.com/acupuncture-chart/
Acupuncture

- Treatment options:
  - Acupressure
  - Cupping
  - Gua Sha

- Treatments could involve direct therapy to the injured area as well as indirect
  - Auricular points
  - Meridian points
  - Scalp Points
Regenerative Injection Therapies

- The use of irritant to stimulate the body to heal itself.

- Used to treat bone/cartilage, ligament, tendon, muscle, and joints.

- Therapies could include prolotherapy, autologous blood, PRP, and bone and fat cells.
Regenerative Injection Therapy

- Has been used since the 1950s.

- Regenerative therapies to increase healing to the damaged tissue or bone.

- High success rates with treatments that show continued improvement after therapy.
Inflammation has 3 distinct phases:

- **the acute inflammation phase**
  - 100 hours long
  - Influx of leukocytes and possible prostaglandins

- **the granulation phase**
  - 10 -14 days
  - Macrophage “clean up”
  - Growth factor release $\rightarrow$ fibroblast formation

- **the remodeling phase**
  - Stronger collagen at injury site
  - Important for movement
  - Last several weeks to months.
Achilles tendinopathy

- Pain in the posterior heel worse with plantar flexion and dorsiflexion.
- Inflammation vs delayed/failed healing response
- Treatment options:
  - Eccentric therapy
  - Corticosteroid injections
  - Night Splints
  - Massage
  - Surgery
Integrative thoughts: Achilles Tendinopathy

- Foot motion
- Stride motion
  - Longer strides
- Running terrain
  - Hills versus flat
- Fascial restraints
  - Hamstring
- Sleep/ rest
  - Fatigue
- Shoe type
  - Stiff sole/ cushioned heel
Integrative Therapies: Achilles Tendinopathy

- OMT
- Medical Acupuncture
  - Pain relief and vascular flow
- Regenerative Injection Therapy
Plantar fasciitis

- Pain in the heel worse with first step in the am.

- Risk factors: Female, overweight, standing, tight musculature

- Common treatments:
  - Rest
  - Stretching
  - Splinting
  - NSAIDS
  - Arch support
  - Corticosteroid injection
  - Surgery
Integrative Thoughts: Plantar Fasciitis

- Training
  - overtraining
- Shoe wear
  - Arch support
  - Daytime shoe wear
- Sleep/ fatigue
  - Rest and recovery
- Fascial restraints
  - Tight posterior muscle chain
Integrative Therapies: Plantar Fasciitis

- OMT
- Medical Acupuncture
  - Pain relief and vascular flow
  - Stress reduction
  - Mood
- Regenerative Injection Therapy
Patellofemoral Syndrome

- What is PTFS
  - Peripatellar pain with movement
  - Tracking issues with the patella during flexion and extension of the knee.
  - Over use injury

- Risk factors
  - Movement
    - Running
  - Foot arch- planus or cavus
  - Increased Q angle
Patellofemoral Syndrome

- Weakness in VMO
  - M. vastus lateralis activated earlier than the M. vastus medialis obliquus

- Internal rotation of the femur due to weakness of hip external rotators and abductors

- Rear and forefoot abnormalities
  - Rear foot eversion $\to$ internal rotation of tibia
Integrative thoughts: Patellofemoral Syndrome

- Sleep/ Fatigue

- Stress

- Training
  - Warming up in multiple planes
  - Cross training

- Nutrition

- Foot motion/ Shoe wear
Common therapies: Patellofemoral Syndrome

- Taping
- Bracing
- Strengthening
  - delayed activation of the M. vastus medialis
  - Vastus medialis obliquus
  - Hip/ pelvic
- Stretching
  - hamstring
- Rest
- Footwear and orthotics
- Surgery
Integrative therapies: Patellofemoral Syndrome

- OMT
- Medical Acupuncture
  - Lower extremity
- Regenerative Injection Therapy
Questions?
References

Acupuncture treatments

- Battlefield protocol
- Cupping
- Acupressure
Battlefield protocol

- Col. Richard Niemtzwow MD. PhD- 2001
- modulation of pain in the Central Nervous System involving the hypothalamus, thalamus, cingulate gyrus and cerebral cortex structures

Helms Medical Institute
Cupping and Gua Sha

- Increase blood flow
- Scrapping if tolerated or application of suction cups for 15-20 min or as long as tolerated.
- Look for skin color changes with capillary rupture (sha).
Acupressure

- Can use seed therapy or ASP needles for placement of points for continued stimulation.
- Great for athletes to use during competition