**Achilles Tendonitis**

Achilles tendinitis (AT) is an overuse injury of the Achilles (uh-KILL-eez) tendon, the large band of tissue running down the back of your leg to the heel. The Achilles tendon connects calf muscles at the back of the lower leg to your heel bone. In Achilles tendonitis, the Achilles tendon, becomes irritated and inflamed. Achilles tendinitis is a traumatic condition characterized by significant inflammation, and most commonly occurs in runners who have suddenly increased the intensity or duration of their runs. AT is also common in middle-aged people playing sports, such as tennis or basketball, only on weekends.

The Achilles tendon is the largest tendon in the body, and is used when you walk, run, climb stairs, jump, and stand on your tip toes. Although the Achilles tendon can withstand great stresses from running and jumping, it is also prone to tendinitis, a condition associated with overuse and degeneration. Symptoms may include pain and stiffness along the Achilles tendon in the morning, pain along the tendon or back of the heel that worsens with activity, severe pain the day after exercising, thickening of the tendon, bone spur, swelling that is present all the time and gets worse throughout the day with activity.

Regarding inflammation and favorable non-medicinal treatment, Bjordal et al. (2006b) conducted a review of animal and in vitro studies and found strong evidence that LLLT modulates biochemical inflammatory markers and produces local anti-inflammatory effects in cells and soft tissue. Specifically, the review found strong evidence from 18 out of 19 studies that red and infrared wavelengths of LLLT can act locally and rapidly to modulate the inflammatory processes in injured tissue. These anti-inflammatory effects include changes in biochemical markers, altered distribution of inflammatory cells, and reduced formation of edema, hemorrhage, and necrosis. The reduced formation of edema, defined as "swelling caused by fluid" in the body's tissues.

Morimoto et. al. administered LLLT to subjects with AT on both tender points and acupuncture points. The rate of effectiveness in cases of irradiation by a physician was 100%. Jumper's knee, lateral epicondylitis of the humerus, and Achilles tendonitis are injuries commonly treated for long periods of time with a variety of modalities and mixed results. However the results of the Morimoto study confirms that the rate of effectiveness of LLLT in cases of jumper's knee, tennis elbow and Achilles tendinitis was high. They concluded that LLLT is an effective treatment for sports injuries, particularly jumper's knee, tennis elbow and Achilles tendinitis.

Stergioulas et. al. studied recreational athletes with chronic Achilles tendonitis symptoms randomized to groups receiving either EE + LLLT or EE + placebo LLLT over 8 weeks in a blinded manner. Low-level laser therapy (lambda = 820 nm) was administered in 12 sessions by irradiating 6 points along the Achilles tendon. The results of the intention-to-treat analysis for the primary outcome, pain intensity during physical activity on the 100-mm visual analog scale, were significantly lower in the LLLT group than in the placebo LLLT.
group, with 53.6 mm versus 71.5 mm (P = .0003) at 4 weeks, 37.3 mm versus 62.8 mm (P = .0002) at 8 weeks, and 33.0 mm versus 53.0 mm (P = .007) at 12 weeks after randomization. Secondary outcomes of morning stiffness, active dorsiflexion, palpation tenderness, and crepitation showed the same pattern in favor of the LLLT group. They concluded low-level laser therapy, accelerates clinical recovery from chronic Achilles tendinopathy.

Inflammation is a significant component in Achilles tendonitis. Biorda et. al. as well as many other authors provided clear evidence that LLLT produces significant anti-inflammatory effects and conclude that LLLT can be used to reduce inflammatory musculoskeletal pain. They also conclude that LLLT has the advantage of rapid action and few side effects.

Additionally the studies by Morimoto et. al and Stergioulas et al. clearly show Achilles Tendonitis favorably responds to LLLT. Along with numerous other studies this provides competent and reliable scientific evidence that LLLT has a beneficial effect on Achilles tendonitis.

References

