Intense Therapeutic Ultrasound Technology Changes the Financial Game of Musculoskeletal Injuries

Wed, 05/18/2016 - 2:48pm by Michael Slayton, Ph.D., CEO, Guided Therapy Systems

A newly released study from the United States Bone and Joint Initiative of the American Academy of Orthopedic Surgeons found that up to one in two Americans has a musculoskeletal condition, affecting twice as many people as any other medical condition. Some are genetic or come with age but many also stem from falls, work, military service and sports injuries – for sports in particular, including basketball, soccer, tennis, football and gymnastics, musculoskeletal injuries account for the largest class of athletic injuries sustained.

As such, the report estimates that these disorders cost the U.S. around $213 billion each year in treatment, patient care and lost wages. In fact, the average annual cost per person for treatment of a musculoskeletal injury or condition is a whopping $7,800. Indirect costs can also accumulate from conditions affecting those with musculoskeletal issues, including diabetes and obesity. According to the report, both those diagnosed with musculoskeletal disorders and the costs associated with them are rising each year – and treatment options aren't developing at the pace they need to be to tackle this epidemic.

While prevention strategies are continuing to be explored, this research tells us that increased funding into alternative methods of treatment is a must. With the amount of people currently affected and projected to be affected by musculoskeletal conditions, it's pertinent that treatment options are affordable, effective and tackle the problem at the root.

One viable solution is intense therapeutic ultrasound (ITU) technology. Guided Therapy Systems created a medical handheld device to noninvasively treat soft tissue injuries, such as plantar fasciitis, lateral epicondylitis, Achilles tendon injury and patella tendon injury. Actisound has the unprecedented ability to make small incisions deep within the soft tissue without having to break through the skin. The sound waves from the device are focused to allow concentrated energy deposition to occur deep in the tissue, thus allowing localized treatment while sparing intervening tissue where it's indicated. What makes Actisound stand out as an alternative treatment is that it treats the underlying cause of the injury, not just the pain. It's not a short-term solution like over-the-counter pain medications and also doesn't come with the big expenses, long recovery time and complications of a surgery.

The Actisound engineering team designed this device to be robust, safe, and easy to use. The control system and attached applicators for a variety of clinical indications are mobile, have a simple user interface, and require little training for use. Actisound uses high-powered internally focused piezoelectric crystals, which create ultrasound beams passing through acoustically compatible liquids and an acoustically matched membrane coupled to

the skin. The beam focused deep below the skin delivers thermal ablations, precisely targeting the soft tissue to be repaired while sparing intervening tissue.

Actisound has demonstrated a high rate of efficacy in trials where it has shown that it leads to reduced chronic pain, improved mobility and repair of pathology after just two short treatments taking only a few minutes each. Its fast procedure time, affordability and easy-to-use nature are all factors that contribute to a patient-centric healthcare solution that will prove to be cost effective as well as efficacious, bringing physicians a more attractive option than those considered as part of the current standard of care.

If ITU technology continues to expand to new applications like we anticipate that it will, the cost associated with treatment of musculoskeletal conditions has the capability to significantly decline. Because Actisound is designed for the non-operative environment, is portable and affordable (compared to large hospital scale machines and devices) and requires little training to use, it has the potential to become a widely distributed new technology employed by orthopedic surgeons, podiatrists, primary care physicians and physical medicine and rehabilitation physicians – eventually even consumers for in-home care. The costs of treatments such as surgery and minimally invasive procedures in addition to physical therapy, pain medications, massages and acupuncture can be staggering, but the use of ITU technology offers a very promising opportunity to stem the increase in rising costs.