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Naples, Italy, October 12th, 2016

Consensus Statement on ESWT Indications and Contraindications

The members of the managing board, the Advisory board and the Senators of the International Society for Medical Shockwave Treatment (ISMST), have decided at the managing board meeting in Naples, Italy held on October 13th, 2016, to publish a set of clinical recommendations for using therapeutic shockwaves in clinical practice.

The recommendations were assembled based on an assessment of the current published scientific and clinical information and accepted approaches to treatment.

The recommendations are meant to aid the clinician in the use of shockwave medicine. In particular, the Guidelines are intended to clarify the indications and contraindications to treatment.

The recommendations are not intended to be a fixed protocol, as some patients may require more or less treatment depending on the clinical scenario. Patient care and treatment should always be based on a clinician's independent medical judgment, given the individual patient's clinical circumstances.

On behalf of the ISMST Managing Board,

A handwritten signature in black ink, appearing to read "José Eid". The signature is stylized with a large, sweeping flourish that extends to the right and then loops back under the name.

Dr. José Eid
General Secretary of the ISMST

A. Introduction and prerequisites and minimal standards of performing ESWT

In order to prevent improper treatment, the following list contents the minimum prerequisites and standard examinations performing ESWT:

1. Clinical examination
2. Radiological imaging
3. Neurological and/or laboratory-diagnostic tests and/or other investigations may be necessary to corroborate the diagnosis.

Only a qualified physician (certified by National or International Societies) may use focused shockwave therapy to treat pathologies, which have been determined by diagnostic testing.

For the treatment on bones, a high-energy, focused shockwave with positioning technology has to be used.

In accordance with most scientific evidence ISMST recommends to use focused generators and high energy levels to treat calcifications.

To treat superficial soft tissue conditions, devices with or without focusing technology may be utilized; close attention must be paid to the depth of penetration of the shockwave source when treating deep tissue structures.

B. INDICATIONS

1. Approved standard indications

- 1.1. Chronic Tendinopathies
 - 1.1.1. Calcifying tendinopathy of the shoulder
 - 1.1.2. Lateral epicondylopathy of the elbow (tennis elbow)
 - 1.1.3. Greater trochanter pain syndrome
 - 1.1.4. Patellar tendinopathy
 - 1.1.5. Achilles tendinopathy
 - 1.1.6. Plantar fasciitis, with or without heel spur
- 1.2. Bone Pathologies
 - 1.2.1. Delayed bone healing
 - 1.2.2. Bone Non-Union (pseudarthroses)
 - 1.2.3. Stress fracture
 - 1.2.4. Avascular bone necrosis without articular derangement
 - 1.2.5. Osteochondritis Dissecans (OCD) without articular derangement
- 1.3. Skin Pathologies
 - 1.3.1. Delayed or non-healing wounds
 - 1.3.2. Skin ulcers
 - 1.3.3. Non-circumferential burn wounds

2. Common empirically-tested clinical uses

2.1. Tendinopathies

- 2.1.1. Rotator cuff tendinopathy without calcification
- 2.1.2. Medial epicondylopathy of the elbow
- 2.1.3. Adductor tendinopathy syndrome
- 2.1.4. Pes-Anserinus tendinopathy syndrome
- 2.1.5. Peroneal tendinopathy
- 2.1.6. Foot and ankle tendinopathies

2.2. Bone Pathologies

- 2.2.1. Bone marrow edema
- 2.2.2. Osgood Schlatter disease: Apophysitis of the anterior tibial tubercle
- 2.2.3. Tibial stress syndrome (shin splint)

2.3. Muscle Pathologies

- 2.3.1. Myofascial Syndrome
- 2.3.2. Muscle sprain without discontinuity

2.4. Skin Pathologies

- 2.4.1. Cellulite

3. Exceptional indications – expert indications

3.1. Musculoskeletal pathologies

- 3.1.1. Osteoarthritis
- 3.1.2. Dupuytren disease
- 3.1.3. Plantar fibromatosis (Ledderhose disease)
- 3.1.4. De Quervain disease
- 3.1.5. Trigger finger

3.2. Neurological pathologies

- 3.2.1. Spasticity
- 3.2.2. Polyneuropathy
- 3.2.3. Carpal Tunnel Syndrome

3.3. Urologic pathologies

- 3.3.1. Pelvic chronic pain syndrome (abacterial prostatitis)
- 3.3.2. Erectile dysfunction
- 3.3.3. Peyronie disease

3.4. Others

- 3.4.1. Lymphedema

4. Experimental Indications

- 4.1. Heart Muscle Ischemia
- 4.2. Peripheral nerve lesions

- 4.3. Pathologies of the spinal cord and brain
- 4.4. Skin calcinosis
- 4.5. Periodontal disease
- 4.6. Jawbone pathologies
- 4.7. Complex Regional Pain Syndrome (CRPS)
- 4.8. Osteoporosis

C. CONTRAINDICATIONS

1. Radial and focused waves with low energy

- 1.1. Malignant tumor in the treatment area (not as underlying disease)
- 1.2. Fetus in the treatment area

2. High energy focused waves

- 2.1. Lung tissue in the treatment area
- 2.2. Malignant tumor in the treatment area (not as underlying disease)
- 2.3. Epiphyseal plate in the treatment area
- 2.4. Brain or Spine in the treatment area
- 2.5. Severe coagulopathy
- 2.6. Fetus in the treatment area