



News Letter

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Editorial • Editorial comments



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The ISMST and the ISMST Newsletter
(International Society for Shockwave Therapy)
An international platform for communication and knowledge transfer

The XII ISMST Congress will be held in Italy, in Sorrento, from the 1st to 4th April 2009. It has been organized by Sergio Russo of the University of Naples "Federico II", who generously appointed me honorary President of the Congress both for the affection and the esteem that join us, and mindful of our common and continuous activities in the last 15 years in order to assert in the medical world the value of shock waves in musculoskeletal pathologies and in other medical areas which step by step are singled out as possible therapeutic application fields of shock waves.

The place for the Congress, the Hilton Sorrento Palace, has been chosen to offer the participants the sight of a magic place well-known around the world for its natural beauties. And also to give the members the opportunity of a short immersion in Roman history, visiting the archaeological excavations of Ercolano which was brought to light in the last century after its destruction and burial following the catastrophic eruption of Vesuvius in 79 a.C. and the serious natural events.

Since years inexorably pass I have the impression that my soul, growing older and older, has become more sensitive to memories. While I am writing I can see, as regards the shock wave therapy, the last 15 years during which my closest partners, among whom I want to mention at least Sergio Russo, Sergio Gigliotti, Carlo De Durante, have been collaborating with me since the early experiments concerning shock waves in musculoskeletal pathologies and they supported me allowing us all to study a therapeutic field that has enriched our knowledge and spread in all directions.

I remember clearly 1993, when we carried out the first shock wave application on a patient affected by pseudoarthrosis of the carpal scaphoid for more than two years and who, after only two shock wave applications through an old urologic lithroliptor, recovered almost by a miracle in a month. This thrilled us very much and made us believe more in the method. I remember the first congresses of Orthopaedics in Italy and in Europe where we introduced our early outcomes, causing positive interest and also much disbelief in our Italian and foreign colleagues.

I remember with affection Prof. Heinz Kuderna of Vienna with whom and together with other European scholars such as Prof. Wolfgang Schaden, Dr. Richard Thiele and others we met in Vienna, in 1997, to establish the European Society of Shock Wave Therapy in the musculoskeletal pathologies

(ESMST). Prof. Heinz Kuderna, eminent doctor and scholar, was the first president of the European Society and in 1999 I succeeded him during the Congress in London and in Naples in 2000, during the III Congress chaired by me, the European Society became the International Society (ISMST).

Since 1995 there has been a strong collaboration with scholars all over the world on the shock wave therapy and with the increase in experimental studies, in clinical experiences, as well as the adjustment of devices to new traumatological orthopaedic needs, we achieved in few years the spreading of the method and of the therapeutical directions. The positive clinical responses of thousand of cases around the world bears witness to it, together with the scientific interest that the new method caused, promoting the flourishing, especially in Europe, of many scientific Societies devoted to this field up to the foundation of the International Society for Musculoskeletal Shock Waves Therapy (ISMST) in 2000, which counts among its members scholars coming from all over the world. As it was expected this new therapeutical system could not remain only confined to the orthopaedic traumatological and urological fields. Several ongoing researches make us think that other medical branches will benefit from the shock wave therapy. We have been the first scholars to monitor the system and to experiment it on man as well as to document angiogenesis processes in the tissues hit by shock waves. We also wished to find out the chemical mediators able to turn the mechanic effect into the biological one. Nowadays we are able to firmly point out that the main chemical mediator which causes neoangiogenesis is nitrogen monoxide (NO) which originates in the tissues hit by shock waves in peculiar circumstances. This fundamental outcome has also been achieved thanks to the collaboration between our research group and a similar research group of the University of Verona chaired by Prof. Hisanori Suzuki.

According to what I have written and to what I have not reported for the sake of brevity, I must firmly reaffirm that the past 15 years of research on shock waves have been the harbinger of really satisfactory outcomes.

I am going to conclude this editorial even mentioning the success of the International Society for shock wave therapy (ISMST) which has recorded participation and interest beyond the rosiest expectations giving further value to this new therapeutical system.

In the end I would like to thank the founder and publisher Paulo Roberto Dias dos Santos for his careful direction of the Newsletter and because he allowed me to write my sincere editorial. ■

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New Guidelines for ESWT

Thiele, Richard, MD

Since 1994 the ESWT is applied in the field of orthopedic and surgery and there were no concrete treatment guidelines ever published.

According to the consensus statement of international board of experts from 2008 (see Newsletter 2008) the experts worked out guidelines in that way the AWMF working group of scientific approved societies in Germany is using.

The expertgroup: (Dr. Auersperg, Dr. Buch, Dr. Gerdesmeyer, Dr. Gleitz, Prof. Maier, Dr. Neuland, Dr. Rädle, Prof. Rompe, Dr. Schaden, Dr. Thiele, Dr. Wille)

There are now guidelines for the approved standard indications for

- chronic tendinopathies as plantar fasciitis with or without heelspur
- Achilles tendon
- epicondylopathie (tennis elbow)
- rotator cuff with or without calcification
- patella tendon
- greater trochanteric pain syndrome

For the impact bone healing function:

- non unions and delayed bone healing
- stress fractures
- early stage of avascular bone necrosis (native X-ray without pathology)
- early stage osteochondritis dissecans (OD postskeletal maturity)

These guidelines will be published soon.

On the same meeting this board of international experts defined special guidelines for the ESWT of skeletal muscles.

ESWT of skeletal muscles

Preamble: Myofascial pain syndrome
Classification M62.8 ICD 10

Synonyms

Myogelosis, muscle hardenings, myofascial pain syndrome, pseudo-radicular pain syndrome, trigger points, RSI Syndrome

Etiology

Mainly a subsequent state of an extra muscular pathology e.g. by

- static disorders
- muscular dysbalance
- arthrogenic irritations
- visceral irritations
- internal diseases
- radiculopathies
- chronic overload / incorrect weight bearing
- acute and chronic injuries of the skeletal muscles

Symptoms

local pressure pain, stretching and tension pain, muscle hardening, muscle shortening, strength reduction, motoric dysfunction

Instrument-based diagnostics

ultrasonography
laboratory (inflammation parameter, muscle enzymes)

Differential diagnosis

primary myopathies, neurological diseases, neurogenic dysfunction, rheumatic pains, psychological diseases, neurovegetative syndrome, hormonal disorders (e.g. hyperparathyroidism, hypothyroidism), cardiac diseases, adverse reactions

Conservative therapy in alphabetic order

akupuncture, electrotherapy, immobilization, infiltration of local anaesthetics and (or cortisone, needling, neural therapy, non-steroidal antirheumatics, orthosis, strain relief, stretching, thermotherapy, ultrasound

Surgical interventions

denervation
subcutaneous tenotomy

Shockwave therapy

Indication: diagnosis by the MD (physician)

Contraindications: malignant tumor in the focal area, open epiphysis in the focal area, pregnancy

Spatial requirements: requirements for the certification of a medical practice e.g. hygiene plan, emergency plan according to ISO 9001:200 available.

Patient preparation: patient positioning in a position with relaxed muscles to be treated, orientating ultrasonography of the therapeutic area for local diagnostics and selection of focal depth, patient information about shockwave therapy and explicit information about potential hematoma.

MD and assistants: medical treatment, written documentation of the therapy

Therapy procedure:

- no local anaesthetics
- designation of the shockwave source
- designation of the muscles to be treated
- 1 - 6 treatments
- total energy flux density EFD: 0.05 - 0.35 mJ/mm₂
- interval 1 week
- frequency: focused shockwave therapy FSW: 4 - 8 Hz, radial shockwave therapy RSW 10 - 30 Hz
- maximum of 2000 pulses per muscle per session
- ultrasound coupling gel, castor oil or Vaseline when indicated
- localization: patient oriented focusing

Post-therapeutic care: circulatory function monitoring when indicated

Complications: hematoma, pain increase, nerve irritation

Follow up-care: abstention from sports for 4 weeks (individual adjustment of the sports program)
continuation of stretching
clinical evaluation 8 -12 weeks post therapy

Conclusion

Based on this guideline the ESWT of skeletal muscles is a treatment only done by physicians. The part of the so called triggerpoint-treatment with radioshockwaves could be delegated to physiotherapists and non-physician-healers.