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S.W.A.G. — Shock wave acupuncture according to Germann

An effective new variant of acupuncture — initial results

This article presents the new method "S.W.A.G. Shock wave acupuncture according to Germann". With this method a new form of pain therapy, which produces very good results in the treatment of pain in the musculoskeletal system, is introduced. S.W.A.G is not comparable with the so-called "shock wave acupuncture" previously practiced, as it goes far beyond that. S.W.A.G. combines the knowledge of Traditional Chinese Medicine (TCM) with modern shock wave therapy in a unique way, for the first time. The statistics presented here are the first pilot statistics from the author's practice and include 37 painful diseases of the musculoskeletal system (without further selection), which were often pretreated with other methods. The results of this first study were very encouraging: S.W.A.G. was around 80 % successful in relieving pain — and this was in patients who had generally been pre-treated unsatisfactorily with other methods. Only in the case of six ailments was there no improvement.These included one case — a patient suffering from arthritis of the hip — in which the treatment was discontinued due to an increase in pain. In order to verify these initial results, a multi-centre observational study has been carried out since November 2010. Results are expected from around 5000 individual treatments.

Details about the method

In addition to its many other fields of application, acupuncture has also been successfully used for many years for the treatment of painful ailments of the musculoskeletal system. The traditional principles of acupuncture are rooted in the ancient concepts of Traditional Chinese Medicine (TCM). In addition to these traditional ideas, the scientific and clinical research in acupuncture in the last few decades has produced many new findings, which have partially confirmed and partially rejected the old ideas, and created a completely new basis for some traditional views.

Acupuncture is one of the important pillars of TCM, and the use of traditional acupuncture needles has been used for the treatment of painful disorders of the musculoskeletal system over a very long period of time. Both local and distal acupuncture points are used. The importance of distal acupuncture points has long been known and described in TCM. In addition to their local effect, these points also have a significant effect on the organism as a whole.

In pain acupuncture the distal peripheral points and the local points are of equal importance.

Painful disorders of the musculoskeletal system — only these are recorded in the present statistics — are naturally treated not only with acupuncture, but also with a multitude of other, very different methods. One of these other methods is shock wave therapy. In orthopaedics, shock waves have been used for years without combination with acupuncture to treat painful disorders in muscles, ligaments, tendons and joints. They show their effect directly at the local points at which they are applied. This is clinically very well supported.

The multitude of local painful points in the musculoskeletal system have a dual character: They are both acupuncture and trigger points (synonyms: myogelosis, muscle tension). This dual character of the acupuncture points in the musculoskeletal system is well known to acupuncturists.
These points are called "acupuncture / trigger points" in the following. The relevant local acupuncture / trigger points are identified by palpation and according to the rules of TCM, while the distal influential points are selected according to the TCM diagnosis.

The innovation of "S.W.A.G. — Shock wave acupuncture according to Germann" is the fixed, mandatory combination of traditional needle acupuncture of influential distal acupuncture points with shock wave application on local acupuncture / trigger points in the musculoskeletal system.

The dual character of the points allows us to postulate that the shock waves will also have two different, complementary effects at these points:

1. **Shock waves "physically trigger" the muscles:** They act directly on these local points. The effect of shock waves is well documented both scientifically and clinically in this regard.

2. **Shock waves stimulate the local acupuncture point:** This is always perceived as a minimal painful stimulus, similar to the De-Qi feeling of acupuncture. From a neuro-physiological point of view, the De-Qi feeling is simply the triggering of action potentials in the excitable structures, which accumulate in the acupuncture points. This action potentials are sent by the sensory nerves to different synapses where they are switched over, then conveyed to the brain where they are perceived and processed. It does not matter by which means the action potentials are triggered. Action potential is action potential and always has the same form. The acupuncture needle itself does nothing different, as it still triggers action potentials at the excitable structures, which are then processed in the described manner.

Important: By "S.W.A.G. — Shock wave acupuncture according to Germann" the author exclusively means the combined application -described here - of traditional needling of influential distal acupuncture points with parallel application of shock waves at local acupuncture / trigger points.

Fig. 1: The MASTERPULS® MP50 radial shock wave therapy system used in the study (photo: STORZ MEDICAL)

Details about shock waves

Shock waves are very short, energetic sound pulses with a very high repetition frequency. Characteristic of these sound pulses is a short, steep increase in pressure, which is followed by a longer phase of decreasing pressure.

The medical application of shock waves began over 30 years ago in urology with lithotripsy (stone shattering). In orthopaedics, radial shock waves have been used successfully for many years to treat painful trigger points (muscle tension, myogelosis), tendons, ligaments and joints.

Although the mechanism of action of shock waves in orthopaedic applications is not yet completely understood, their clinical effectiveness is undisputed and is proven in a multitude of clinical studies. The circulation-enhancing effect of shock waves and the stimulation of metabolic processes are scientifically proven in disorders of the tendon insertions (also see the book "Enthesiopathien" by Dr. Dreisilker). It is also assumed that shock waves can mechanically loosen adhesions in muscle fibres and fascia.

Method and equipment

A device was used, in which a compressor generates the pressure necessary for the shock wave (Fig. 1). The compressed air is conveyed into the handpiece through a pressure hose. The compressed air then accelerates a projectile to high speed and makes it ricochet onto the shock transmitter, where the kinetic energy of the impact is converted into a radial shock wave. Pressure and frequency of the compressor — and hence the shock waves — can be regulated within a wide range. The system can thus be adapted to different therapeutic requirements and also to different patient tolerance thresholds.

A shock transmitter with a 6 mm diameter tip was used on the patients in this pilot study. As a result it was possible to apply the shock waves targetedly and precisely to the local acupuncture / trigger points. (During the course of the applications the important question arose as to whether a larger shock transmitter would be more advantageous. This will be examined in a later study.)

The tip of the acupuncture needle has a relatively small effective area. The effective area of a shock transmitter, on the other hand, is several orders of magnitude larger than the needle tip.

The likelihood that the points will be accurately hit by the shock wave due to the larger area of the shock transmitter is thus significantly higher than is the case with the much smaller effective area of the needle.

But it is not only the accuracy of hitting the points that is important for the treatment, but also the effective area of the shock transmitter itself, as well as the number of stimulations of the points. Both are greater in S.W.A.G. than in needle acupuncture.

> The high accuracy of the shock wave application and its resulting ease of use is a particular advantage, which should not be underestimated.

This method is also virtually free from side effects.

This combination of acupuncture of the distal influential points and the application of shock waves to local acupuncture / trigger points is, in the author's opinion, the reason for the good therapeutic effect of S.W.A.G.

The monitoring

The present pilot study records the overall effect of S.W.A.G. without further specifications. The number of observed cases (n = 37) is relatively small. This is because only cases from the author's practice were statistically recorded. Because of the already insignificant total number of cases there is no breakdown into individual diagnoses, as otherwise the number of cases (n) per diagnosis would be too small and a statistically sound statement would not be possible. The patients are not randomised and there is no control group or blinding.

For a reliable statement with sound statistical results, a larger number of patients would be desirable. In order to achieve this larger number of patients, a multi-centre observational study has been set up throughout Germany (see below).

In the period between October 2009 and June 2010, 37 painful disorders were treated with "S.W.A.G. — Shock wave acupuncture according to Germann". The cases were drawn from non-selected, current patients at the author's acupuncture practice. Only patients who were treated with "S.W.A.G." in this period were recorded anonymously. Each painful disorder was included in these statistics as an individual case. The patients were aged between 35 and 79 years, and the majority of these were female.

All patients suffered from one or more of the disorders mentioned below. Many of them had therefore already been treated with a wide variety of methods (drugs, physiotherapy or with acupuncture alone), generally without success. The conventional medical diagnoses were based on a clinical examination and existing laboratory tests, X-rays or CT/MRT images. No additional laboratory tests or new imaging examinations were carried out. The TCM diagnostic patterns were determined by means of medical history, pulse and tongue diagnosis.

The acupuncture and trigger points were palpated and marked. Two series of 20 shock waves were administered at each of the local acupuncture / trigger points (for treatment of myogelosis, muscular tension). The shock waves were applied at a frequency of 5 Hertz and — depending on the patient's tolerance - with a pressure between 1.5 and 2.5 bar. Distal influential points, which were indicated according to the TCM diagnosis, were treated with traditional needle acupuncture. Two ear needles were also used.

The treatment was generally carried out with the patient recumbent, only seated as an exception. The working pressure of the compressor, which determines the intensity of the shock wave, was adapted together with the patients so that they clearly felt the shock waves — similarly to the De-Qi feeling — but did not perceive them as "actually painful". If pain was unexpectedly felt during the treatment, the pressure was reduced until the shock waves could be tolerated without pain.

Disorders treated

- Pain of the cervical, thoracic and lumbar spine
- Shoulder pain
- Pain in the iliosacral joint
- Tennis elbow
- Golfer's elbow
- Hip joint and knee pain
- Ankle pain

After an initial series of 20 shock waves with a frequency of 5 Hertz and a pressure of 1.5 to 2.5 bar, a second identical series was applied to the selected points.

Fig. 2: Application examples for shoulder and knee

The needles remained inserted for 20 minutes. Two treatments per week were standard. The total treatment period was four to five weeks on average. This was often much shorter and only seldom longer, depending on the therapeutic success.

Many patients reported that they temporarily experienced slight muscle soreness in the treated area after the shock wave therapy. Before each new session the patients were asked how they felt, and the points were varied if necessary. An improvement often occurred after just three to five treatments. The individual treatment period was not statistically recorded.

Result

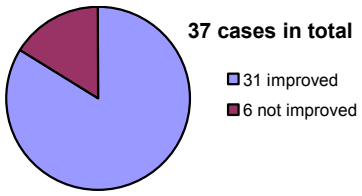

Fig. 3: Pie-chart of the results

In the case of 31 of 37 disorders, the patients subjectively reported that the "S.W.A.G." had generally been very helpful to them (Fig. 3). Only in six disorders was there no improvement. This included one case - a hip arthritis - in which the treatment was stopped prematurely after four sessions due to lack of success and increasing pain.

With a treatment success rate of around 80 % "S.W.A.G." appears to be very effective, according to these first pilot statistics. If we consider that the patients represented a negative selection, as they had generally been previously treated with other methods, e.g. drugs, physiotherapy or with acupuncture alone, without achieving the desired success, this success rate of 80 % becomes much more significant.

An important factor for the patients was the fact that the first improvements occurred very quickly.

Two already scheduled operations - one impingement of the shoulder and one gonarthrosis - could fortunately be cancelled after successful S.W.A.G. therapy.

In order to put the results on a broader and thus sound statistical basis, a large multi-centre observational study throughout Germany was initiated in Wiesbaden in November 2010. This observation will include the execution and documentation of around 5000 individual treatments with S.W.A.G.. 18 acupuncture physicians from all over Germany, all members of the ATCÄ (Akupunktur- und TCM-Gesellschaft in China weitergebildeter Ärzte e.V.) will take part. The results will be available by mid 2011.

Summary

According to the present state of knowledge, the therapeutic progress of S.W.A.G. is due to the fact that it combines two systems with completely different actions:
Chinese needle acupuncture, which has been used for thousands of years, and modern shock wave therapy.

According to the preliminary results to date, the therapeutic success of needle acupuncture alone or shock wave therapy alone is clearly surpassed by the combination of both methods.

In the author's view "S.W.A.G. - Shock wave acupuncture according to Germann" is a very effective new method, which is particularly suitable for treating painful disorders of the musculoskeletal system.

The advantage of S.W.A.G. for the patient, in addition to its excellent therapeutic power, is that it is virtually free from side effects. The advantage for the physician is that S.W.A.G. is very safe and easy to use.

Addendum: The method was presented internationally by the author for the first time in November 2010 at WFAS - World Congress of Acupuncture in San Francisco, where it was very positively received.

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Literature references

D. G. Simons, J.G. Travell, L. S. Simons: Handbuch der Muskel-Triggerpunkte - Obere Extremität, Kopf und Rumpf. Urban & Fischer

W. Bauermeister: Schmerzfrei durch Trigger-Osteopraktik. Südwest Verlag

C. Davies, A. Davies: Arbeitsbuch Triggerpunkt-Therapie. Junfermannsche Verlagsbuchhandlung

Dreisilker U.: Stoßwellentherapie in der Praxis - Enthesiopathien. Level 10 Buchverlag

Everke H.: Mitteilung aus der Praxis. Behandlung von Asthma mit Stoßwellen Akupunktur -vier Fallberichte. Dt. Ztschr. f. Akup.
50, 1/2007, S. 19-22

Everke H.: Druckwellen-Akupunktur. Eine neue Methode (Teil 1). medicalsports network 02/09, S. 56/57

Everke H.: Druckwellen-Akupunktur bei Atemwegserkrankungen - Eine neue Behandlungsmethode. CO'MED Fachmagazin (2009) 1:42-46

G. Stux, N. Stiller, B. Berman, und B. Pomeranz: Akupunktur - Lehrbuch und Atlas. Springer Verlag, Berlin 2007

Source: Translation of article "S.W.A.G. - Stosswellen-Kombinations-Akupunktur nach Germann" published in CoMed, 05/2011, pp. 18-20