

**Report given to the World Congress on Osteoarthritis
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Use of Sonotron As Local Anti-Inflammatory Therapy

Initial Therapeutic Experience Using the Sonotron

This communication has the scope of illustrating the characteristics and properties of Sonotron to put in evidence the therapeutic possibilities, to show in particular when the analgesic effect that Sonotron produces can be more efficacious especially if it is reported with pathological basis.

When is it used?

In cases of articular joint pain with clinical manifestations with more or less localized arthrosis, if this is the consequence of a post-traumatic inflammatory state or as a result of a pathology of a different nature.

What is it?

It is a device capable of producing a low radio frequency pulsed at a low sound frequency.

The generator produces a signal with a frequency equal to 430 KHz followed by a subsequent frequency with a signal of 3 to 5 KHz corresponding to a sonic wave with the function to make possible the resonance of the said pulsed radio frequency wave with the tissue of the patient under treatment.

What does it do?

The effect in using Sonotron is analgesic with reduction of symptomatic pain and the state of the articular inflammation.

Where does it work?

The action functions, in particular, on the synovial fluid reducing the amount of acid phosphatase that generally creates an increase of dead cells in the synovial concentration and the protein concentration and the permeability of the microcellular besides an increase of corresponding enzymatic lysis.

How long is the therapy?

The base therapeutic scheme represents a significant novelty if we compare to all other existing treatments. Naturally, the administration of one or more Therapeutic Units depends on the area desired to be treated, of your basis of use and the expertise of the user.

Each Therapeutic Unit has a duration of 15 seconds. The amount of Therapeutic Units is proportional to the joint to be treated is delivered from the tube section of the hair dryer shaped Applicator, which is rotated above the treatment area describing a circle of a diameter of 2-3 cm larger than the diameter of the tube with each rotation completed in 1-2 seconds. And, if the patient senses excessive heat the diameter can be increased, the speed can be accelerated and the Applicator can be moved perpendicularly to increase the distance from the tissue.

We have subdivided the patients into 3 groups and our experience we have reported here is based on a 6 month duration.

In the first group of patients we put subjects already hospitalized with deep pain spread in all parts of the body. They represent a medium age with the association of pharmacological therapy and the use of the Sonotron.

The second group is representative, instead, of younger people treated ambulatory, with sports injuries not completely related to the therapy. The involved areas are in effect those of a certain type from this type of patient (shoulder, elbow, knee and tibia).

The third group is instead extremely heterogeneous comprising bursitis trochanteric with excessive pain, pubalgia, inflammation of the popliteal, patellar tendinitis, calcified tendinitis of the shoulder, shoulder impingement syndrome, tendinitis of the Achilles and the anterior tibia and syndrome of the inside tarsus.

The common denominator of this group represents a field of chronic inflammation where generally the origin is a repetitive microtrauma.

All the evaluation that we have reported are exclusively clinical and are based on the collection of data from the records of the symptoms of pain experienced at the end of the cycle of therapy.

From the evaluation effectuated we have obtained various percentages of benefits in relation to the therapeutic treatments in the various groups examined.

In the group with the most advanced arthritis we have not seen a worsening of symptoms but have put these patients in a longer treatment regimen than that originally programmed.

From one point of view, the results particularly interesting were from the patients cataloged in the second group (young, sports).

The 20% poor results is almost completely represented from the subjects treated with Sonotron in the acute phase where probably the negative results obtained were from the heating effect.

Naturally after only a few months of treatment we can not have final conclusions but certain considerations: To optimize the results we should pursue the correct indications, preferably in single or limited joints than in poly-joints, derived from what we have initially used, and the time interval of the number of Therapeutic Units administered in relation to the dimensions of the involved joint and the grade of its pathological state.

We have also noted that the relative speed of the therapy doesn't have a notable thermic effect after the 15 seconds of administration, which is an element which will allow absolute patient compliance.

SONOTRON

Results

January 1 to June 30, 1992

Number of cases: 320

Indication	Number	Anatomy	Number	Results		
				Improved	No change	Worse
Osteo- arthritis	150	Knee	30	60	40	0
		Hand	20			
		Spine	35			
		Shoulder	44			
		Hip	21			
Post Trauma	100	Knee	77	70	10	20
		Shoulder	12			
		Ankle	11			
Other	70	Hip	28	50	50	0
		Knee	23			
		Shoulder	11			
		Ankle	8			