

## Sonotron News Flash

Northvale, New Jersey- Dr. Bruno Nani, our Sonotron Distributor in Italy, has recently informed us of his recent success at The Congress of Lower Back Pain held in Mestre, (Venezia) Italy February 6-7, 1998. At the conference a study titled "Sonotron's Efficacy in Integrated Treatment on Vertebral Osteoarthritis" was presented by Dr. Giuseppe Leoncini, a specialist in the fields of Orthopaedics and Neurology.

The results of the study showed that Sonotron Therapy combined with manipulation and KT acted significantly on spontaneous pain and pain due to mobilization. Of the treated patient group, after the second treatment, 60% had an improvement both on pain and mobilization. With a 95% improvement in most patients treated after the end of the fourth treatment. The study confirms the therapeutic advantages in treatment of lumbar cervical osteoarthritis.

"The paper presented to approximately 250 Orthopaedic Surgeons and Physiotherapists was well received and was followed up with an extensive Q&A session by the surgeons and physiotherapists attending" as stated by Dr. Nani.

# SONOTRON'S EFFICACY IN INTEGRATED TREATMENT ON VERTEBRAL OSTEOARTHRITIS

Dott. Giuseppe Leoncini

## INTRODUCTION

It is known that the problem of vertebral pain syndrome is a very important factor on the quality of one's social life. Historical data shows that approximately 50% of the population in five standard countries are suffering chronically from vertebral pain. This causes problems on the quality of life of people as well as the social expenses associated with the lack of productivity due to job absenteeism. Therefore, vertebral pain is a problem for the doctor as well as an economic problem for the patient. Very often the efficacy of current devices and treatments available are not satisfactory and usually offer only temporary relief. Also, vertebral pains are extremely variable, difficult to distinguish among spontaneous evolution, placebo and therapeutic effects.

This paper does not try to analyze all the aspects of vertebral pathology, however the aim is to create a physiotherapy protocol with the goal to check the clinical output and try to decrease the number of physiotherapy treatments given from the Health Department. The strategy that has been set up is to use manual treatment together with the Sonotron. The following goals are forecasted:

- pain reduction and new episodes prevention;
- limitation of biomechanical damages which leads to disability;
- reduction and/or cancellation of FANS (NSAIDS) and cortisone treatments;
- reduction of the number of physiotherapy sessions.

## SONOTRON PRINCIPALS

Sonotron is a therapeutic non invasive technique, made by a generator, a control unit and an applicator connected by coaxial cable. The generator output has a frequency of 430 KHZ and the wave output is comprehensive of a further signal (frequency 1 KHZ from zero to 100% through a control in front of the panel). This corresponds to a sonic wave. The two signals, radio and sonic, are addressed to the corona discharge which is in the applicator. The corona discharge is placed approximately 4 cm. from the skin of the patient. During the application, the generator works for 15 seconds during which time you can see the signal from the corona discharge.

## THERAPEUTIC INDICATIONS

The main indication is on the osteoarthritis process of different joints and vertebral joints (knees, ankle, wrist, elbow, shoulder etc.) The vertebral arthrosis is a pathology that is acting mainly on joint cartilage, the elastic and resistant tissue which covers the bone within the joint. This is a natural effect due to age and wear of the cartilage. This degeneration can create and facilitate the vertebral pain, but is not the direct cause of pain. It is important to know that sometimes the pain comes from disk problems or other pathologies not directly connected to the arthrosis.

## FOLLOW UP

The study was performed on 40 patients who received office treatments. The age varied from 42 - 62 years of age; 26 female and 14 male patients; 23 lumbar-osteoarthritis cases, 27 cervical-osteoarthritis cases, and all patients were in sub-acute or chronic phase. The Sonotron application has been combined with kinesi-therapeutic and manipulative treatment. No other physical therapy or pharmacological treatment was used in this study.

## MATERIALS AND METHODS

40 patients were selected according to the above mentioned pathology which was confirmed by x-rays. The pain was limited to the area of treatment, as well as the mobility limitation and pain on active and passive movement, and the pain was interfering with normal sleeping patterns.

### *Selection criteria:*

- between the ages of 40 - 60 years;
- no radicular impingement from disk hernia, specific infections, primitive neoplasia and congenital deformation;
- absence of severe osteoporosis or post-traumatic syndromes;
- pregnant patients or pace-maker users;
- good cardiovascular and breathing conditions to allow physical activity.

The patients were treated 4 times, once a week, followed by 10 sessions of kinesitherapy. The treatment was done first using the Sonotron, focusing the applicator on the vertebral segment, and then, thanks to the muscular relaxation due to the thermal effect of Sonotron, we could proceed to segmental mobilization technique and then to the manipulation. Then the patient was introduced to a program of KT, comprehensive of postural gymnastic, muscular reeducation, muscular stretching and practical ergonomic suggestions were given to protect the spine in different daily activities. The evaluation was done at the second session, with a pain scale from 0-4 of spontaneous pain and pain at active and passive mobilization.

### **RESULTS**

The study shows that the combined treatments of Sonotron plus manipulation plus KT act significantly on spontaneous pain and also in the pain due to mobilization. Already, from the second session we have noticed an improvement on 60% of the treated patients, both on pain and ability to mobilization (Tab.1). At the end of the 4 sessions the pain was reduced in almost all of the patients (95%) and there was total remission of pain both during the day and night (Tab. 2).

Table 1 - Frequency distribution according the symptomatology clinical variables and results after 2 sessions.

| Clinical Symptoms | Cases | Optimum | Good | No-change |
|-------------------|-------|---------|------|-----------|
| Spontaneous Pain  | 33    | 2       | 18   | 13        |
| Active Movement   | 28    | 1       | 21   | 6         |
| Passive Movement  | 22    | 3       | 12   | 7         |

Table 2 - Frequency distribution according the symptomatology clinical variables and results after 4 treatments.

| Clinical Symptoms | Cases | Optimum | Good | No-change |
|-------------------|-------|---------|------|-----------|
| Spontaneous Pain  | 33    | 20      | 11   | 2         |
| Active Movement   | 28    | 15      | 12   | 1         |
| Passive Movement  | 22    | 12      | 7    | 3         |

### **CONCLUSIONS**

The study had confirmed the therapeutic advantages in treatment of lumbar cervical osteoarthritis. The pain control is accomplished with a disappearing of the local objective symptomatology and a functional rehabilitation, which is a good index for the improvement of the joint mechanism. The pain control achieved on the second session is a testimonial reference to the therapeutic quick answer of Sonotron.

This synergetic therapeutic method has reached the forecasted goals, particularly the use of a therapy, such as Sonotron, which allows pain reduction and the reduction of the number of FKT sessions and treatment time, with a better guarantee of compliance from the patient.