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## Extracorporeal shockwave therapy of osteoarthritis of the knee

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### Background:

Osteoarthritis, the most common joint disease is a major cause of morbidity and dysfunction, especially among the elderly population. The knee joint is very frequently involved.

Clinically there is localized pain, tenderness, diminished range of motion and various degrees of inflammation.

### Methods:

We conducted a pilot study of extracorporeal shock wave therapy (ECST) using the Orthospec™, manufactured by Medispec, for osteoarthritis of the knee. Our assumption of a possible beneficial effect was based on the known analgesic effect of ECST, the anti inflammatory effect (used in the treatment of tennis elbow and calcaneal spur) and the microfracture theory of cartilage cell growth stimulation and matrix formation.

A group of 24 patients, 11 men and 13 women, with severe osteoarthritis of the knee, who went through most of the conventional treatments without success and were candidates for total knee replacement surgery, were treated with ECST once a month for three consecutive months. The follow-up was conducted with the 'KNEE INJURY AND OSTEOARTHRITIS OUTCOME SCORE ( KOOS)' (which is based on the WOMAC questionnaire ) before each treatment and one month and three months after the last one.

### Results :

According to the repeated measure statistical test, there was a significant difference (  $p=0.001$ ,  $f=8.932$  ) between the scores of the five questionnaires given. Using the paired comparison test to measure the strength of the differences on a time scale, comparing the pretreatment score to the score three months after the last treatment, we found out that ECST produced a statistically significant improvement in pain ( $P=0.001$   $F=14.082$ ) and function ( $P=0.001$ ,  $F=12.449$ ).

### Conclusions:

According to the clinical and statistical findings, ECST has a beneficial effect on osteoarthritic knees. Being a pilot study, more research should be carried out in order to strengthen our results, establish the optimal level of energy of the shock waves, the ideal dosage and interval between treatments and by a longer follow-up find out how long the beneficial effect lasts. However, our findings give a new encouraging direction to conservative treatment of osteoarthritis that is efficient, cost effective and improves compliance.