

# Extracorporeal Shockwave Therapy for Bone Pathologies

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## Introduction:

The aim of this study was to evaluate the effect of shockwave treatment in non-unions and delayed healing fractures, stress fractures and hip necrosis, with an electro hydraulic high energy device (Ossatron-HMT) at the Hospital Santa Rita, São Paulo - Brazil.

## Method:

Since July 2002 until December 2004, 18 patients (8 female and 10 male) with average age 35 years (min=20, max=82 years) were submitted to shockwave therapy in different bone indications :

Ten patients with non-unions or delayed healing fractures, of which one bilateral tibia non-union, (three patients underwent conservative treatment , eight had surgery prior to shockwave therapy, one non union was operated on once , three- twice and four- more than three times).

Seven patients with hip necrosis (four - Arco Stage I, two - Arco Stage II and one - Arco Stage III),

1 patient with bilateral tibia stress fracture.

Pathologies patients sex age average

non-union - delayed healing fracture 10 2 F / 8 M 20 - 82 44

hip necrosis 7 5 F / 2 M 18 - 68 41

stress fracture 1 1 F 19 19

All cases were treated with 26-28Kv and 3000-4000 pulses per treatment session. General anaesthesia was performed and fluoroscopy was used to localize the focus of the application.

To evaluate bony consolidation of the non union and stress fracture conventional X-Ray and CT was used In the hip-necrosis the ARCO-classification was applied and MRI and X-Ray were used to assess the results.

## Results:

In six patients with non-unions, the healing was achieved. Three patients showed no consolidation and two patients are in follow up . One patient with a bilateral hip necrosis showed complete recovery of the disease , 3 showed improvement in pain and function although the MRI-images showed little changes in the damaged area and no significant modifications in size. One patient Stage III showed no modifications and one patient is still in follow up . One patient with bilateral stress fracture showed improvement in pain and function.

## Conclusion:

In this study the patients with non-unions, delayed healing fractures, stress fracture and hip necrosis showed a positive effect after being treated with shockwave therapy.