

Monopolar capacitive resistive radio-frequency 448 kHz in the post surgical treatment of femoral fracture

Objective

To evaluate the effects of **INDIBA®** Monopolar Capacitive Resistive Radio-Frequency device at 448 kHz in the treatment of pain and oedema in patients with a femoral fracture who have undergone surgery with osteosynthesis, endoprosthesis or arthroprosthesis

Material and Methods

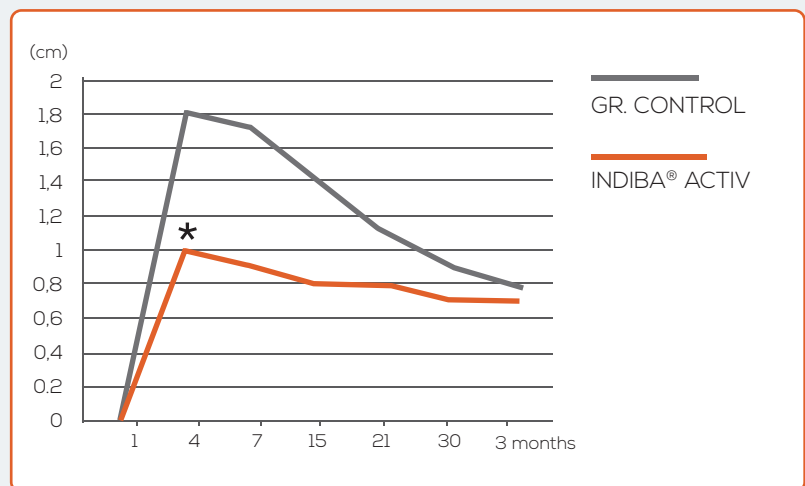
30 patients with an average age of 75 years old divided into two groups, the first group treated with **INDIBA®** together with the normal protocol of rehabilitation. The second group (control) was treated with the standard protocol for rehabilitation. Pain and muscle oedematous infiltration were evaluated.

Results

Pain showed a significant increase in both groups during the first day after surgery. The treated group with **INDIBA®** showed a statistically significant reduction of pain during the 4th ($p=0.0045$) and the 7th ($p=0.033$) day. In the control group there was no significant pain reduction (table 1).

Oedema increase in the perimeter of thigh of both groups until the 4th day reached values of 1 cm in the **INDIBA®**-group and 1.8 cm in the control group. The 0.8 cm difference between both groups showed a statically significant difference ($p=0.009$). Later these values have been reduced in a non statistically significant way in both groups until they reach a similar value in the thirtieth day (graphic 1).

Graphic 1. Oedema evolution showed a better result in the group treated with **INDIBA®**. At the fourth day oedema was significantly ($p=0.009$) lower compared to the control.



Conclusions

- Monopolar Capacitive Resistive Radio-Frequency device at 448 kHz **significantly reduces pain and oedema** during the first days after surgery.
- Results can be explained by means of a non-thermal application since the first day of surgery, this has a **positive effect on lymph and arterial microcirculation**, which apparently are the basis of these good results.

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