



AESTHETIC AND COSMETIC DERMATOLOGY (LASERS SEPARATE CATEGORY)

## EFFECTS OF CRYOFREQUENCY IN THE DIFFERENT SWINE SKIN TISSUE LAYERS: IN VIVO STUDY.

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**Background:** The cryofrequency is a therapy which was developed with the combination of cold (cryotherapy) and heat (radiofrequency) application, causing a thermal shock effect on adipose tissue. The thermal shock is believed to alter local metabolism.

**Objective:** To investigate the effect of cryofrequency on the adipose tissue and dermal tissue of a mini pig in experimental model.

**Materials and Methods:** In a small swine of the *S. domesticus* species, male mini-pig, 30 kg was applied cryofrequency in the monopolar and bipolar form, 450 w, abdominal and dorsal region (10cm<sup>2</sup>) respectively for 8 minutes. After 04 applications, the histological analysis and immunohistochemical evaluation were performed.

**Results:** A temperature variation was observed comparing each layer of the skin during the application, the superficial part became colder (approximately 20 degrees during the experiment while the deep part (3 cm below the skin) reached a maximum of 38-39 degrees (monopolar) 22-26 degrees (bipolar). An increase of collagen fibers and of blood supply was observed after cryofrequency application. There was a decrease in adipose tissue with the use of monopolar cryofrequency. Bipolar form increases the number of fiber collagens, blood vessels, and fibroblasts, but no reduction of adipose tissue was observed. Regarding the connective tissue, extensive areas of collagen deposition were observed, as well as a great amount of newformed collagen fibers. In the immunohistochemical results, type I collagen predominance was observed in both forms of application and presence of HSP 47 and HSP27 heat shock proteins, in addition to HSP 90, which confirms the apoptosis response in adipose tissue.

**Conclusion:** The cryofrequency presents positive results in the reduction of adipose tissue





and tissue flaccidity in these conditions studied.

