

IMPROVEMENT OF CELLULITE WITH ACOUSTIC WAVE THERAPY (AWT®): RESULT OF A STUDY ON 21 PATIENTS WITH OBJECTIVE MEASUREMENT.

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INTRODUCTION

Cellulite, although not considered a disease but as a purely cosmetic problem, affects more than 90% of post pubertal women. Sometimes it can lead to negative consequences, mainly from psychological point of view (low self esteem). Its pathophysiology is complex.

Cellulite is a topographical alteration in which the skin acquires a so called "orange peel" aspect or mattress. Its pathophysiology involves alterations to the adipose tissue and microcirculation causing fibrosclerosing of the connective tissue. It is a non inflammatory, degenerative condition, producing alterations to the hypodermis.

Anatomically, the cutaneous alterations found in cellulite are largely due to fibrosis of the connective tissues present in the dermis and / or in the subcutaneous fat.

OBJECTIVE

The goal of this study is to demonstrate the efficacy and safety of AWT® in the management of cellulite. To demonstrate this we used a clinical evaluation by comparing before and after pictures as well as an objective measurement method by using a 3-D imaging system.

MATERIALS AND METHODS

Treatment was performed on the lateral aspect of the thigh of 21 patients, all female, with the D-ACTOR® 200 by STORZ MEDICAL AG (Tägerwil, Switzerland). The D-ACTOR® 200 is a vibrating massage system that operates by compressed air to perform pulse activation therapy on target muscles and tissues. 6 AWT® treatment sessions have been performed within 4 weeks. 3000 pulses have been applied to an area of approximately 10x15 cm located on the thigh. Follow-up visits were performed 1 week and 12 weeks after treatment. Changes of the skin structure were evaluated using the DermaTOP System (Eotech, Paris, France). Skin elasticity measurements were performed using the DermaLab Device (Cortex Technology, Hadsund, Denmark). No anesthesia was needed as the procedure is almost painless. Patients only feel a vibrating sensation. A redness of the treated skin is typically seen a couple of hours after the session.

RESULTS

The measurements with 3D topography scan have shown that dimples can be reduced when treated with AWT®. There is a statistically significant improvement between the treated and untreated side for the volume parameters (elevations and depressions), as well as for the roughness parameter after the treatment period (1-week follow-up). At 3-month follow-up, while the treated legs maintain improvement, the untreated legs match the improvement of treated legs, suggesting a systemic treatment effect. The skin elasticity results show an obvious positive improvement after the treatment. The skin elasticity value E is statistically significantly improved, while the Visco- Elasticity value VE trended toward improvement but this was not statistically significant. In summary, cellulite treatment with EPAT® results in statistically significant temporary improvement in the skin texture and elasticity. There were no side effects observed.

CONCLUSION

This study on a small number of patients confirms the safety and efficacy of AWT® in treating the cosmetic appearance of cellulite under controlled standardized treatment- and follow up-conditions. There is a clear benefit for patients in reducing the cellulite aspect by using acoustic wave therapy (AWT®) 1 week after the last treatment (follow-up 1). The observed differences between treated and untreated legs are marked with regard to the visual parameters of dimples (elevations and depressions), skin roughness, and skin elasticity. This study demonstrates that AWT® with D-ACTOR® 200 improves the visual appearance of cellulite in the gluteal-femoral region. While this study focused on the cosmetic effects of EPAT®, it is theorized that the results achieved by acoustic wave stimulation may have resulted in improved lymph-drainage and micro circulation within the tissues. At follow-up 2 (3 months after the last treatment) the result is not only maintained but also the control leg is being improved. This could be explained by the systemic effect of AWT®. The EPAT® treatment with D-ACTOR® 200 appears to be a safe and effective treatment.

