

Pilot study on D-Actor, C-Actor and combined treatment

## Acoustic wave therapy for cellulite

*Dr. med. Gerhard Sattler, from the Rosenparkklinik in Darmstadt, Germany, reports on a pilot study into the treatment of cellulite using acoustic wave therapy (AWT).*

Cellulite affects at least 80% of women, for some of whom it is an enormous problem. It is not necessarily linked with age or excess weight; cellulite can affect young, slim women too. It is caused by the coarser fat cells found in women, the thinner epidermis, the thinner connective tissue septa and the way in which they are arranged (in men these tend to be parallel to the surface of the skin, in women they are vertical to it). This results in the formation of columns that bulge outwards. The tissue pressure affects the microcirculation, causing more oxidative stress in the tissue, which encourages the build-up of tissue and the formation of dimples.

### Increase in skin firmness

It was shown even in preliminary studies that AWT improved the appearance of the skin. Elasticity was increased, the firmness of the skin (measured by ultrasonography) improved, lypolysis increased in the tissue, and oxidative processes were measurably reduced.

The aim of this descriptive pilot study was to test three variants of AWT in women with significant cellulite (n = 28):

1. The application of planar waves (C-Actor/CA, n = 9)
2. The application of radial waves (D-Actor/DA, n = 11)
3. A combination of both procedures (CP, n = 8)

The primary end point was a visible improvement in skin appearance at the end of treatment and three months after the end of treatment (ET) and patient satisfaction at the ET; the secondary end point was skin elasticity (n = 21). Methodology: Patients received 6 to 7 treatments over the course of 3 weeks

with the Storz Medical Duolith SD1 and the Cellactor or D-Actor applicator. With the D-Actor up to 2000 pulses were used at 2 – 3 bar; with the C-Actor a maximum of 1000 pulses were used at 0.34 bar; and with CP, up to 3000 pulses were used (CA 0.25 – 0.38 mJ/mm<sup>2</sup>, DA 2 – 3 bar, serial application). During treatment, patients were expected to feel the treatment but no pain. Areas of the skin were treated in a centripetal direction using the above dosage:

approximately 15 x 20 centimetres for the dorsal and ventral thigh areas and approximately 15 x 15 centimetres for the gluteal area. Before treatment (ST), at the ET and at the end of the 3-month follow-up period (FU), the patients were photographed and the skin elasticity measured (Dermalab from Cortex).

### High patient satisfaction

After the ET, patients completed a questionnaire. The results showed that the improvement of the skin's appearance was most evident with the D-Actor. In response to the question of whether they would recommend the therapy to others, 91%, 44% and 75% answered yes (DA, CA, CP). With DA, the women reported



Example of the effects of AWT: 27-year-old female, treatment with D-ACTOR. *Top:* Before beginning of treatment. *Center:* At end of treatment. *Bottom:* 3 months after end of treatment.

noticing more toned skin after an average of 2.5 treatments. With CA this figure was 3.8 treatments (50%) or no improvement (50%), and with CP, 3.6 treatments (87.5%) or no improvement (12.5%). Side-effects occurred in 0%, 0% and 12.5% of cases (DA, CA, CP). With DA skin elasticity altered from 10.73 MPa to 9.61/9.96 MPa (ST, ET, FU), with CA from 11.87 to 10.98/unverifiable, and with CP from 10.87 to 10.78/11.19.

Conclusion: with radial (DA) and combined (CP) treatment patient satisfaction is very high, the skin is noticeably improved and the effect is maintained over the FU of 3 months. Skin elasticity did not change significantly.

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