Use of high frequency and high power ultracavitation associated with phosphatidylcholine/desoxycholate to decrease the abdominal subcutaneous adipose tissue

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Introduction

The objective of this study is to suggest a non surgical alternative to treat the subcutaneous abdominal localized adipose tissue with the combination of a new physical method (ultracavitation) with a pharmacological one (phosphatidylcholine/desoxycholate) to make a



power synergy with the intention of obtaining an optimal result in a short period of time with fewer pharmacological risks.

Materials and methods:

•A case study of 37 healthy women patients with an average age of 49.7 years old (35 to 60) who presented localized adipose tissue in the abdominal area were suitable treatment candidates (Fig. 2). Each one of them was required to have a body mass index less than 30 and abdominal adiposity thickness superior to 20 mm.

•Patients were carefully evaluated to ensure that they were suitable for both treatments with clinic evaluations including medical history, physical examinations, blood and urine analysis and ultrasonic graphic patterns such as thickness of the adipose tissue and echographic structure (Fig. 4 a).

•The treatment lasted one month: on the first and the third week a high frequency ultrasound (3MHz) with an acoustic output of 30 W/cm^2 was used. On the second and the fourth week phosphatidylcholine (500 mg) and desoxycholate (50 mg) were used in the same area of 20 cm². Figure 2: Before the treatment

Figure 3: After the treatment



Figure 5: Echographic patterns after and before the treatment (random disorganization)

Figure 4 a,b: Echographic patterns after and before the treatment (thickness)

•No ketogenic diet was indicated.

•Three types of circumferences were evaluated at the beginning of the treatment and 25 days after the last session: supraumbilical, umbilical and infraumbilical.

•Histological examination after the first ultracavitation procedure was realized only in four patients.

Results:

•The patients' average circumferences showed significant changes after four weeks. The average sizes were reduced (Fig. 1):

8.69 cm supraumbilical

7.61 cm umbilical

5.84 cm infraumbilical

•Better results in target areas (supraumbilical) of adipose tissue with edema were identified because the ultrasonic wave propagates better in wet tissues.

The adipose tissue's thickness was diminished clinically and ultrasonographically (Fig. 3, Fig. 4 b).
All patients did not report any adverse effects.
No alterations in blood and urine levels.
The adipose tissue's pattern changed (Fig. 5).

Figure 6: Anatomopathology post ultracavitation.

Figure 7: Anatomopathology post ultracavitation

Conclusion:

The use of high frequency and power ultrasound associated with phosphatidylcholine/desoxycholate represents a safe method of body sculpting in a short period of time and shows the efficacy of a non surgical process with reduced pharmacological risks and without adverse effects during the follow-up period.

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No significant changes of the patients' weight.
Histological examination confirmed that the adipose tissue was ablated in different points (Fig. 6 and 7).

Figure 1: Patients' average circumference variation through sessions

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