Effect of WONDER Muscle Recovery Therapy among Middle-Aged People: Analytical Study on 40 patients.

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Abstract: The device based on electromagnetic emissions (HIFEM) and electrical emissions, whether considered neuro-stimulation (NMS), has proven to be effective and safe for shaping the body. The authors investigated the efficacy of a new device that synchronously delivers both emissions to build muscle and reduce fat in various parts of the body simultaneously.

Method: A retrospective analytical study was carried out in 40 patients, who received treatment with the Wonder equipment. The mean age was 44.4 years, with a predominance of males. The patients underwent 10 treatment sessions, taking measurements in the first and tenth sessions. It was obtained as results that the patients reduced weight, fat mass index and increased the muscular mass index, in addition there was a reduction in the measurements around the abdomen, waist and buttocks. It was possible to conclude that the use of Wonder equipment had very favorable results in the treated clients.

Key Words: Wonder equipment, aesthetic bodybuilding, weight loss.

I. INTRODUCTION

Wonder is a device developed by Lexter Microelectronic Engineering Systems for body shaping aesthetic procedures, strengthening muscles and reducing fat mass. The equipment, according to the information provided by the manufacturer, works with the combination of two types of emissions: Electromagnetic and Neuromuscular. This treatment offers a new vision of body procedures, proposing a new concept called "Aesthetic Muscle Building".

The equipment combines high-intensity electromagnetic and neuromuscular emissions, focused on six muscle groups, stimulating the signals from brain to the muscles; but in a more powerful way. According to the technical characteristics of the equipment, patients are subjected to 52,000 muscle contractions during a 25-minute session. The pulse width used is the largest existing in the market, being 750 microseconds, which allows a depth of action up to 16 centimeters.

As a result of these stimulations in the body, a metabolic reaction occurs, which consumes energy through lipolysis, and causes localized fat to be lost, and hypertrophy of the treated muscles.

The objective of this study was to carry out a retrospective evaluation of efficacy of the new Wonder body aesthetic treatment, in a medical clinic in Guadalajara, Mexico, with Mexican clients who were users of the treatment, and to comparatively analyze the behavior of variables such as body weight, percentages of fat, muscle mass and measurements of the abdominal, waist and buttock perimeters at the beginning and at the end of a cycle of 10 sessions.

The sessions were carried out according to the protocol indicated by the manufacturer, with a frequency of two weekly sessions for a period of 5 weeks.

Of all pre-established programs found in the equipment software, it was decided to use a combination of them, the most used being the Hypertrophy, Definition and Cellulite programs. The patients started with intensities between 16 and 20 points and gradually increased them, always taking their tolerance to the equipment's discharges as the main criterion, although no unpleasant sensation of pain or discomfort was reported.

II. METHODS

40 patients were enrolled in an analytical, retrospective, non-randomized study and each of them received 10 treatments with Wonder device. The data was taken from the files of clients, who completed the cycle of 10 treatment sessions, with a frequency of 2 weekly sessions for a period of 5 weeks, in which measurements were made in the first and after tenth sessions. Professional digital Bioimpedance and measurements with a tape measure were used to measure the abdominal circumference, waist, buttocks and extremities.

ANALYZED VARIABLES
• Age
• Sex
• weight in kilograms
• Body Fat Index (BFI)
• Muscle Mass Index (MMI)
• Waist or abdomen circumference in cms (measured at the midpoint between the last rib or costal edge and the top of the iliac crest)
• Gluteal or hip circumference in cms (perimeter that passes through the most protruding region of the buttocks, which corresponds to the maximum perimeter)
• Arm circumference in cms (measured with the tape measure at the middle of the arm, at the mid-acromion-radial point. Patient standing with the arm extended and relaxed).
• Leg circumference in cms (the measurement was taken at the midpoint of the thigh, which is located at the midpoint between the inguinal fold and the upper end of the patella).

III. RESULTS

In this study, the male sex predominated. The average age was 44.4 years, among women the average age was 57.5 years and in men 40.3 years. 25% of the patients treated were women and 75% were men.

A. BODY WEIGHT.

Figure 1 shows the graph of the decrease in Total Body Weight between the first and the tenth session of Wonder, regardless of the program required. Giving an average weight difference of 2.84 percentage points. The patient with the least weight loss was a 54-year-old woman with a difference of 1 kg in weight. In this case, the programs that were worked on were hypertrophy and definition. The greatest weight loss occurred in male patients, who lost their starting weight by more than 6 kg. All patients showed a reduction in initial body weight compared to the end, in a period of 5 weeks.

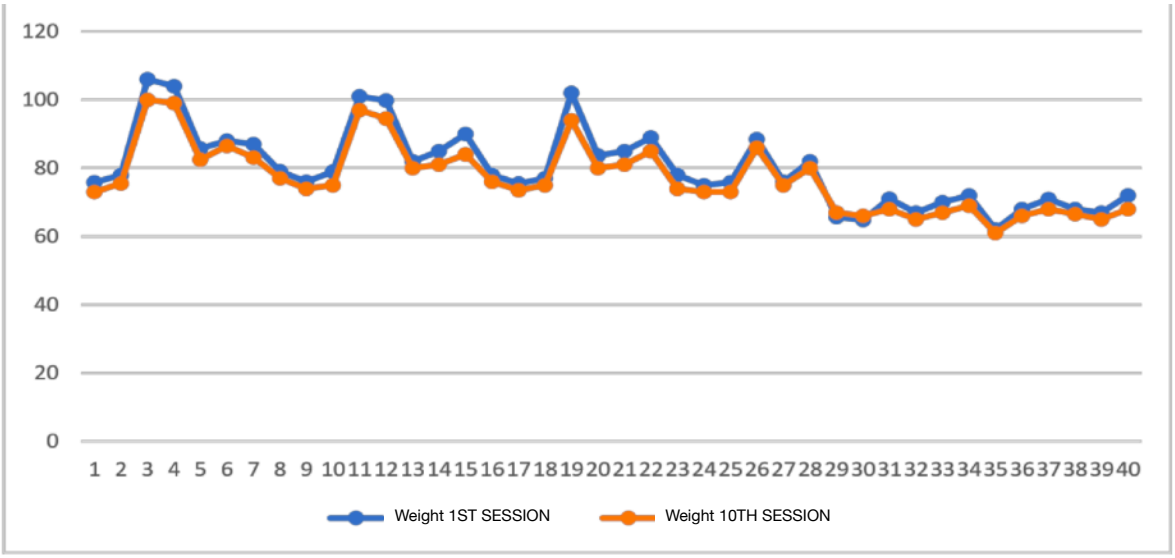

Fig. 1. Graph of weight variation during treatment.

B. MUSCLE MASS INDICES (BMI) AND BODY FAT INDEX (BFI)

During the study, a notable difference was found in terms of Muscle Mass Index (MMI) and Body Fat Index (BFI). The biggest difference were found in the reduction of body fat of 2,345 percentage points of the total series. The patient with the lowest BFI decrease had an index of 0.1, corresponding to patient 10. With a 20.2 percentage point difference between 10 and 1 treatment session, patient number 19 was the one with the greatest fat loss.

Regarding the Muscle Mass Index, the gain was 2.0 percentage points, which is important to note, if we take into account that one of the main objectives of using Wonder is to reduce fat mass and increase muscle mass. The patient with the lowest MMI conversion did so at 0.5 (patient 16). Although the overall mean gain was 2 points, patient 26 had a 3.1 MMI change from baseline. This patient undertook a hypertrophy program with a final tolerable intensity for hypertrophy of 40> The patient who experienced the least changes in MMI also trained

with the Hypertrophy program, but he had a very low tolerance and took a low average intensity of 15. The intensity at which the Wonder programs are worked seems to influence the results achieved, as better results were obtained in patients who endured higher intensities.

As the patients requested an increase the intensity, the muscle mass growth was greater, as the resistance of the muscles to the passage of the current caused greater muscle contractions and post-treatment the feeling of exhaustion was also more significant.

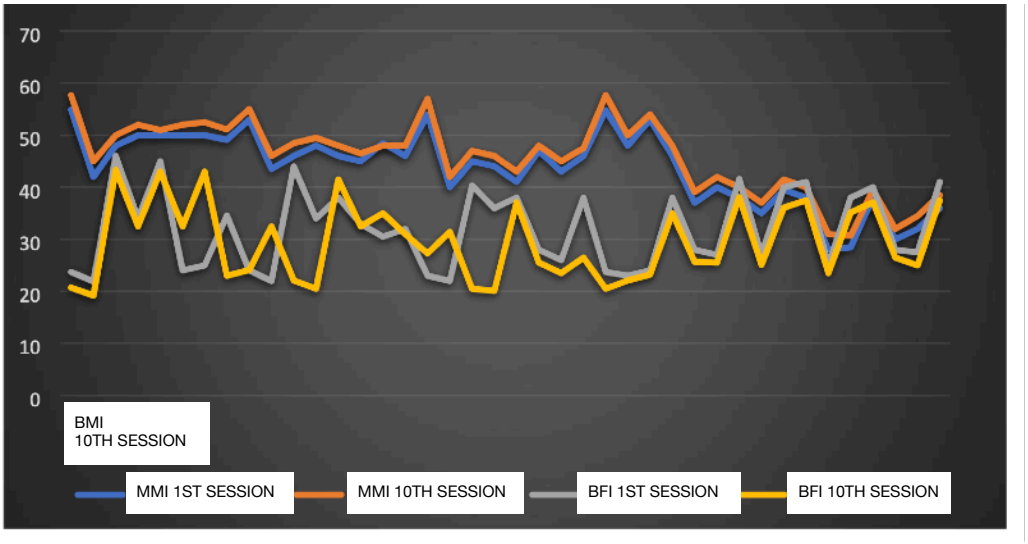

Fig. 2. Comparative chart of BMI and BFI.

C. MEASUREMENT OF THE PERIMETER OF ARMS.

Regarding the comparison of the diameter of both arms, the general behavior was the decrease, with an initial average of 32.95 for session 1 and in 32.6 after session 10, resulting in an average difference for the right arm of 0.35. When referring to the left arm we can say that the percentage difference was negative of 0.325, so it can be affirmed that during the treatment with Wonder the left arm in general did not experience any changes in diameter. These changes were of minimal mathematical impact, and of less significance.

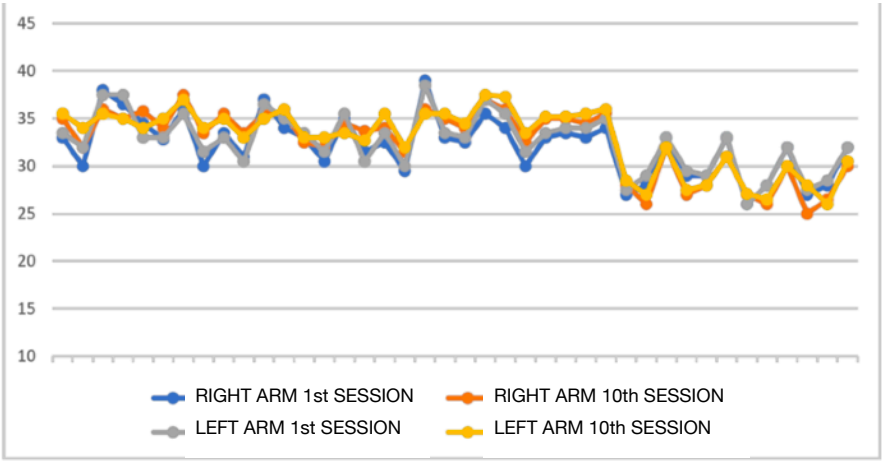

Fig. 3. Graph of variation of the perimeter of the arms during the treatmen

D. MEASUREMENT OF LEG CIRCUMFERENCE.

Regarding the comparison of the diameter of both legs, the general behavior was the decrease, with an initial average of 55.435 for session 1 and 55.325 after session 10, resulting in an average difference for the right leg of 0.11. Regarding the left leg, we can say that the percentage difference was negative of 0.01, practically negligible. In both legs, the difference between sessions is not significant, but as in the arms, the left leg resulted in a negative balance, so attention must be paid to this data to prepare the treatment plan. The work with Wonder for both legs did not show a significant trophic change result.

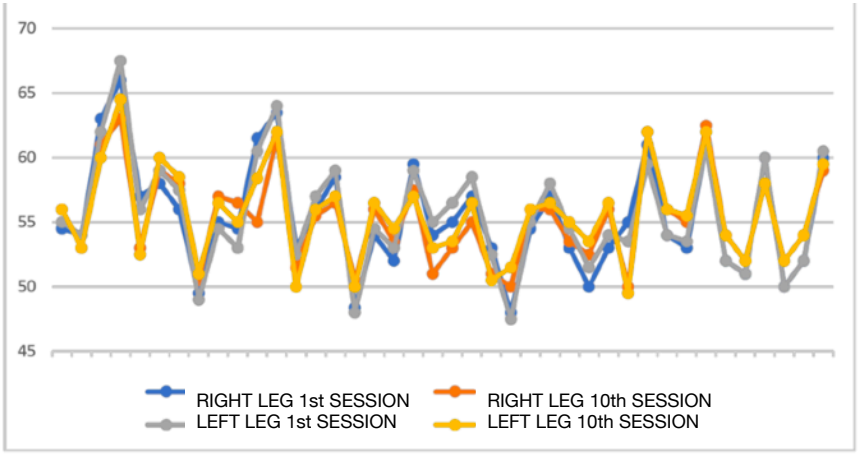

Fig. 4. Variation graph of the leg circumference during treatment.

D. WAIST CIRCUMFERENCE MEASUREMENT.

When comparing the average results between the first and tenth Wonder sessions for waist diameter, the percentage difference was 5.35 centimeters, resulting in significant visible changes. The patients who experienced less waist reduction did so by 3 centimeters and we found patients with a waist reduction of more than 10 centimeters. This reduction is comparatively very significant.

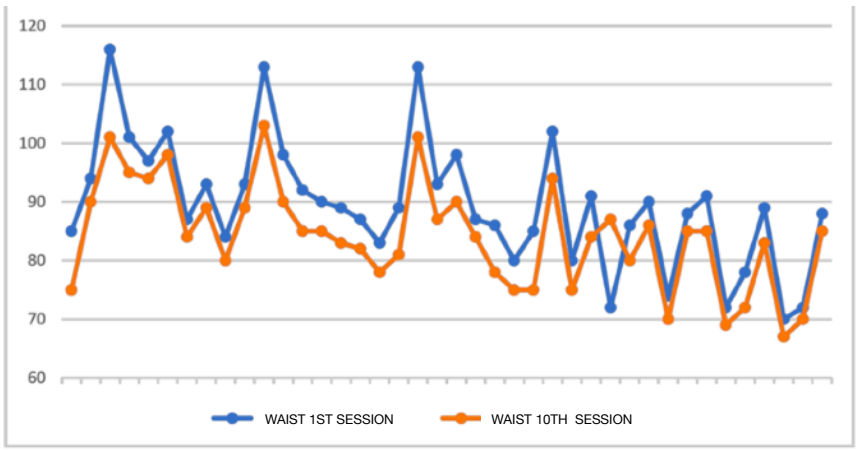

Fig. 5. Graph of variation of waist circumference during treatment.

E. ABDOMEN CIRCUMFERENCE.

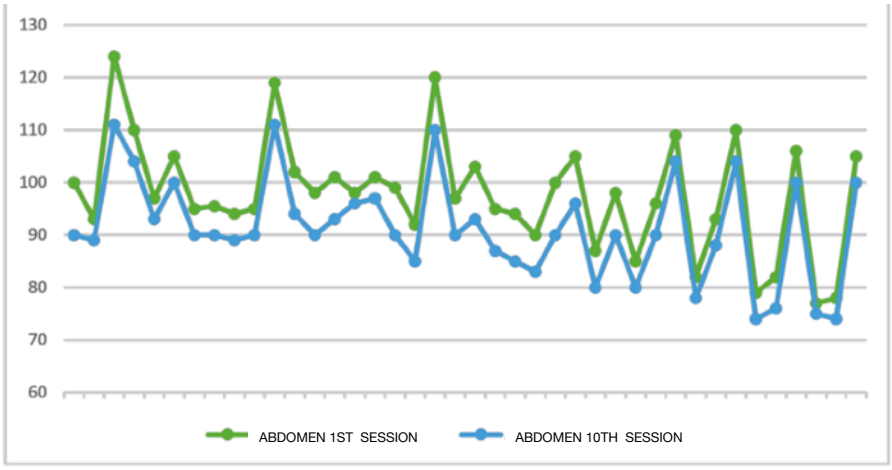

Fig. 6. Variation graph of the abdominal perimeter during treatment.

When comparing the average results between the first and tenth session of Wonder for the diameter of the abdomen, the percentage difference was 11.51 centimeters, resulting in significant visible changes. The patients who had less abdomen reduction, was 2 centimeters and we found patients with abdomen reduction of more than 10 centimeters. This reduction is comparatively very significant, showing the validity of Wonder therapy for reducing localized fat around the abdomen.

F. GLUTEUS CIRCUMFERENCE.

When we talk about the comparison in the size of buttocks between sessions 1 and 10 of treatment, the percentage difference was 2.05 centimeters, although this is not greater than the decrease in the size of abdomen or waist, it shows a positive decrease in the size of buttocks and a favorable effect of the treatment.

On the other hand, 30 patients used the Hypertrophy, Definition and Cellulite programs combined in their treatment. The most used programs were the Definition and Cellulite programs. In the hypertrophy program, 13 patients started with a tolerable intensity of 20 and 16 patients with a tolerable intensity of 15, these being the most common at the start of treatment.

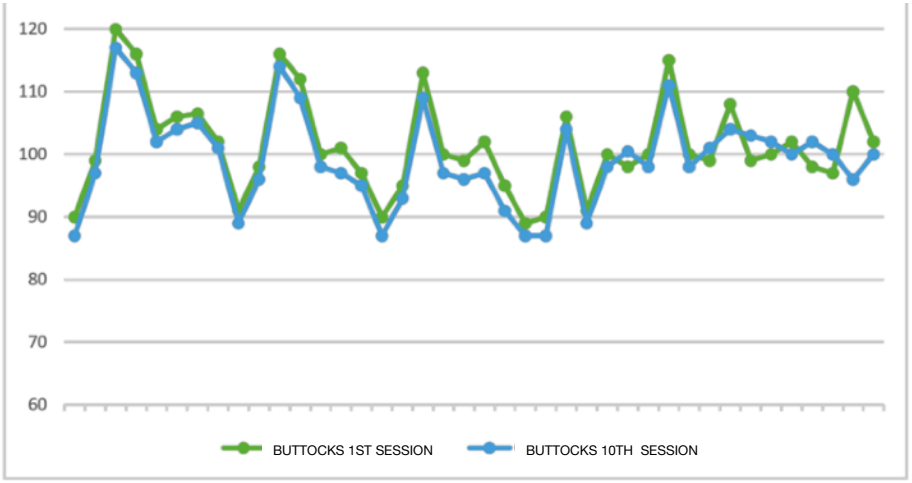

Fig. 7. Variation graph of the circumference in the gluteal area during treatment.

All the patients who used the Hypertrophy program finished the tenth session with higher tolerable intensities than the initial ones. The Definition program was used by 37 patients, of these 36 increased the tolerated intensity between the first and the tenth session and only one patient reduced it.

The Cellulite program was also used by 37 patients, and all of them finished at higher intensities than the first session. Undoubtedly, the use of different Wonder programs along with the treatment of cellulite, to achieve hypertrophy or define body silhouette and their different intensities affect the changes achieved by patients during the treatment.

G. PATIENT SATISFACTION AND SAFETY.

In the treated group, 100 percent of patients reported satisfaction with treatment results.

The treatments were comfortable and without any side effects.

IV: DISCUSSION

Non-invasive body contouring procedures are growing in popularity as patients seek ways to avoid the downtime and risks associated with surgical procedures.

The average age of the patients who underwent the Wonder treatment was over 40 years and in the women over 57 years, which is very significant, since it could be assumed that this technology would be associated with or aimed at young people, who would like to show a more muscular body, however. Since Wonder is available in Aesthetic Medical Clinics, it gives middle-aged people of both sexes a solution, who are looking for anti-aging aesthetic treatments to improve body areas and also displays the interest of these age groups in maintaining an aesthetically acceptable physical appearance.

Most of the people who took the Wonder treatment had as a main objective of reduction in weight and body fat, located at the areas of abdomen, waist and hips, which corresponds to the changes in body that happens with the passage of years, because of multiple reasons. The results showed after 10 treatment sessions, in a short period of time, Regardless of the lifestyle and diet of these people, there was a decrease in body weight in all patients, the body fat index decreased and patients increased the muscle mass index, changing the percentages of fat and muscle that make up body weight, thus meeting the expectations from the Wonder treatment, and aesthetically achieving more defined bodies.

The decrease in localized fat was also very significant in the abdominal regions, at the waist level, and there was also a decrease in the buttocks perimeter. It is important to note that in the buttocks region, after the age of 40, important changes occur , both in women and men, given the hormonal changes, sedentary lifestyle, overweight and atrophy that comes with age, among others, manifested by loss of tissue tone, sagging buttocks and perimeter fat

deposits, especially at the level of the hips, more significant in women and in overweight people.

We understand that the decrease of a few centimeters in the perimeter of the buttocks in these people, after treatment with Wonder, is due to the reduction in fat mass, the toning and replacement of tissues in that area, being very satisfactory, and that said results are not comparable, nor can they be equated with that of the buttocks in young people.

All the patients who took the Wonder treatment were very satisfied with the results achieved; as well as with the changes in their body. Another reason for satisfaction was the improvement of Skin texture and in particular the decrease in cellulite. The Cellulite program worked on 95% of middle-aged Wonder users.

The analysis shows that the combination of the different programs of the Wonder team was important, and the progressive increase in the intensity tolerated during the treatment sessions in both sexes is important to achieve the results of fat loss and muscle gain at these ages.

V. CONCLUSIONS

The objective of this study was to verify the efficacy of treatment with the Wonder device in to reducing the fat mass and improve the figure among middle-aged people, and we have obtained results that we consider highly satisfactory.

In 100% of the cases, a significant decrease in fat mass, an increase in generalized musculature and decrease in the perimeter of abdomen and legs were observed. Likewise, the increase in strength and the improvement of the physical conditions of the patients was evident.

Note: The authors of this study do not have labor or professional relations with Lexter Microelectronic Engineering Systems and have not received any economic remuneration for their performance.

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