Evaluation of the effectiveness and safety of the "Reflexology method for reducing excess body weight and body shaping (Mukhina MM)". Publication 1: Dynamics of body mass and volume

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The reflexology method for reducing excess body weight and body shaping (Mukhina M.M.) consists in correcting the psychoemotional and physiological state of overweight persons using auricular and corporal reflexotherapy in combination with a reduction diet (against the background of leveling the motivational and behavioral characteristics of eating behavior personality) [1, 2, 7, 8, 9].

Previously, we have substantiated the criteria for assessing the effectiveness and safety of this method [1]. The main indicator of the effectiveness of the method is the achieved result in reducing body weight and volume. Subsequent publications will be devoted to the study of the dynamics of the main indicators of patient health in accordance with our proposed criteria for assessing the effectiveness and safety of the method under study.

The purpose of this study was to study the dynamics of body weight and volume when using the reflexotherapy method to reduce excess body weight and body shape correction (the method of Mukhina M.M.).

Materials and methods

The study was carried out on the basis of the Federal Scientific Clinical and Experimental Center for Traditional Methods of Diagnostics and Treatment of the Federal Service for Healthcare of the Russian Federation (FNCECTMDL of Roszdrav) in the period from April 14 to October 17, 2005 (a total of 5 reflexotherapy sessions).

Material and technical equipment of the method is standard for auricular and corporal IRT [1, 2, 7, 8, 9].

The study group consisted of 33 people, including 30 women and 3 men. The age of the patients ranged from 19 to 60 years and was less than 20 years in 1 patient, from 21 to 30 years in 8, from 31 to 40 years in 10, from 41 to 50 years in 9, from 51 to 60 years - in 6 patients. The average age of patients in the study was 38.3 ± 3.9 years.

The duration of observation of one patient averaged 158.1 ± 12.3 days.

To objectify the data obtained during the study, a systematic measurement of body weight and basic body volumes (corpometry method) was carried out, followed by statistical processing of the results.

As a criterion for objectifying the nutritional status of patients and determining the presence and degree of obesity, as well as the dynamics of weight change during the study, the body mass index (BMI), or Quetelet-2 index [1, 10], which is calculated as kilograms per body length in meters squared: BMI = weight (kg) / height^2 (m), [kg / m^2].

In accordance with the WHO recommendations, normal BMI values in adults are in the range from 18.5 to 24.9 kg / m^2 (ideal weight); BMI values less than 18.5 kg / m^2 indicate a body weight deficit, more than 25 kg / m^2 - about excess body weight. BMI value from 30.0 to 34.9 kg / m^2 correspond to obesity of the I degree, 35.0-39.9 kg / m^2 - II degree obesity, more than 40.0 kg / m^2 - obesity III degree [10].

Research results

The dynamics of changes in body weight and volume was traced in 28 out of 33 patients, since 4 patients dropped out of the study after 1 session due to unwillingness to continue the course and 1 - for medical reasons (decompensation of type II diabetes mellitus). Of the remaining 28 patients at the start of the study, ideal weight was determined in 4, overweight - in 8, obesity I degree - in 4, obesity II degree - in 7, obesity III degree - in 5 patients.

The main reasons for gaining excess weight, according to the patients, were pregnancy, childbirth and the postpartum period, in second place were errors in diet and overeating, in third place -

operations under general anesthesia and other stressors.

During the study, body weight and BMI objectively decreased in all 28 patients who remained in the study after the 1st session of acupuncture (IRT). The minimum weight loss was 3.9% and was recorded in the patient 19 years old with obesity of III degree, who stopped the course after 2 sessions of IRT due to objective difficulties associated with the need to come to Moscow from another city. The maximum decrease in body weight was 21% and was recorded in 2 patients with grade II obesity and 1 patient with grade I obesity who completed the full course of 5 sessions.

Average weight loss in the group of 28 patients were 13.3 ± 1.8% (P = 0.95). Taking into account that the best results of weight loss were obtained in patients who attended the maximum number of IRT sessions, we analyzed the dependence of the amount of body weight loss on the duration of the course. In 2 patients who left the study after 2 sessions, the body weight loss was 3.9 and 10.0%, respectively. In 7 patients who underwent a course of 3 IRT sessions and 7 patients who attended 4 sessions, the mean values of body weight loss did not practically differ and amounted to 11.8 ± 2.5% and 11.5 ± 4.0%, respectively (P = 0.95).

The greatest average body weight loss (16.2 ± 2.3%, P = 0.95) was noted by us in the group of patients who attended all 5 appointments (Table 1).

Table 1

Dependence of the amount of body weight loss in patients on the number of IRT sessions (n = 28)

Количество сеансов ИРТ	Потеря массы тела в группе, % от исходной
Два (n=2)	7,0*
Три (n=7)	11,8±2,5
Четыре (n=7)	11,5±4,0
Пять (n=12)	16,2±2,3

* The calculation of confidence limits in this case was not carried out
due to the small number of patients in the group.

When analyzing the dependence of the value of body weight loss on the age of patients, no statistically significant differences were obtained in the groups of patients under the age of 40 and over 40 years.

In the course of the study, a group-by-group analysis of the decrease in body weight in patients was carried out depending on the initial body weight (Table 2).

table 2

Dynamics of body weight in patients depending on the initial body weight (n = 28)

Исходная масса тела у пациентов	ИМТ до лечения, кг/м²	ИМТ после лечения, кг/м²	Потеря массы тела, % от исходной
Норм. масса (n=4)	25,0±0,1	23,0±1,2*	11,2±4,1
Изб. масса тела (n=8)	28,4±1,1	24,5±0,7*	13,8±3,2
Ожирение 1 ст. (n=4)	33,2±1,5	28,3±1,3*	14,4±4,0
Ожирение 2 ст. (n=7)	37,0±1,3	32,1±2,3*	13,5±4,2
Ожирение 3 ст. (n=5)	43,1±2,5	37,5±2,4*	12,9±4,6
Все пациенты (n=28)	33,4±2,4	29,1±2,1*	13,3±1,8

* p <0.05

At the start of the study, the ideal body weight was determined in 4 patients. All 4 patients during the study showed a decrease in body weight, however, the BMI did not go beyond

the lower limit of the norm. The minimum decrease in body weight in this group was 6.5% in relation to the initial body weight, the maximum - 16.4%. The average decrease in body weight in patients with baseline normal weight was 11.2 ± 4.1% (P = 0.95).

Overweight (BMI 25-29.9 kg / m2$_2$) was determined in 8 patients at the start of the study. It is important that in all patients during the study, body weight reached normal values, the average weight loss in the group was 13.8 ± 3.2% (P = 0.95).

Of the 4 patients with grade I obesity, 1 patient achieved normal body weight, and 3 patients reduced their body weight to overweight (BMI 25-29.9 kg / m2$_2$) during the study. Moreover, one patient, despite a good rate of weight loss, stopped the course of her own free will after 3 IRT sessions. The average weight loss in the group was 14.4 ± 4.0% (P = 0.95).

Grade II obesity was recorded in 7 patients at the start of the study. Of these, 3 during the study of the patient reached the level of overweight (BMI 25-29.9 kg / m2$_2$) in 3 sessions and refused to continue the course. In 3 patients out of 7, grade II obesity turned into grade I obesity, of which 2 patients initially violated nutritional recommendations and interrupted the course early. The average weight loss in the group of patients with grade 2 obesity was13.5 ± 4.2% (P =0.95).

Of the 5 patients with grade III obesity, in the course of the study, obesity turned into grade I obesity in one patient, and grade II obesity in 3 patients. Of these, 1 patient completed the course ahead of schedule after 3 sessions, referring to re-gaining weight (the patient initially violated nutritional recommendations) and 1 patient with a minimum percentage of body weight loss stopped the course after 2 sessions due to objective difficulties associated with the need to come to Moscow from another city. The remaining 3 patients with grade III obesity were recommended to continue the course. The average weight loss in the group of patients with grade III obesity was12.9 ± 4.6% (P = 0.95).

In the course of the study, along with systematic monitoring of changes in body weight, corpometry was performed in all 28 patients, which included measuring the volume of the chest, waist, and hips. To assess the dynamics of these indicators in the course of the study, an individual comparison of the initial body volumes and the corresponding volumes at the time of the end of the program was carried out with the calculation of the percentage difference. In women, the average decrease in breast volume was 10.3 ± 1.3% (P = 0.95), waist volume - 13.1 ± 1.8% (P = 0.95), hip volume - 8.9 ± 1 , 2% (P = 0.95) (Table 3). In 2 men who attended more than 1 IRT session, the decrease in abdominal circumference was 10.3% and 15.7% of the initial, the rest of the body volumes in men remained constant due to the prevalence of abdominal obesity.

Table 3

Reduction of the main indicators of corpometry in patients depending on the initial weight body (n = 25 *)

Исходная масса тела у пациентов	Уменьшение объемов тела, в % от исходных		
	Окр. груди	Окр. талии	Окр. бедер
Норм. масса (n=4)	7,4±2,1	13,3±3,9	9,0±2,1
Изб. масса тела (n=8)	11,0±2,2	13,4±3,8	8,7±2,6
Ожирение 1 ст. (n=4)	14,1±1,9	15,3±5,1	8,2±4,1
Ожирение 2 ст. (n=7)	9,2±2,9	12,2±4,8	9,4±2,6
Ожирение 3 ст. (n=5)	10,2±1,6	12,3±1,3	9,2±2,7
Все пациенты (n=28)	10,3±1,3	13,1±1,8	8,9±1,2

* When calculating the mean values, corpometry data for men were excluded (3 patients)

The discussion of the results

In the course of the study, body weight objectively decreased in all patients who attended 2 or more IRT sessions (28 people). The average weight loss in the group of 28 patients was13.3 ± 1.8% (P= 0.95).

When analyzing the dependence of the value of body weight loss on the duration of the course, it was found that the best results (average weight loss 16.2 ± 2.3%, P = 0.95) were received

in patients who attended the maximum number (five) IRT sessions.

When analyzing the reduction in body weight depending on the initial body weight, the best results were observed in overweight patients who achieved a normal BMI during the study. With an increase in the degree of obesity, there was a tendency towards a worsening of the results in terms of weight loss. Almost all patients with grade III obesity needed to continue the course of IRT to achieve normal body weight. Therefore, given the good dynamics of weight loss in patients with grade III obesity, it can be argued that in order to achieve optimal results, patients in this group need a longer course of IRT (more than 5 sessions).

At the same time, most of the unsatisfactory results of the program were associated with violations of dietary recommendations by the patients themselves, or with a lack of motivation to continue to lose weight and spontaneous early termination of the course.

Along with this, no significant differences were obtained in the loss of body weight in groups of patients of different ages, which contradicts the widespread opinion about the greater effectiveness of methods of reducing body weight in young patients.

There was no negative effect of the technique on patients with initially normal body weight; on the contrary, as a positive result, they had a decrease in the volume of problem areas.

Thus, the studied method of reducing body weight is reliably effective in patients with obesity of any degree, as well as in persons with normal body weight, as a method for correcting the volume of problem areas.

conclusions

1. The objectification of the results of the application of the investigated method on a group of patients was carried out, consisting of 33 people (in accordance with the research algorithm). The effectiveness of the method in reducing body weight and basic body volumes (including problem areas) has been shown, regardless of the initial body weight.

2. Taking into account the results obtained in this study, developed by Mukhina M.M. "The method of reflexology for overweight reduction and body shaping" is effective.

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