Anthropometric Parameters in Women of Childbearing Age with Obesity

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Abstract: World Health Organization (WHO) on obesity, overweight and obesity are now so common that they affect the health of the population more than traditional health problems, in particular, starvation and infectious diseases [1]. The prevalence of obesity increases with age, and after 50–60 years, body weight usually stabilizes [2]. According to the WHO classification, endocrine (alimentary, hypothyroid, pituitary, glandular) and simple obesity (excessive, constitutional, localized, exogenous and endogenous) are distinguished.

Purpose of the study: to study the dynamics of anthropometric parameters in women with obesity of childbearing age with various endocrinopathies.

Keywords: obesity; women of childbearing age, anthropometric indicator.

Introduction

According to the report of the World Health Organization (WHO) Committee on Obesity, overweight and obesity are now so common that they affect the health of the population more than traditional health problems, in particular, starvation and infectious diseases [1]. The prevalence of obesity increases with age, and after 50–60 years, body weight usually stabilizes [2].

Moreover, obesity is a risk factor for many diseases and is associated with a significant number of conditions leading to death. According to the WHO classification, endocrine (alimentary, hypothyroid, pituitary, glandular) and simple obesity (excessive, constitutional, localized, exogenous and endogenous) are distinguished. The basis of the basic therapy prescribed for all patients with obesity is a change in lifestyle.

Basic therapy without drug treatment is possible in patients of reproductive age with gluteofemoral type II obesity with an insulin resistance index value of less than 2.83, a leptin level of not more than 57 ng/ml, and a triglyceride content of not more than 1.38 mmol/l [5]. Despite the fact that in recent years the principles of obesity therapy have changed significantly, its effectiveness remains extremely low due to the lack of a systematic approach to this problem, there are no clear algorithms for diagnosing and treating obesity in women of childbearing age [6].

Despite the available scientific work on this issue, a number of issues remain insufficiently covered, the arguments of the authors in some cases are unconvincing. The foregoing determines the relevance of research aimed at developing a comprehensive approach to the treatment of obesity in young women, taking into account the characteristics of metabolic and hormonal imbalances, eating behavior and reproductive disorders, which can improve the quality of life of patients and reduce the risk of diseases associated with obesity.

Materials and methods

The features of reproductive health were studied in 48 women with obesity of various origins who applied for infertility inBukhara Regional Endocrinological Dispensaryin 2017–2018 The control

group consisted of 18 women with varying degrees of obesity without menstrual irregularities. According to the etiological factor, patients with obesity were divided into three groups. The first group consisted of 26 obese patients with polycystic ovary syndrome; the second group consisted of 22 patients with diencephalic obesity.

The control group consisted of 18 patients with endocrine obesity in primary hypothyroidism. the age of patients in the first group ranged from 20 to 38 years and averaged 28.30 Ѓ} 0.63 years, in the second group - 30.38 Ѓ} 0.51 years and in the third group - 28.40 Ѓ} 0. 52 years old. Anthropometric study was carried out during the initial examination, in dynamics and included the determination of height, body weight, body mass index (BMI), calculated by the formula:

BMI (kg/m2) = (body weight, kg) / (height, m2). In accordance with the BMI values recommended by WHO (1997), the degree of obesity was determined. Determination of the nature of the distribution of adipose tissue was carried out in accordance with the coefficient (ratio) of the waist circumference (OT) to the hip circumference (OB). The coefficient OT / OB more than 0.85 was regarded on the basis of WHO recommendations as abdominal obesity, less than the specified value - as gluteofemoral.

Patients were prescribed non-drug and drug therapy to reduce body weight. Non-drug therapy included general recommendations for weight measurement, daily calorie counting, and avoidance of easily digestible carbohydrates. Drug therapy included three treatment regimens in three groups of patients for 6 months.

The first group of patients was prescribed a combination of metformin (1000 mg/day) + veroshpiron (100 mg twice a week) + potassium iodide (100 mg/day) + levothyroxine (50 mg in the morning) + antiandrogen drugs + antidepressants (amitriptyline, phenibut, rexetine and etc.).

The second group was prescribed a combination of metformin (1000 mg per day) + veroshpiron (100 mg twice a week) + potassium iodide (100 mg/day) + levothyroxine (50 mg/day) + metabolic therapy (piracetam, actovegin) + reduxin (15 mg / day) + antidepressants (amitriptyline, phenibut, rexetine, etc.).

The third group of patients was prescribed a combination of potassium iodide (100 mg/day) + levothyroxine (50 mg/day).

The obtained data were processed using the Microsoft Excel and Statistica 6 computer programs. Mean values (M) and standard deviations of the means (m) were calculated. The significance of differences in the level between groups was assessed by the value of the confidence interval and Student's test (p). Differences were considered statistically significant at $p < 0.05$.

Results

In table. 1 shows the distribution of patients by age in groups. As can be seen from Table. 1, the majority were patients aged 18 to 29 years — 35 cases (49.2%). As the duration of the disease increased, so did the BMI.

In table. Figure 2 presents anthropometric data for groups of patients before treatment. As can be seen from the data in Table. 2, patients with grade I obesity were the most common in all groups. The average values of WC, OB, OT/OB corresponded to the BMI indices for the groups and increased with their increase (Table 3).

At the first stage of treatment of menstrual disorders and anovulatory infertility in women with obesity, overweight was corrected. Further, the treatment was performed according to the above schemes in groups.

In the first and second groups of patients, there was a significant decrease in BMI after six months of treatment, while in patients of the third group, significant changes in BMI after treatment were not achieved. At the same time, in patients of the first and second groups with III degree obesity, after 6 months, a trend towards a decrease in BMI was achieved.

Table 1. Distribution of examined patients by age and group

Age, years	I group (n=26)	I group (n=22)	I group (n=18)
16–17	ten	eight	four
18–29	12	ten	eleven
30–44	four	four	3
Total	Total=26	Total=22	Total=18

Table 2. Average BMI values by groups of patients before treatment

Group	BMI 30.0–34.9 kg/m2		BMI 35.0–39.9 kg/m2		BMI≥40 kg/m2	
I	n = 10	33.6 ± 3.9	n=8	37.9 ± 3.3	n=4	41.2 ± 4.6
II	n=12	34.1 ± 3.6	n=10	37.6 ± 3.2	n=11	42.5 ± 3.4
III	n=4	34.9 ± 4.5	n=4	38.8 ± 3.8	n=3	43.1 ± 3.6
Total	26		22		eighteen	

Table 3. Mean values of WC, OB, OT/OB for groups of patients 6 months after treatment, cm

Group	BMI 30.0–34.9 kg/m2			BMI 35.0–39.9 kg/m2			BMI≥40 kg/m2		
	FROM	ABOUT	FROM\OB	FROM	ABOUT	FROM\OB	FROM	ABOUT	FROM\OB
I	80.3 ± 6.5*	85.7 ± 7.9*	0.94±0.05	82.3 ± 8.4*	89.5 ± 9.3*	0.94 ± 0.06	100.5 ± 8.9	107.9 ± 9.4	0.94 ± 0.06
II	79.4 ± 4.4*	86.7 ± 6.8*	0.92±0.03	83.3 ± 8.4*	89.4 ± 8.5*	0.93±0.05	105.4 ± 8.9	109.5 ± 9.3	0.97±0.06
III	89.6 ± 9.5	91.9 ± 9.9	0.98±0.02	91.6 ± 12.4	97.9 ± 11.4	0.93 ± 0.03	106.8 ± 11.8	116.5±12.8	0.92±0.05

Restoration of fertility and pregnancy were achieved in 10 patients of the first group (19.5%). In table. 3 show data on OT, OB, OT/OB for groups of patients 6 months after treatment. As can be seen from the data given in table. 3, in the first and second groups of patients there was a significant improvement in performance compared with the average data of OT, OB, OT/OB before treatment, while in patients of the third group there were significant changes in the average values of OT, OB, OT/OB after 6 months of treatment not installed.

The discussion of the results

Axis activation result≪hypothalamus - pituitary gland - adrenal glands≫is the formation of visceral obesity, insulin resistance (hyperinsulinemia), dyslipidemia and hypertension [7,8]. The consequence of endocrine and metabolic disorders is anovulatory infertility in reproductive age.

Like many pathological conditions, obesity contributes to the development of other diseases, including reproductive disorders, and aggravates already existing fertility disorders [9,10]. Despite this, the functional state of the gonads in obesity has not yet been studied enough. In the literature there are only a few works devoted to this issue, which are limited to the study of the level of total estrogens (estrone, estradiol and estriol) in obese women [11,13]. At the same time, obesity in women of reproductive age is predominantly of an abdominal nature.

After 6 months in the first group of patients there was a decrease in BMI from 43.6 to 42.5 kg/m2. In the second group, we found a significant decrease in body weight of patients by 8.8 kg. In the first and second groups of patients, there was a significant improvement in anthropometry with obesity of I and II degrees, OT, OB, OT/OB compared with the data before treatment. At the same time, in patients of the third group, there were no significant changes in BMI, WC, OB, OT/OB after 6 months of treatment. In addition, restoration of fertility and pregnancy were achieved in 18.9% of patients in the first group.

Conclusions

Optimization of the treatment of obesity in women of childbearing age is based on the development of individual programs, the choice of which is determined by the values of anthropometric indicators, the state of hormonal and metabolic status, eating behavior and personal-emotional sphere, menstrual and reproductive function.

Carrying out a complex of therapeutic measures, taking into account the developed algorithm for individual selection of obesity therapy, allows you to effectively reduce and maintain the achieved body weight, improves somatic and reproductive health in women of childbearing age.

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