SCHOLASTIC:
Journal of Natural and Medical Education
Volume 2 Issue 3, Year 2023 ISSN: 2835-303X
https://univerpubl.com/index.php/scholastic

Nutritional Obesity in Adolescent Girls Promising Steps in Therapy

Nigmatova G. M.
Tashkent Medical Academy

Article Information

Received: January 27, 2022
Accepted: February 28, 2023
Published: March 29, 2023

Keywords: *adolescent girls, obesity, diet food.*

ABSTRACT

In childhood and adolescence, we can talk about predictors of reproductive disorders, one of which is overweight. It is impossible to get rid of obesity with the help of medications, and therefore their prescription is auxiliary and is an addition to diet and exercise.

Despite the fact that the reproductive function is characteristic of an adult, the roots of its formation, as well as the occurrence of reproductive health disorders, should be sought in the interval from the moment the zygote is formed to the point of implementation of the biological function of the reproduction of offspring. Already in childhood and adolescence, we can talk about predictors of reproductive disorders, one of which is overweight. Against this background, chronic diseases are formed that require dispensary observation. Therefore, it is very important to identify risk groups for the formation of reproductive health disorders in the future[1].

The reproductive health of a woman directly depends on the critical mass of adipose tissue, an increase in body weight, and the development of obesity can lead to a decrease in fertility. Being a risk factor for the development of severe metabolic disorders, overweight in adolescent girls is accompanied by a high frequency of menstrual irregularities with hyperandrogenic manifestations, and when girls reach reproductive age - infertility, various hyperplastic processes, a high risk of developing cancer of the endometrium, ovaries, mammary glands and other hormone-sensitive organs [3,6].

According to the generally accepted point of view, anorexia and overeating leads to an increase in insulin secretion, resulting in increased lipogenesis and obesity. At the same time, adipocytes increase in size, the number of insulin receptors decreases. This contributes to insulin resistance and, as a result, a further increase in its secretion. According to another theory, the increase in insulin secretion in this group of patients is genetically determined[7].

The formation of hyperinsulinemia, on the one hand, leads to an increase in appetite, overeating and weight gain, on the other hand, to a decrease in the number of insulin receptors in response to insulin hypersecretion, which is a protective reaction to the development of hypoglycemia [2,5].The genesis of hyperinsulinemia in obesity is complex. A possible role is played by disorders of hypothalamic regulation mediated through the sympathetic and parasympathetic autonomic nervous system. There are indications of the participation of endogenous opiates, as

well as hormones of the gastrointestinal tract, in particular gastric inhibitory polypeptide, in the development of hypernisulinemia. An important place in the formation of an increase in insulin production is given to the peculiarities of nutrition.

One of the main mechanisms of the effect of sex hormones on adipose tissue is the direct regulation of the activity of lipoproten lipase, the main enzyme regulating the accumulation of triglycerides in adipocytes. Currently, two types of estrogen receptors are known - alpha and beta. It has been established that beta receptors are expressed in adipose tissue. Progesterone is also involved in the regulation of adipose tissue. It competes with glucocorticoids for their receptors in adipocytes, thus preventing the effects of glucocorticoids on adipose tissue in the late luteal phase of the cycle. It has been shown that in adolescent girls with a regular menstrual cycle, appetite depends on the level of estriol in the blood, which acts on the ventromedial region of the hypothalamus and, thereby, suppresses appetite [6,7].

In the scientific literature, obesity that developed in adolescence against the background of hypothalamic-pituitary dysfunction is described under various terms: pubertal basophilism, hypothalamic syndrome of puberty, pubertal-adolescent dispituitarism, obesity with pink striae, transient juvenile diencephalic syndrome, pubertal hypercortisolism. hypothalamic syndrome of puberty, is a disease of adolescents, the basis of which is a fundamentally reversible dysfunction of the hypothalamic-pituitary system against the background of age-related neuroendocrine changes in the body and puberty [4, 6,7].

The etiological factors of hypothalamic syndrome of puberty, include neuroinfections, craniocerebral injuries, viral infections, and chronic foci of infection. Psychotraumatic situations, eating disorders (systematic overeating, eating foods rich in fats and easily digestible carbohydrates) matter. In these cases, it is possible to assume a primary lesion of the hypothalamus with the development of clinical manifestations in the pubertal period.

The anatomical features of the hypothalamic-pituitary region determine its particular vulnerability in pathological processes in the central nervous system. The hypothalamus has an intensive blood supply and a developed vascular network, characterized by high permeability of the walls for large protein molecules, which facilitates the penetration of various toxic neurotropic agents through the vascular network [3,4].

The development of neurohumoral and metabolic disorders during puberty is not accidental. It is during this period that rapid restructuring and reactivation of individual nuclear structures of the hypothalamus occur in a short time, new functional relationships are established between the nervous and endocrine systems. Interdependent positive or negative activity is achieved by the hypothalamus-pituitary-peripheral endocrine gland system. Anabolic processes intensify, high energy costs occur, growth accelerates, body weight increases against the background of variability in the rates of physical and sexual development, lability and tension of metabolism and neuroendocrine regulation [3,6].

In the early stages of the disease, a hyperergic reaction of the hypothalamic structures and the reticular formation is noted, with a violation of the synthesis of a number of amines and neuropeptides of the brain - dopamine, serotonin, endorphin. As a result, the secretion of growth hormone, prolactin, adrenocorticotropic hormone and gonadotropins by the pituitary gland increases. With further progression, the hyperreactivity of the hypothalamic-pituitary system transforms into its dysfunction, but without violating the feedback principle and maintaining the reserve capabilities of the hypothalamic-pituitary-peripheral endocrine gland system [6].

Non-drug methods of treatment (educating patients on a balanced diet, increasing physical activity), drug therapy and surgical treatment are used to gradually reduce body weight. The basis of non-drug treatment is a rational balanced diet: hypocaloric during the period of decrease

and eucaloric at the stage of maintaining body weight, providing sufficient energy, vitamins and microelements.

Some authors believe that the best way to increase energy expenditure is to increase physical activity, while any activity that is associated with energy costs and is available to a particular patient is useful.

Drug therapy for obesity is necessary in the same way as for any other chronic disease. It has now been established that it is impossible to get rid of obesity with the help of drugs, and therefore their appointment is of an auxiliary nature and is an addition to dietary nutrition and exercise.

The pathological formation of the menstrual cycle is an extremely unfavorable factor in the formation of gynecological endocrine pathology in the reproductive period and requires observation and correction. But hormonal correction of menstrual irregularities is not an easy task, since most of the drugs used for this purpose negatively affect metabolic processes, aggravating disorders of fat and carbohydrate metabolism, and this, in turn, leads to an insufficient or inadequate response of the body to hormone therapy.

We examined 50 girls with menstrual disorders against the background of alimentary obesity and 30 practically healthy adolescents. Violation of the menstrual cycle was noted after a significant increase in body weight. To diagnose the presence of overweight and obesity, the body mass index was used, which was calculated as the ratio of body weight (in kg) to the square of height (in m2) (Quetelet index, WHO, 1997). The nature of the distribution of adipose tissue was determined using the coefficient of waist circumference (more than 88 cm) / hip circumference (WT/HB).

The study of weight-height parameters showed that the average body weight of the examined patients, depending on the degree of alimentary obesity, was 79.80±0.20; 84.89±0.39 and 96.89±0.40 kg, respectively, in women with 1st, 2nd a and 3rd degree of obesity. If at the 1st degree of obesity it remained within 0.85, then at the 2nd and 3rd degrees it increased, approaching the mark of 0.88. BMI increased in proportion to the degree of obesity, amounting to 29.10±0.06; 32.34±0.12 and 36.72±0.12 kg/m2.

The duration of obesity varied widely and averaged 2.76±0.87; 4.85±0.98 and 5.74±0.89 years, respectively, the degree of obesity.

The study of pituitary hormones showed an increase in their level in the blood serum relative to the values of a group of practically healthy individuals: TSH (1.59; 1.86 and 1.91 times), FSH (1.95; 2.2 and 2.57 times) , LH (in 1.61; 1.55 and 2.28 times, respectively, 1st, 2nd a and 3rd degree of obesity).The level of estradiol in girls with alimentary obesity and NMC tended to increase at the 1st degree of obesity, and as body weight increased, its values gradually decreased and reached the standard values. The content of progesterone in the blood serum of obese girls decreased by 15.56; 17.23 and 28.51 times. The level of testosterone exceeded the standard values of 1.31; 1.4 and 1.6 times, respectively, in groups with 1st, 2nd a and 3rd degrees of obesity. The content of triglycerides in the blood serum of girls with the 1st degree of obesity was 1.72 ± 0.08 mmol / l, in patients with the 2nd and 3rd degree of obesity, this indicator increases to 1.98 ± 0.08 and 2.85±0.11 mmol/l, respectively.These indicators statistically significantly exceed the values of practically healthy girls by 1.14 ($P<0.05$) and 1.65 ($P<0.01$) times, respectively, for the degree of obesity. The content of cholesterol in VLDL increases statistically significantly at 1.75 ($P<0.01$); 1.84 ($P<0.01$) and 4.13 ($P<0.01$) times, respectively, 1st, 2nd a and 3rd degree of obesity. The level of cholesterol in LDL at the 1st degree of obesity remains within the normative values, and at the 2nd a and 3rd degree it increases by 1.36

(P<0.05) and 2.52 (P<0.001) times, respectively. The cholesterol content in HDL is statistically significantly reduced at 1.55; 1.52 and 1.17 times with the 1st, 2nd and 3rd degree of obesity.

Consequently, in girls with alimentary obesity, there is an increase in the level of tropic hormones, estradiol and testosterone, against the background of a progressive decrease in progesterone, the severity of which depends on the degree of obesity. Depending on the degree of obesity, a mixed form of dyslipoproteinemia is noted, lipolytic and proteolytic enzymes are activated.

In our studies, the drug "Inotir" was used one sachet for 6 months. INOTIR is a combined drug, the components of which, acting at various levels of insulin resistance, provide a proven and effective result even in the most difficult cases of human reproduction. INOTIR contains in its composition 5 active components, the interaction of which is synergistic and effective even in the most complex and combined cases.

Myo-inositol 2000mg is involved in intracellular signal transmission and ensuring the functioning of a number of receptors (for insulin, growth factors, catecholamines, etc.)

Folic acid 200mcg is responsible for cell growth and maintaining the integrity of DNA, it is necessary for the functioning of the immune, hematopoietic, cardiovascular systems, amino acid synthesis and fetal development.

L-tyrosine 500 mg is an important amino acid that acts as a precursor of various hormones (thyroxine, dopamine, adrenaline, norepinephrine), increases the synthesis of androgen-binding globulin.

Chromium picolinate 40 mcg. Chromium is an important mineral involved in the regulation of insulin action, contributes to the normalization of lipid and carbohydrate metabolism, reducing the risk of alimentary obesity and metabolic syndrome.

L-Selenium Methionine 55 mcg - A powerful antioxidant. Its antioxidant activity is due to the ability of selenium to neutralize reactive oxygen species, and selenium is also involved in the synthesis of thyroid hormones.

After the use of the drug, body weight decreased by 1.12 times in girls with the 1st degree of obesity, 1.13 times - with the 2nd degree, 1.09 times - with the 3rd degree of alimentary obesity, respectively. The indicator OT/OB also significantly and more pronounced decreased. BMI inpatientswiththe 1st degreeofobesitydecreasedby 1.12 times, withthe 2nd degree - by 1.14 times, withthe 3rd degreeofobesity - by 1.09 times, respectively.

A decrease in the body weight of patients with alimentary obesity contributed to a certain extent to a decrease in the frequency of menstrual dysfunction. secondary amenorrhea decreased in 1.96; 1.33 and 2 times, respectively, with the 3rd degree of obesity, oligomenorrhea was not observed, metrorrhagia and secondary amenorrhea decreased by 2 and 1.25 times, respectively.

Thus, the drug "Inotir" with prolonged use significantly reduces body weight and the degree of alimentary obesity. This appears to be related to the mechanism of action of myoinositol, which acts as a direct messenger of information to insulin and improves glucose uptake by body tissues, improving insulin resistance in girls with NMC and restoring menstrual regularity.

The main objectives of the treatment of obese adolescent girls are: achieving optimal body weight, preventing the development of concomitant diseases, maintaining the achieved body weight and preventing its increase, adequate control of obesity-related disorders, improving the quality and life expectancy.

Literature:

1. Baklaenko N.G., Gavrilova L.V. The current state of the reproductive health of adolescents // Hygiene, ecology and reproductive health of adolescents. - St. Petersburg, 2016. - P.6-14
2. Bogdanov E.A. Gynecologyofchildrenandadolescents. - M.: MIA, 2006. - 332 p.
3. Bogdanova E.A., Dolzhenko I.S. Gynecological diseases of children and adolescents - a factor in the violation of a woman's reproductive health // Abstracts of the scientific-practical conference "Protection of the reproductive health of the population." - M., 2010
4. GurkinYu.A. Juvenile gynecology. - St. Petersburg, 2010
5. Zelenina N.V., Dolgov G.V. Functional hypothalamic amenorrhea // Ros. West. ObstetricsandGynecology - 2016. - No. 1
6. Kikteva R.N. Features of the course of the pubertal period in girls with obesity // Problems of Endocrinology. - 2016. - No. 4. – p.53
7. Mostovaya L.A., Petrash S.P. Obesity in children and adolescents. - Kyiv, 2009. – 160 p
8. Sh R. G. Experimental modelling of traumatic brain injury in white rats //Тиббиётда янги кун. – 2021. – Т. 2. – №. 34. – С. 197-200.
9. Rakhimova G. S., Kadirova L. V. THE USE OF INTERACTIVE METHODS TO ASSESS THE LEVEL OF ASSIMILATION OF THE MATERIAL STUDIED IN PATHOLOGICAL PHYSIOLOGY //Oriental renaissance: Innovative, educational, natural and social sciences. – 2022. – Т. 2. – №. 1. – С. 463-469.
10. Rakhimova G. S., Kadirova L. V. THE INTERACTIVE USAGE OF METHODS TO ASSESS THE LEVEL OF ASSIMILATION OF THE MATERIAL STUDIED IN PATHOLOGICAL PHYSIOLOGY //Oriental renaissance: Innovative, educational, natural and social sciences. – 2022. – Т. 2. – №. 1. – С. 513-518.
11. Rakhimova G. Sh. The Importance of Proteinuria as a Predictor of Diagnosis Risk Factor for Chronic Kidney Disease// The Pharmaceutical and Chemical Journal. – 2021. – Т. 8. - №. 1. – С. 79-81.
12. Bakhodirovna, T. Z., & Atanazarovich, M. S. (2021). RELATIONSHIP OF OXALATE NEPHROPATHY AND DIGESTIVE PATHOLOGY IN CHILDREN. *Galaxy International Interdisciplinary Research Journal*, *9*(11), 187-190.
13. Rakhimova G. MODELING OF ACUTE TRAUMATIC BRAIN INJURY IN WHITE MONGREL RATS //Академические исследования в современной науке. – 2022. – Т. 1. – №. 19. – С. 206-208.
14. Shamsievna R. G. Modern Aspects of Studying the Features of Morphofunctional Characteristics of Testes under Various Factor Influences //Eurasian Scientific Herald. – 2022. – Т. 7. – С. 279-286
15. Sh R. G., Kadirova L. V. The condition of some endocrine glands of white rats after an experimental traumatic brain injury //The new day in medicine. – 2021. – №. 5. – С. 37.