CHANGES IN CARBOHYDRATE METABOLISM IN PATIENTS WITH POLYCYSTIC OVARIAN DISEASE

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Abstract: Recently, there has been a sharp increase in the number of patients with polycystic ovary syndrome (PCOS). The most serious complications of the disease are infertility, anovulation, and multiple metabolic disorders. There is convincing evidence that the development of PCOS is accompanied by an increased risk of developing impaired glucose tolerance. The purpose of this work was to study the characteristics of carbohydrate metabolism in women with infertility associated with polycystic ovary syndrome.

Key words: Polycystic ovary syndrome, infertility, glucose tolerance, HOMA index, BMI.

Polycystic ovary syndrome (PCOS) is the most common form of endocrinopathy; it occurs in 4-12% of women of reproductive age [4, pp. 163-179]. . The relevance of the problem of polycystic ovaries is determined not only by the high prevalence of this pathology, but also by its social significance, since it is often accompanied by menstrual dysfunction, which occurs in 47-66% of cases, anovulatory infertility, and metabolic disorders [3, pp. 163-179].

From the first years of studying the disease, it was revealed that the majority of patients are obese or overweight. In 1980 G.A. Burghen et al. found that women with polycystic ovary syndrome have both basal and glucose-stimulated hyperinsulinemia, suggesting the presence of insulin resistance. This led to the understanding that polycystic ovary syndrome, along with reproductive disorders, has a pronounced metabolic component [1; 2;5, p.163-179]. A range of manifestations of metabolic syndrome have been found in women with polycystic ovary syndrome [2]. Taking into account the fairly wide prevalence of PCOS among women of reproductive age, timely detection of manifestations of metabolic syndrome in them could help improve the state of both general and reproductive health of women, which is important in the current demographic situation in Russia.

The purpose of the work was to study the characteristics of carbohydrate metabolism in women with infertility associated with polycystic ovary syndrome, depending on body weight.

45 women of childbearing age were examined, comprising 3 groups: group 1 – 15 women with infertility, ultrasound signs of polycystic ovary syndrome and increased BMI;

group 2 – 15 women with infertility, ultrasound signs of polycystic ovary syndrome and normal BMI;

group 3 – 15 women with infertility of unknown origin.

The average age of women in group 1 was 27.47±3.94 years, the age of onset of sexual activity was 19.27±2.1 years. The average cycle length ranged from 30 to 120 days, averaging 53.2±8.14 days. The average duration of infertility was 3.8±2.18 years.

The average age of patients in group 2 was 25.6±4.14 years, the age of onset of sexual activity was 18.6±1.64 years. The average cycle length ranged from 28 to 120 days, with an average of 46.5±7.32 days. The average duration of infertility was 3.27±1.79 years.

The average age in this group was 25±3.07 years, the age of onset of sexual activity was 18.62±1.92 years. The average cycle duration ranged from 27 to 40 days, averaging 30.4±3.1 days. The average duration of infertility was 2.75±1.49 years.

Infertility in all patients was primary, the gynecological history was not burdened.

All subjects underwent ultrasound examination with a transvaginal sensor on the Aloka 3500 apparatus: the length, anteroposterior and transverse dimensions of the uterus were measured, the condition of the myometrium and endometrium was studied, the dimensions (length, anteroposterior and transverse) and volume of the ovaries were measured (length × anteroposterior ×transverse×0.523, their structures (number of follicles in one section).

To determine the state of carbohydrate metabolism, glucose and insulin levels were used, and the HOMA index was calculated (fasting glucose level × fasting insulin level/22.5).

To assess morphometric parameters, a height-weight study and determination of body mass index (weight (kg)/height2 (m2)) were carried out.

The diagnosis of "polycystic ovary syndrome" was made on the basis of anamnesis, clinical data, general examination, including anthropometric, biochemical studies, and ultrasound data. According to the anamnesis, patients in groups 1 and 2 had menstrual irregularities such as oligomenorrhea, and patients in all groups had primary infertility.

When performing an ultrasound in patients of the first group, it was revealed that the volume of each ovary averages 13.99±2.59 cm3, in patients of the second group - the volume of each ovary averages 13.6±1.34 cm3, which is one of the criteria polycystic ovary syndrome. In addition, all patients of both groups have multiple (more than 12 on one section) anechoic inclusions with a diameter of 3 to 10 mm throughout the entire thickness of both ovaries, which is also a sign of polycystic ovary syndrome. When performing an ultrasound in patients of the third group, it was revealed that the volume of each ovary averaged 7.71±1.17, and there were no ultrasound signs of pathology of the ovarian structure, which is not typical for PCOS.

A morphometric study revealed that in patients of the first group, the BMI ranged from 28.16 to 36.43, averaging 30.85 ± 2.61, which, according to WHO data, significantly exceeds the norm and is grade 1-2 obesity. In the second group, BMI ranged from 18.21 to 23.3 (on average 21.73 ± 1.73), which is within the range of the normal relationship between weight and height and indicates normal body weight. Patients in the third group have a BMI from 19.16 to 29.38 (average 24.01 ± 3.49), which is normal, but some patients are included in the group of people with overweight and risk of obesity.

The HOMA index in the first group is 3.69±0.83 on average, which is significantly higher than the norm and is an indicator of insulin resistance. In the second group, the HOMA index, on average, was 2.64±0.45, which is slightly higher than the norm and is a criterion for glucose tolerance. The HOMA index in the third group was 1.64±0.2, on average, and was within normal limits.

Literature:

1. Miltiadovna A.E. The role of undifferentiated connective tissue dysplasia in the formation of endometrioid ovarian cysts: dissertation ... candidate of medical sciences: 01.14.01 / Aleksanova Ekaterina Miltiadovna. Moscow, 2016. 133 p.

2. Smirnova M.Yu., Stroev Yu.I., Niauri D.A., Shlykova A.V. Undifferentiated connective tissue dysplasias and their significance in obstetric and gynecological practice. Bulletin of St. Petersburg University. Ser.11. 2006. Issue 4. pp. 95-104.

3. Zemtsovsky E.V., Martynov A.I., Mazurov V.I., Storozhakov G.I., Anastasyeva V.G., Belan Yu.B., Brzhesky V.V., Suvorova A.V. etc. Hereditary disorders of connective tissue. National clinical guidelines of GFCI. M.; 2009: 221-250.