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ВЫПУСК 11 (№ 16)
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IN WOMEN WITH POLYCYSTIC OVARY SYNDROME (POS) AND OBESITY, DYSLIPIDEMIA IS THE CAUSE OF INFERTILITY

Resume. *Obesity is a real problem of modern medicine, according to statistics provided by WHO for 2016, the problem of overweight and obesity affects 52% of the adult population of the country: 39% of the population are overweight (BMI more than 25) and 13% of the population are obese (BMI more than 30). At the same time, with diagnoses of "overweight" and "obesity", the proportion of the female population is higher. This problem comes from childhood, reaches puberty.*

From an early age, eating habits, level of physical activity, lifestyle lead to the development of excess weight and obesity. According to statistics, in developed countries, children are diagnosed with "overweight" in an average of 25% of cases, and in 15% of cases they are diagnosed with "obesity".

If you continue this trend, the number of obese children will reach 70 million in 4 years. In 40% of cases, the diagnosis of "overweight" persists in children until adolescence, and in 75% of cases, the diagnosis accompanies them in adulthood

The article studied dyslipidemia, underlying infertility due to polycystic ovaries, as a causal factor, based on the above considerations.

Keywords: *dyslipidemia, infertility, polycystic ovaries, overweight.*

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ДИСЛИПИДЕМИЯ КАК ПРИЧИНА БЕСПЛОДИЯ У ЖЕНЩИН С СИНДРОМОМ ПОЛИКИСТОЗНЫХ ЯИЧНИКОВ (СПКЯ) И ОЖИРЕНИЕМ

Резюме. *Ожирение является реальной проблемой современной медицины, согласно статистике, предоставленной ВОЗ за 2016 год, проблема избыточного веса и ожирения затрагивает 52% взрослого населения страны: 39% населения имеют избыточный вес (ИМТ более 25) и 13% населения страдают ожирением (ИМТ более 30). В то же время при диагнозах "избыточный вес" и "ожирение" доля женского населения выше. Эта проблема приходит из детства, достигает половой зрелости.*

С раннего возраста привычки в еде, уровень физической активности, образ жизни приводят к развитию лишнего веса и ожирения. Согласно статистике, в развитых странах детям ставят диагноз "избыточный вес" в среднем в 25% случаев, а в 15% случаев ставится диагноз "ожирение".

Если вы продолжите эту тенденцию, число детей, страдающих ожирением, через 4 года достигнет 70 миллионов. В 40% случаев диагноз "избыточный вес" сохраняется у детей до подросткового возраста, а в 75% случаев диагноз сопровождает их во взрослом возрасте

В статье изучалась дислипидемия, лежащая в основе бесплодия вследствие поликистоза яичников, как причинный фактор, исходя из вышеуказанных соображений.

Ключевые слова: *дислипидемия, бесплодие, поликистоз яичников, избыточный вес.*

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TUXUMDONLAR POLIKISTOZI SINDROMI (TPS) VA SEMIZLIGI BO'LGAN AYOLLARDA DISLIPIDEMIYA BEPUSHTLIK SABABCHISI SIFATIDA

Annotatsiya. *Semizlik zamonaviy tibbiyotning haqiqiy muammosidir, JSST tomonidan 2016-yil uchun taqdim yetilgan statistik ma'lumotlarga ko'ra, ortiqcha vazn va semirish muammosi mamlakat kattalar aholisining 52 foiziga ta'sir qiladi: aholining 39% ortiqcha vazn (BMI 25 dan ortiq) va aholining 13% semiz (BMI ko'proq 30 dan ortiq). Shu bilan birga, "ortiqcha vazn" va "semirish" tashxisi bilan ayol aholining ulushi yuqori. Bu muammo bolalikdan kelib chiqadi, balog'at yoshiga yetadi.*

Yerta yoshdan boshlab ovqatlanish odatlari, jismoniy faollik darajasi, turmush tarzi ortiqcha vazn va semirishning rivojlanishiga olib keladi. Statistik ma'lumotlarga ko'ra, rivojlangan mamlakatlarda bolalarga o'rtacha 25% hollarda "ortiqcha vazn" tashxisi qo'yiladi va 15% hollarda tashxis "semirish" hisoblanadi.

Agar bu tendensiya davom yesa, 4-yil ichida semiz bolalar soni 70 millionga yetadi. 40% hollarda "ortiqcha vazn" tashxisi bolalarda o'smirlikka qadar davom yetadi va 75% hollarda tashxis ularga balog'at yoshida hamroh bo'ladi.

Maqolada yuqoridagi fikrlarga asoslangan holda tuxumdon polikistozi tufayli bepushtlik negizida dislipidemiyaning sababchi omil sifatida o'rganilgan.

Kalit so'zlar: *dislipidemiya, bepushtlik, tuxumdon polikistozi, ortiqcha vazn.*

Relevance. In women with polycystic ovary syndrome (PCOS) and obesity, sex hormone disorders and insulin resistance (IR) are determined in comparison with patients with normal body weight [4]. In addition, it is assumed that a number of metabolic disorders are also associated with obesity and 70% of obese women have at least one impaired lipidogram indicator [5].

In conditions of IR and excess of free fatty acids, lipid metabolism is also disrupted and atherogenic dyslipidemia develops. As a result of slowing down the catabolism of triglycerides and triglyceride-rich lipoproteins, increased accumulation of very low-density lipoproteins, cholesterol accumulates in macrophages, an increase in the level of modified low-density lipoproteins with a high ability to oxidize and penetrate into the subendothelial space of the vascular wall, high affinity for LDL receptors. All these properties contribute to the active inclusion of small dense LDL particles in the process of atherogenesis [1].

Polycystic ovary syndrome is widely known as the most common endocrine abnormality in women of childbearing age and can

be accompanied by dyslipidemia, hyperandrogenism, oxidative stress and infertility. Currently, it is known that dyslipidemia plays an important role in the development of PCOS. Lipid disorders, including elevated levels of low-density lipoproteins and triglycerides and reduced levels of high-density lipoproteins, are often found in women with PCOS and play an important role in PCOS. [6].

With the growing interest in the lipid profiles of patients with PCOS, more and more guidelines recommend screening women with PCOS for a lipid profile [7, 2]. Assessment of the lipid profile is recommended for all patients with PCOS, and glucose tolerance and lipid status should be evaluated every 2-3 years. In addition to blood lipid parameters, attention to apolipoproteins in lipid profiles is also crucial for patients with PCOS in long-term follow-up. Dyslipidemia depends on diet and lifestyle. Dietary control and lifestyle improvement are the main treatment measures for dyslipidemia. In addition, selective lipid-lowering drugs can normalize dyslipidemia, but they have not become a standard treatment regimen for PCOS. In the future, the identification of the optimal subpopulation in

need of lipid-lowering therapy and the effectiveness of treatment of women with dyslipidemic PCOS require further clinical studies [3].

Objective: to study dyslipidemia in women with polycystic ovaries with infertility and obesity.

Material and methods. The study examined 60 women with polycystic ovaries and infertility, 56 women with polycystic ovaries (PCOS) and obesity, as well as 46 women with PCOS, infertility and obesity.

Discussion of the results. From the conducted research results, it was revealed that in women with a full-fledged pregnancy and full-fledged childbirth (control), the total cholesterol in the blood was 4.62 ± 0.41 mmol/l. The same indicator in women with PCOS and infertility was 6.9 ± 0.72 mmol/l, which was significant ($P < 0.05$) is 1.5 times higher than that of women with a full pregnancy. At the same time, the result of total cholesterol in women with PCOS and obesity was 8.1 ± 0.77 mmol/l, which was significantly ($P < 0.001$) 1.8 times higher than the results of women with a full pregnancy and not significantly 1.2 times higher than women with PCOS and infertility. At the same time, this indicator in women with PCOS, infertility and obesity was significantly ($P < 0.001$) and 2.3 times higher than the same result in women with a full pregnancy and was 10.6 ± 1.12 mmol/l, also significantly ($P < 0.05$) 1.5 times higher than the results of women with PCOS and infertility.

In addition, it was found that in women with a full-fledged pregnancy and full-fledged childbirth, the triglyceride index in the blood was 1.64 ± 0.14 mmol/L. At the same time, in women with PCOS and infertility, the result of triglycerides was 3.5 ± 0.32 mmol/l, which was significantly ($P < 0.001$) 2.1 times higher than in women with a full pregnancy. At the same time, the triglyceride index in women with PCOS and obesity was 4.8 ± 0.41 mmol/L, and was significantly ($P < 0.001$) 2.9 times higher than in women with full pregnancy and also significantly ($P < 0.05$) 1.4 times higher than in women with PCOS and infertility. Also, the indicator in women with PCOS, infertility

and obesity was significantly ($P < 0.001$) and 3.8 times higher than the similar result of women with a full pregnancy and was 6.3 ± 0.71 mmol/l, also significantly ($P < 0.05$) 1.5 times higher than the results of women with PCOS and infertility.

In addition, it was determined that in women with a full-fledged pregnancy and full-fledged childbirth, the HDL index in the blood was 1.23 ± 0.12 mmol/L. In women with PCOS and infertility, the result of HDL was 0.7 ± 0.06 mmol/l, which was significantly ($P < 0.001$) 1.8 times less than in women with a full pregnancy. In this case, HDL in women with PCOS and obesity was 0.4 ± 0.03 mmol/l, and was significantly ($P < 0.001$) 3.1 times lower than the results of women with full pregnancy and not significantly 1.8 times less than women with PCOS and infertility. At the same time, in women with PCOS, infertility and obesity, the result of HDL was significantly ($P < 0.001$) and 6.2 times less than the analogical indicator of women with a full pregnancy and was 0.2 ± 0.01 mmol/l, also significantly ($P < 0.001$) 3.5 times lower than the results of women with PCOS and infertility.

The results also showed that in women with a full-fledged pregnancy and a full-fledged birth, the blood LDL index was 2.84 ± 0.24 mmol/L. At the same time, in women with PCOS and infertility, this indicator was equal to 4.2 ± 0.39 mmol/l, which was significantly ($P < 0.05$) 1.5 times higher than in women with a full pregnancy. With this result, LDL in women with PCOS and obesity was at the level of 5.7 ± 0.52 mmol/l, and was significantly ($P < 0.001$) 2.0 times higher than in women with full pregnancy and also not significantly 1.4 times higher than in women with PCOS and infertility. By comparison, this indicator of LDL in women with PCOS, infertility and obesity was significantly ($P < 0.001$) and 2.5 times higher than the similar result of women with a full pregnancy and was 7.1 ± 0.68 mmol/l, also significantly ($P < 0.001$) 1.7 times higher than the results of women with PCOS and infertility.

In addition, it was also found from the results obtained that with a full-fledged pregnancy and full-fledged childbirth in women,

the atherogenicity coefficient (X/HDL) was 3.4 ± 0.42 , which was within the reference values. In the case of women with PCOS and infertility, this indicator was 9.9 ± 1.12 , which was 2.9 times higher than the maximum values of the reference values of women with full pregnancy and full childbirth. At the same time, HDL/HDL in women with PCOS and obesity was 6 times greater than the results of women with full pregnancy and full childbirth, also 2.1 times more than in women with PCOS and infertility and was 20.3 ± 2.3 . In addition, the results of HDL/HDL in women with PCOS, obesity and infertility was 53.0 ± 6.1 and it was 15.5 times more than the same indicator of women with full-fledged pregnancy and full-fledged childbirth, 5.4 times more than women with PCOS and infertility.

It was also determined from these data that in women with full-fledged pregnancy and full-fledged childbirth, the atherogenicity coefficient (LDL/HDL) was 2.3 ± 0.31 , which was also within the reference values. At the same time, in women with PCOS and infertility, this result was equal to 6.0 ± 0.73 , which was 2.6 times higher than in women with full pregnancy and full childbirth. With this NLPNP/HDL in women with PCOS and obesity was 6.2 times greater than the results of women with full pregnancy and full childbirth, also 2.4 times more than in women with PCOS and infertility and was equal to 14.3 ± 1.52 . Also, the indication of LDL/HDL in women with PCOS, obesity and infertility was 35.5 ± 4.8 , which was 15.4 times more than similar results in women with full pregnancy and full childbirth, 5.9 times more women with PCOS and infertility.

The presented results showed that in women with PCOS and infertility, the total cholesterol indicator significantly increased in relation to the results of women with a full pregnancy. In women with PCOS and obesity, this indicator was also significantly, but significantly increased in relation to the results of women with a full pregnancy, also not significantly increased in women with PCOS and infertility. In women with PCOS, infertility and obesity, the total cholesterol index increased more significantly compared to the results of

women with a full pregnancy and also significantly increased compared to the results of women with PCOS and infertility. A similar trend of triglyceride changes was observed in women with full-fledged pregnancy and full-fledged childbirth, this indicator in women with PCOS and infertility significantly increased in relation to the results of women with full-fledged pregnancy. In women with PCOS and obesity, the level of triglycerides also significantly and significantly increased compared to those of women with a full pregnancy, and also significantly increased in comparison with women with PCOS and infertility. At the same time, in women with PCOS, infertility and obesity, there was a more pronounced and significant increase in triglycerides in relation to the results of women with a full pregnancy and also significantly increased in relation to the results of women with PCOS and infertility. The opposite trend in relation to cholesterol and triglycerides was observed in the study of HDL. It was found that in women with a full-fledged pregnancy and full-fledged childbirth, the HDL index significantly decreased when compared to the results of women with a full-fledged pregnancy. At the same time, in women with PCOS and obesity, this indicator was significantly and significantly reduced in relation to the results of women with a full pregnancy and not significantly in comparison with women with PCOS and infertility. In women with PCOS, infertility and obesity, the result of HDL decreased more significantly compared to the same indicator of women with a full pregnancy and also significantly decreased in relation to the results of women with PCOS and infertility. In the study of LDL, there was a similar trend of both cholesterol and triglycerides, an increase in these indicators in relation to the results of women with a full pregnancy, in women with PCOS and infertility, a more significant increase in women with PCOS and obesity, as well as a more significant increase in women with PCOS, infertility and obesity. There was also an increase in LDL in comparison to women with PCOS and infertility, the results of women with PCOS and obesity, as well as a more significant increase in women with

PCOS, infertility and obesity. Against the background of these changes, a similar direction of changes was noted, such as cholesterol, triglycerides and LDL-efficientsaterogenicity of C/HDL, LDL/HDL with an increase in these indicators in women with PCOS and infertility in relation to similar indicators in women with a full pregnancy. Also, a more significant increase in HDL and LDL/HDL in women with PCOS and obesity, as well as a more significant increase in women with PCOS, infertility and obesity in relation to similar indicators of women with a full pregnancy. A similar orientation of these indicators was observed in comparison to women with PCOS and infertility, the results of women with PCOS and obesity, as well as a more significant increase in women with PCOS, infertility and obesity. In general, these changes show the development of dyslipidemia in relation to women with full pregnancy in women with PCOS and infertility, which increased in women with PCOS and obesity. At the same time, dyslipidemia increased more significantly in women with PCOS, infertility and obesity in relation to women with a full pregnancy, as well as women with PCOS and infertility. There was also a more significant increase in dyslipidemia in women with PCOS, infertility and obesity compared to women with a full pregnancy and women with PCOS and infertility.

Conclusions:The data obtained showed that in women, that in women with PCOS and infertility, the development of dyslipidemia was noted in relation to women with a full pregnancy. Dyslipidemia increased in women with PCOS and obesity and increased more significantly in women with PCOS, infertility and obesity in relation to women with a full pregnancy, as well as women with PCOS and infertility. At the same time, a more significant increase in dyslipidemia was observed in women with PCOS, infertility and obesity in relation to both women with a full pregnancy, as well as women with PCOS and infertility.

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