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Restoring Reproductive Function In Overweight And Obese Women Of Childbearing Age

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ABSTRACT

The prevalence of overweight and obesity among women in Uzbekistan is 31.7 %. There is an annual increase in people with obesity. The facts of the negative impact of fat mass on the hormonal system and, as a result, a decrease in fertility in women are not in doubt. The purpose of this study was to evaluate the results of Metformin use in overweight and obese women of reproductive age. The study included 45 women of reproductive age who could not reduce weight with diet therapy. All patients were divided into three groups: group 1-planning pregnancy (n = 15), group 2 – having abnormal weight gain after childbirth (n = 15), group 3 – having overweight and obesity not related to pregnancy and childbirth (n = 15). Weight loss while taking Metformin increases fertility and should be performed in obese women as pre-gravidar training.

KEYWORDS

Obesity, polycystic ovary syndrome, insulin resistance, ovulation, metmorphine.

INTRODUCTION

Infertility in marriage is one of the most important and complex medical, socio-demographic and economic problems. The frequency of infertile marriages in many countries of the world ranges from 8 to 29%. In Europe, infertility affects about 10% of married couples, in the United States – 15%, in Canada-17%, the share of infertile marriages in

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Russia varies from 8 to 17.5%, and in Uzbekistan 6-15,8% [2, 3]. Currently, who has adjusted the definition of infertility, which is considered as the absence of pregnancy for one year of regular sexual activity without the use of contraception (who, 2009). According to the European society for female reproduction and embryology (ESHRE), around the world, one in six couples has some kind of reproductive dysfunction during their reproductive age. Today, the prevalence of infertility in the world is about 9% among women aged 20-44 years (ESHRE, 2014), with 56% of couples currently seeking infertility treatment [2, 3].

The prevalence of overweight and obesity among women in Uzbekistan is 31.7 %. There is an annual increase in people with obesity. The facts of the negative impact of fat mass on the hormonal system and, as a result, a decrease in fertility in women are not in doubt.
In the past few years, the criteria for selecting women with infertility for high-tech reproductive technologies (art) have become stricter. In particular, one of the criteria for performing art is a body mass index (BMI) of no more than 30 kg/m2. In this regard, pre-gravidar training aimed at reducing body weight should be carried out in women planning pregnancy or art [2, 3,5].

Insulin resistance (IR) is one of the significant factors in the formation of polycystic ovary syndrome (PCOS). Treatment aimed at reducing body weight in women with PCOS reduces insulin resistance, induces ovulation. To restore reproductive health, the main principle of treatment is to normalize metabolic disorders, since ovulation stimulation against the background of obesity does not lead to the expected results. Metabolic therapy is most effective in the early stages of the disease before the formation of secondary PCOS. In this case, a decrease in body weight leads to the restoration of generative function. The best effect is achieved if the therapy includes measures aimed at reducing visceral obesity, reducing IR [1]. Recovery of ovulatory cycles and the frequency of pregnancy in the treatment of PCOS with various methods (therapeutic, surgical, assisted reproductive technologies) increases when the patient reaches a normal body weight. According to the PCOS consensus (2003), the application of Metformin is mandatory in the treatment of PCOS in overweight and obese women [4].
The purpose of this study was to evaluate the results of Metformin use in overweight and obese women of reproductive age.

MATERIALS AND METHODS OF RESEARCH

The study was conducted on the basis of the" Bukhara regional endocrinological center " in Bukhara. The study included 45 women of reproductive age who could not reduce weight with diet therapy. All patients were divided into three groups: group 1-planning pregnancy (n = 15), group 2 – having abnormal weight gain after childbirth (n = 15), group 3 – having overweight and obesity not related to pregnancy and childbirth (n = 15). According to the degree of severity of fat mass, the patients were divided into four groups: overweight, obese in the first degree, obese in the second degree, and obese in the third degree, according to the who classification criteria of 1998.

A group of women with PCOS from the General cohort of the study was identified. The analysis of changes in indicators of reproductive capability (ultrasound of the pelvic organs, folliculometry). Before taking

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the drug all the patients were investigated tireur , prolactin, glycemic profile. When detecting hypothyroidism and hyperprolactinemia, hormonal parameters were corrected. Patients with diabetes did not participate in the study.

The analysis of body weight loss in women on the background of taking Metformin, depending on the degree of severity of fat mass, the goals of weight loss. The period of follow – up was 3 and 6 months.

RESULTS

The results of the study and their discussion were divided into four groups: overweight (n = 6) with a BMI of 27.3 ± 2.2 kg/m2; obese 1 degree (n = 21) with a BMI of 33.7 ± 1.1 kg/ m2; obese 2 degree (n = 13) with a BMI of 37.4 ± 2.3 kg/m2; obese 3 degree (n = 5) with a BMI of 44.1 ± 2.6 kg/m2. Starting doses of Metformin 500 mg 2 times a day. The IR criterion was the fact that there was no reduction in body weight during diet therapy.

After three months, weight reduction was observed in the group of obesity 1 degree in 100 % (n = 6) 7.2 + 0.6 kg (BMI of 29.2 ± ± 0.7 kg/m2); in the group of obesity of 2 degrees 76 % (n = 16) 8.8 ± 0.7 kg (BMI of 33.6 ± 0.8 kg/m2); in the group of obesity grade 3 in 60 % (n = 3) 9.6 ± 1.0 kg (BMI of 35.1 ± 2.1 kg/m2). Two patients with grade 7 obesity did not respond to weight loss therapy. It was found that they could not cope with the dependence on easily digestible carbohydrates and did not follow the recommended diet. In the overweight group, weight loss was observed in 80 % (n = 4) by 4.2 ± 1.4 kg (BMI 26.4 ± 0.8 kg/m2). In one, the body weight remained unchanged due to ignoring dietary recommendations.

After three months, 21 women remained in the study. Those whose body weight decreased less than 2 kg per month or remained unchanged, the dose of Metformin is up to 850 mg 2 times a day (n = 5). A redistribution of the groups occurred in the following way: the group with overweight (n = 7), group with obesity of 1 degree (n = 7); group with obesity of 2 degrees (n = 6); group with obesity grade 3 (n = 1). From the group of obesity 3 degrees in the group with obesity of 2nd degree, 2 switched a woman from the group of obesity of 2 degrees in the group with obesity of 1 degree moved 6 women from the group with obesity of 1 degree in the group with excessive body weight moved 5 females, body weight was normalized in 5 women.

When analyzing results in six months the weight loss was as follows: in the group with excessive body mass by 3.8 ± 1.1 kg; in group with obesity of 1 degree of 5.4 ± 1.2 kg; in group with obesity of 2 degrees 9.4 ± 0.8 kg; in group with obesity grade 3 10.2 ± 1.2 kg. Most of the study participants stopped taking the drug after 6 months, because some planned pregnancy (n = 7), others because they were satisfied with the results of treatment (n = 10). Three patients remained in the study and took metmorfin during the year and achieved the target weight loss is 10 to 15 % of the original. During the study, two patients complained of nausea, constipation, insomnia, and tachycardia. Two patients complained of pain in the epigastric region. One of them had an exacerbation of duodenal ulcer (duodenal ulcer) after a five-year remission. Three patients with infertility, due to primary and secondary ovarian insufficiency, became pregnant while taking Metformin in 3-6 months. They did not follow the recommendations on contraception,

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because infertility preceded them for a long time. One of them lost weight by 14 kg, the second by 12 kg after a three-month intake period, and the third by 10 kg after a six-month intake

Study medication. Two women successfully endured pregnancy up to 38-40 weeks of pregnancy, gave birth through the natural birth canal to healthy children 3250 gr. , and 3980 gr. During the gestational period, one was diagnosed with preeclampsia and anemia, the second was found to have low water content by ultrasound. Both women were given an oral glucose tolerance test and monitored for glycemia in each trimester of pregnancy. An important fact is the absence of gestational diabetes, despite the presence of obesity in both women. In the third patient, the pregnancy ended in regression at 6-7 weeks. The material from the obtained abortion could not be examined. Given the presence of PCOS and the insufficiency of the luteal phase of the menstrual cycle, the effect of metmorphine on the outcome of this pregnancy is unlikely. A group of women with PCOS was singled out separately and the treatment results were evaluated (n = 6), without dividing into groups by BMI. Weight loss was observed by 6.1 ± 2.8 kg in the first 3 months of treatment and by 3.7 ± 2.5 kg in the second 3 months. All women with PCOS were initially obese. In 3 women with PCOS on the background of weight reduction appeared of ovulation according to folliculometry. The analysis of body weight loss depending on the motivation of patients was carried out. Weight loss was assessed in women who planned pregnancy and / or were preparing for art (n = 13), women with excessive weight gain after childbirth (n = 5), who want to lose weight in order to improve health and appearance. (n = 12). In the group planning pregnancy, weight loss was 1.5 times more intense than in the others. The group of postpartum obesity has the lowest indicators of weight loss. Perhaps this is due to a sedentary lifestyle and constant availability of food.

After the end of the study within 6 months the desired pregnancy occurred in 4 women.

CONCLUSIONS

1. Treatment with Metformin was confirmed to be effective in reducing body mass in women with obesity and overweight.
2. 3 patients with PCOS had ovulatory cycles.
3. The effectiveness of weight loss depends on motivation.
4. The higher the body mass index, the better compliance and higher efficiency.
5. weight Loss while taking Metformin increases fertility and should be performed in obese women as pre-gravidar training.

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