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THE CLINICO-PATHOGENETIC CHARACTERISTIC OF PATIENTS WITH OVARIAN FORM HYPERANDROGENAEMIA

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ABSTRACT

Hyperandrogenya of ovaries is one of the most actual problems gynecologic endocrinology. In clause results of inspection of 138 women fertilis age are submitted. Are lead clinical, hormonal, tool, biochemical methods of research. Results of the lead research testify that women with hyperandrogenya of ovaries, have high risk of development diabetes, atherosclerotic process and fatty hepatosis.

KEYWORDS: Hyperandrogenya of ovaries, insulin resistance.

One of the main causes of violations of the functional state of the reproductive system in women of childbearing age is the excess production of androgens and androgenic effects intensification - hyperandrogenism (HA). The greatest significance of hyperandrogenism problem is determined primarily by the fact that the majority of patients, it is closely linked with violations of one of the fundamental functions of the human organism - the reproductive function.[1,5,12]

Considerable difficulty is identifying sources of HA. To differentiate the degree of participation in the process of the ovaries and the adrenal cortex is very difficult. This is due to the same range of androgens synthesized in these glands, and the similarity of the majority of the clinical manifestations of hyperandrogenism with ovarian and adrenal origin.[4,9,10]

Endocrinological disorders are characterized by changes in the content of gonadotropic and steroid hormones in the blood of patients with ovarian form hyperandrogenaemia that clinically manifest violation of the menstrual cycle and hirsutism with age at menarche and later - anovulatory infertility. Obesity is accompanied by ovarian hyperandrogenaemia since the time of the description of this pathology, and is traditionally considered pathognomonic sign. However, today, overweight is observed only in half of the patients with ovarian HA. It was also noted that 80% of patients with this pathology obesity occurs from puberty.[6,8]

It is known that for any obesity has a degree of insulin resistance. By increasing the weight itself obesity aggravates the existing insulin resistance with HA and ovarian hyperinsulinemia which results in a more expressed manifestation of clinical symptoms. Hyperinsulinemia in obesity, according to some authors, is also a possible cause of oligomenorrhea, because they revealed an inverse relationship between the level of serum insulin and the duration of the menstrual cycle.[3,7,11]

In recent years it is paid great attention to study of metabolic abnormalities in ovarian HA due to the high risk of developing a long-term complications - cardiovascular disease and insulin-dependent diabetes mellitus. No less controversial is the HA biochemical diagnostic criteria. The determining the level of androgens, according to most researchers is more informative.[2] It is considered debatable the question of what levels of androgen are more informative: androstenedione or testosterone. Most researchers conclude that clinical practice appropriate to the determination of total testosterone.

The aim of the study was to study the parameters of endocrine and metabolic disturbances in the form of ovarian hyperandrogenaemia in women of childbearing age

RESEARCH METHODS

The study involved 163 women of childbearing age with symptomatic hyperandrogenaemia who applied in the clinic of the Republican Specialized Scientific and Practical Medical Center of Endocrinology. To all women were conducted clinical and laboratory instrumentally examination. The hormonal examination included a study of the level of testosterone,

dehydroepiandrosterone sulfate (DHEA-S), 17-hydroxyprogesterone in the blood serum. Study was performed on 3-5 day of the menstrual cycle using radioimmunoassay kits produced by IMMUNOTECH Company. In women with menstrual irregularities (up to amenorrhea), blood was collected on 3-5 day menstrual like reaction after application of progestogens (Djufaston 1 tablet for 10 days). We determined the level of C-reactive protein by latex agglutination reaction, aminotransferase: ALT, AST were determined with optical test.

For differential diagnosis hyperandrogenaemia performed functional tests with dexamethasone, this was administered at a dose of 2 mg per day (0.5 mg 4 times a day) with repetition after two days of receipt. A sample was considered positive with a decrease in testosterone, DHEA-S by 50% or more, indicating that adrenal genesis hyperandrogenaemia. Reduced hormone levels less than 50% indicates a mixed form or ovarian hyperandrogenemia. To all surveyed was carried ultrasound research with the help of ALOKA 1700 (Japan) using sectoral or line sensors 50 MHz when the bladder is full. The ultrasonography was performed on any day on the amenorrhea background and on 5-7 day own or induced menstruation. We assess the state of the endometrium, the size and position of the uterus.

The statistical analysis of the data was performed using the methods of variation statistics. The differences were considered statistically significant at P <0,05.

RESULTS OF THE STUDY

The main group consisted of 138 women of childbearing age. The average age of patients was 28,0 ± 5,2 years. The control group consisted of 20 women of childbearing age with no signs of hyperandrogenaemia.

Complaints of patients of the main group were: hirsutism (of varying severity), menstrual irregularities (oligomenorrhea in 81 (58.7%), opsomenoreya - in 33 (23.9%), secondary amenorrhea at 19 and 5 girls met acyclic bleeding (13.7 and 3.6%)), and obesity - 18 (13.04%).

The Analysis of anamnestic data revealed hirsutism in mothers and next of kin - 93 (67.4%) and endocrine diseases - 67 (48.5%) cases. At 8 mothers surveyed had a history of polycystic ovary syndrome was verified (PCOS). In families of 23 (16.6%) patients detected diabetes type 1 or type 2.

Physical history study revealed that the incidence of infectious disease in children in women with ovarian HA was higher than the control group (hepatitis history 41.2% tonsilogenic infection in 9.1% against the values of the control group - 15% and 5 %, respectively, p <0.05).

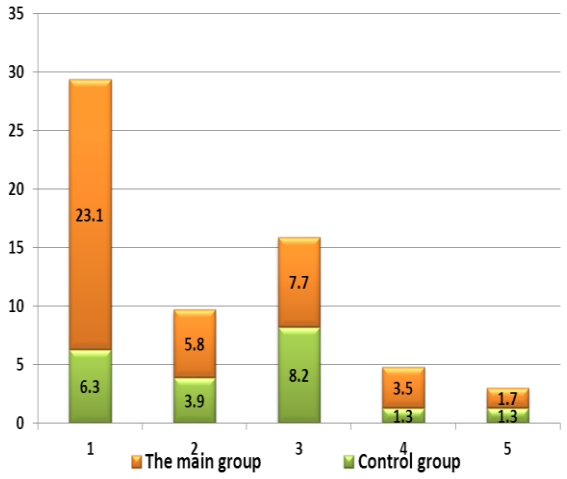
The appearance of menarche in patients of the main group, noted in 12,4 ± 0,2 years. The majority of patients (87.5%) ovarian dysfunction was characterized by oligo opsomenorrhea, amenorrhea. In the half of the patients - (52.9%), menstruation has not been established with menarche. The other half were regular for 0.5-1 years, and then the menstrual cycle was broken.

On examination of mammary glands of two basic types were identified: in most cases - 71.4%, mammary glands have a conical shape, small size and poorly shaped nipple. In another type of development, detected in 28.6% of patients breasts have a round shape, the nipple has been completely formed. Regardless of the type of development in 5 patients of the main group detected breast asymmetry. Nipple discharge is not detected in any case.

The hirsutism in this group of examined patients manifested in varying degrees. Most often pigmented hair were above the upper lip, on the sternal chest line, around the areola, the white line of the abdomen, legs, back. Patients in this group had hirsutic number from 11 to 18 points on a Ferriman - Galway scale.

Ultrasound examination of the pelvic organs in women with ovarian form hyperandrogenaemia defined fine-cystic changes in the follicular unit, bilateral enlargement of the ovaries - at 86.6% of girls, thickening the capsule - at 38.1%, a decrease in size of the uterus - at 35.7%. Ovarian-uterine code (s) exceed this figure compared with patients in the control group by 1.7 times. In 81.3% of cases there was a peripheral location of the follicles.

To diagnose this form of hyperandrogenism provides substantial assistance determining the content of gonadotropin-releasing hormone in the peripheral blood plasma and the calculation of the ratio of LH / FSH. Increasing the ratio of LH and FSH to LH predominance is characteristic of this form of hyperandrogenism (pic.1).



Pic.1: The results of the survey hormonal patients with ovarian hyperandrogenism

Note: 1. Luteinizing hormone, (LH (IU/l)*

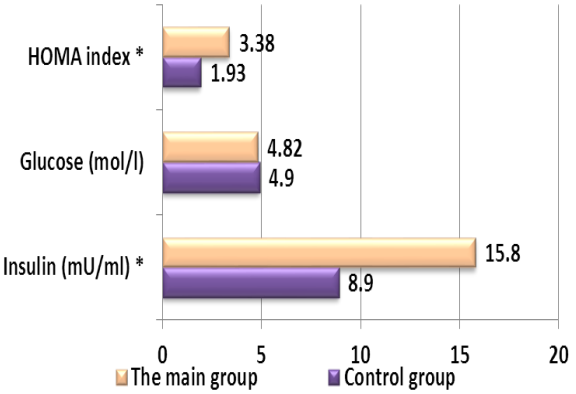
2. Follicle-stimulating hormone, (IU/l)
3. Prolactin (ng/ml)
4. Testosterone (nmol/L)*
5. TSH (mkIE/ml)

* The values are valid at comparison with reference values, p <0.05

The concentration of testosterone in patients with ovarian HA moderately increased. The ratio of LH / FSH> 3. The conducting diagnostic tests have the great diagnostic importance.

There have appeared a scientific publications that put a suggestion that hyperinsulinemia (HI) plays an important role in the pathogenesis of ovarian hyperandrogenism shape and HI correction leads to decrease the content of basic ovarian androgens in recent years.

Therefore, to identify features of disorders of carbohydrate metabolism in women surveyed in both groups were determined by the levels of immunoreactive insulin and blood glucose (Pic. 2).



Pic. 2. Status of carbohydrate metabolism in patients of ovarian group and control groups

Note: * - valid values as compared to control, P <0.01.

In the analysis of the results revealed that insulin has a reliable tendency to increase in the group with ovarian HA. The concentration of glucose in the blood did not undergo significant fluctuations in the two groups, but analyzing HOMA index showed its increasing in group of women with hyperandrogenism, which indicates the willingness of these women developing metabolic syndrome.

According to our data clear relationship between fasting levels of IRI and the content of ovarian androgen in the blood serum could not be established. It can be assumed that the duration and severity of disorders of carbohydrate metabolism determine the sensitivity of tissue changes - targets insulin.

C-reactive protein (CRP) has the important feature like antibodies with similar property, the ability to recognize determinants and initiate immune effector mechanisms. The determining the protein level showed that serum from the peripheral blood of women Hypierandrogenemia contains on average 8.1 ± 0.4 ng / ml vs 6.8 ± 0.5 ng / ml in controls (p <0.05). C-reactive protein (CRP) in such action may be due to the fact that it inhibits the activities of phospholipases, including intracellular PLA2 involved in the metabolism of arachidonic acid, which is a substrate for formation of biologically active substances.

In this regard, the effect of CRP similar to the effect of glucocorticoids which potentiate the action of adrenaline on the effector cells; CRP inhibits the biological effect of acetylcholine, and thereby can improve the level of adrenaline.

In patients with ovarian hyperandrogenism in the study of liver aminotransferases showed an increase (≥40 IU / l) level of data rates (22.8% vs. 3.3%, p <0.01), which may indicate the formation or the risk of developing fatty liver. Thus, in patients with HA is important to investigate the condition of the liver.

Thus, the results of the study show that women with ovarian hyperandrogenism form, have a high risk of developing metabolic disorders. Firstly, directly enhances insulin LH-dependent synthesis of androgens in the theca cells of ovarian follicles and, secondly, suppressing synthesis binding globulin sex steroids, increases in blood of biologically active free fraction of testosterone. In addition, Hyperandrogenemia can serve as a trigger mechanism for the development of atherosclerosis and steatosis.

REFERENCES

1. Dedov I.I., Andreeva E.N., Pishchulin A.A. The syndrome of hyperandrogenism in women. Methodological manual for doctors. M., 2006; 3-40.
2. Serov V.N., Prilepskaya V.N., Ovsyannikov T.V. Gynecological Endocrinology. - M .: MEDpress-inform, 2004; 7-124.
3. Sobolev E.L., Potin V.V. The Anti-androgens in the treatment of hirsutism // Akush. and gin, 2000; N.6: 47-49.
4. Shilin D.E. Demidov V.N. The hyperandrogenism syndrome: modern approaches to diagnosis and new treatment technologies. // Therapist, 2003; 10: 36-39.
5. Azziz R., Carmina E., Dewailly D., Diamanti-Kandarakis E., Escobar-Morreale H.F., Futterweit W., Janssen O.E., Legro R.S., Norman R.J., Taylor A.E., Witchel S.F. Position statement: criteria for defining polycystic ovary syndrome as a predominantly hype randrogenic syndrome: an Androgen Excess Society guideline.// J. Clin. Endocrinol. Metab., 2006; 91: 4237–4245.
6. Carmina E., Rosato F., Jannı` A., Rizzo M., Longo R.A. Relative prevalence of different androgen excess disorders in 950 women referred because of clinical hyperandrogenism.// J. Clin. Endocrinol. Metab, 2006; 91: 2–6.

7. Franks S. How good are we at diagnosing polycystic ovary syndrome? // Clin. Endocrinol, 2007; 67(6): 807-810.
8. Futterweit W. Polycystic ovary syndrome: a common reproductive and metabolic disorder necessitating early recognition and treatment. //Prim. Care, 2007; 34(4); 761-789.
9. Nader S., Fruzetti O. Adrenarche and polycystic ovary syndrome: a tale of two hypotheses. //J Pediatr. Adolesc. Gynecol, 2007; 6: 353-360.
10. Pasquali R., Patton L., Pocognoli P., Cognigni GE, Gambineri A. 17-hydroxyprogesterone responses to gonadotropin-releasing hormone disclose distinct phenotypes of functional ovarian hyperandrogenism and polycystic ovary syndrome.// J Clin. Endocrinol. Metab, 2007; 92(11): 4208-4217.
11. Saenger P., Czernicyow P., Warren-Ulanch J., Mastokaros G. Small for Gestational Age: Short stature and beyond. //Clinical endocrinology and metabolism, 2007; 28: 219-251.
12. Wide L., Naessn T., Sundstrцm-Poromaa I., Eriksson K.. Gonadotropins in women during the menstrual cycle and with polycystic ova.