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COMPREHENSIVE DIAGNOSIS OF HYPOGONADOTROPIC HYPOGONADISM IN NONFUNCTIONING PITUITARY ADENOMAS: A CLINICAL AND INSTRUMENTAL PERSPECTIVE

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Abstract:
Hypogonadotropic hypogonadism (HH) is a common clinical manifestation of pituitary insufficiency, particularly in tumors of the chiasmatic-sellar region. Timely diagnosis plays a crucial role in preventing complications associated with hormonal imbalances and reproductive dysfunction.

Keywords: Hypogonadotropic hypogonadism, pituitary adenoma, chiasmatic-sellar tumors, amenorrhea, infertility, neurovegetative disorders, hormonal imbalance.

Aim: To examine the diagnostic characteristics of hypogonadotropic hypogonadism in women with nonfunctioning pituitary adenomas using clinical, hormonal, and instrumental methods.

Materials and Methods: The study included 76 women aged 18 to 47 years (median age: 36 years) diagnosed with nonfunctioning pituitary adenomas.

Diagnostic methods included:

- Clinical assessment of symptoms, medical history, and manifestations such as amenorrhea, infertility, neurovegetative symptoms, and urogenital disorders;
- Laboratory tests to measure levels of luteinizing hormone (LH), follicle-stimulating hormone (FSH), estradiol, and other pituitary hormones (TSH, ACTH, cortisol, prolactin);
- Instrumental examinations, including pelvic ultrasound to detect uterine and ovarian hypoplasia, and MRI of the brain to assess pituitary status.

Statistical data analysis was performed using Microsoft Excel and Statistica 6.0, with differences considered significant at $p < 0.05$.

Results and Discussion: Analysis revealed that 67% of patients with chiasmatic-sellar region tumors exhibited significantly reduced levels of LH, FSH, and estradiol. Pelvic ultrasound in patients with primary amenorrhea confirmed pronounced uterine and ovarian hypoplasia.

The clinical manifestations of hypogonadotropic hypogonadism in women included:

- Menstrual irregularities: primary amenorrhea (31%), secondary amenorrhea (66%), and oligomenorrhea (3%);
- Infertility (25%);
- Neurovegetative symptoms (hot flashes, palpitations, anxiety) – 75%;
- Urogenital disorders (vaginal dryness, dyspareunia) – 63%.

HH was identified as one of the earliest clinical signs of nonfunctioning pituitary adenomas, preceding the development of visual and neurological impairments.

Conclusion:

Early diagnosis of hypogonadotropic hypogonadism in women with nonfunctioning pituitary adenomas requires a comprehensive approach incorporating clinical evaluation, hormonal testing, and instrumental examinations. The combination of decreased LH, FSH, and estradiol levels with ultrasound-confirmed uterine and ovarian hypoplasia serves as a key diagnostic criterion. Timely detection and early intervention help prevent long-term complications and improve patients' quality of life.

References:

1. Braun, M., Wassmer, G., Klotz, T., et al. (2000). Epidemiology of erectile dysfunction: results of the 'Cologne Male Survey'. International Journal of Impotence Research, 12(6), 305-311.
2. Chabbert-Buffet, N., Skinne, D.C., Caraty, A., et al. (2000). Neuroendocrine effect of progesterone. Steroids, 65, 613-620.
3. Cheng, K., Leung, P. (2000). The expression, regulation, and signal transduction pathway of the mammalian gonadotropin-releasing hormone receptor. Canadian Journal of Physiology and Pharmacology, 78, 1029-1052.

4. Davey, D.A. (2012). Androgens in women before and after menopause. Women's Health, 8(4), 437-446.
5. Erichsen, M.M., Husebye, E.S., Michelsen, T.M., et al. (2010). Sexuality and fertility in women with Addison's disease. Journal of Clinical Endocrinology & Metabolism, 95(9), 4354-4360.
6. Kratz, A., Ferraro, M., Sluss, P., Lewandrowski, K. (2004). Laboratory reference values. New England Journal of Medicine, 351, 1548-1563.
7. Kovacs, K., Stefaneanu, L., Horvath, E., Lloyd, R.V. (1992). In situ hybridization study of estrogen receptor mRNA in pituitary adenomas. Endocrine Pathology, 3(Suppl. 1), 20-21.
8. Vogiatzi, M.G. (2021). Hypogonadism. Medscape.
9. Russian Society of Obstetricians and Gynecologists. (2021). Clinical Guidelines on Female Infertility.
10. Clinical Endocrinology Guidelines, edited by N.T. Starkova. Piter Press.