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Features of pituitary-ovarian axis functioning in woman of reproductive age with acromegaly and Cushing's disease.

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Context.
The prevalence of reproductive dysfunction among patients with acromegaly (ACRO) and Cushing's disease (CD) is high enough, and menstrual disturbances are often the first clinical symptoms of the disease.
Objective.
The purpose of this study was to assess the functioning of the pituitary-ovarian axis by examination of key hormones.
Methods and patients.
The study included 58 patients of reproductive age, 21 with ACRO, the average age was 36.6 ± 4.9 years and 37 patients with CD, the average age was 30.0 ± 5.9 years.
Results.
All patients with ACRO had macroadenoma, the GH median was 15.95 [9.4, 38.5], IGF-1 703.45 [560.8, 869.4]. Amenorrhea was observed in 12 patients (42.9%), 2 presented oligomenorrhea (9.5%) and 10 had normal menstrual cycle (47.6%). Mild hyperprolactinemia was noted in 11 patients (52.4%). Median FSH was 4.0 [2.7, 4.8], LH - 2.8 [1.5, 3.8], E2 - 112.1 [87.1, 153.9], inhibin B - 54, 2 [25.0, 86.2], PRL - 387.5 [109.0, 557.0]. The presence of a negative correlation between E2 and IGF-1 ($r = 0.36$, $p < 0.05$) was noted.
Among patients with CD, microadenoma was confirmed in 22 patients (59.5%), 7 had macroadenomas (19%), adenoma was not visualized by MRI in 8 (21.6%). Median evening level of ACTH was 47.1 [35.4, 74.7], evening cortisol - 592.0 [445.0, 847.6]. Amenorrhea was observed in 15 patients (40.5%), oligomenorrhea in 10 (27.0%), normal menstrual cycle in 11 (29.7%), menometrorrhagia in 1 patient (2.7%). Hyperprolactinemia was registered only in 9 patients (24.3%). Median FSH was 4.7 [3.3, 5.6], LH - 3.9 [2.7, 6.0], E2 - 116.4 [90.2, 182.3], inhibin B - 53,4 [73.3], PRL - 351.7 [260.2, 536.1].It is an nteresting fact that the level FSH had inverse relationship with cortisol and also some direct correlation between LH and inhibin B ($r = 0.40$, $p < 0.05$) was signed. Despite the lower values of FSH and LH medians in the group of patients with CD compared to ACRO, the difference did not reach statistical significance ($p = 0.09$ and $p = 0.08$, respectively).
Conclusions.
Thus, the prevalence of menstrual dysfunction in patients with ACRO and CD is very high and reaches 2.1% and 70.2% respectively. Measurement of gonadotropins in the patients does not reveal pathological mechanisms of menstrual abnormalities. The frequency of concomitant hyperprolactinemia is higher in patients with ACRO than CD (52.4% vs. 24.3%). The depression of FSH secretion in women

with CD is inversely correlated with the level of cortisol.

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