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ВЕДЕНИЯ ПАЦИЕНТА С ТЯЖЕЛОЙ ГИПЕРПРОЛАКТИНЕМИЕЙ И МАКРОАДЕНОМОЙ: КЛИНИЧЕСКИЙ СЛУЧАЙ ГИПЕРПРОЛАКТИНЕМИЧЕСКОГО ГИПОГОНАДИЗМА

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MANAGEMENT OF A PATIENT WITH SEVERE HYPERPROLACTINEMIA AND MACROADENOMA: CASE REPORT OF HYPERPROLACTINEMIC HYPOGONADISM

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Резюме. В данной статье представлен клинический случай 38-летней пациентки с диагнозом тяжелая гиперпролактинемия, вызванная макроаденомой гипофиза, которая прошла курс лечения каберголином. Исходный уровень пролактина был критически высоким и составлял 120 000 нг/мл, что привело к аменорее. Корректировка схемы лечения привела к значительному снижению уровня пролактина до 1081 нг/мл и постепенному восстановлению менструальных циклов. Последующее МРТ показало уменьшение размера макроаденомы, что свидетельствует об эффективном лечении.

Ключевые слова: гиперпролактинемия, макроаденома гипофиза, каберголин, восстановление менструального цикла, эндокринные нарушения.

Resume. This article presents a clinical case of a 38-year-old woman diagnosed with severe hyperprolactinemia due to a pituitary macroadenoma underwent treatment with cabergoline. Initial prolactin levels were critically high at 120,000 ng/mL, leading to amenorrhea. Adjustments in her treatment regimen resulted in a significant decrease in prolactin to 1081 ng/mL and gradual restoration of menstrual cycles. Follow-up MRI indicated a reduction in macroadenoma size, demonstrating effective management.

Keywords: hyperprolactinemia, pituitary macroadenoma, cabergoline, menstrual restoration, endocrine disorder.

Relevance. Hyperprolactinemia, characterized by elevated serum prolactin levels, is a common endocrine disorder that can lead to significant clinical manifestations, including galactorrhoea, amenorrhea, and infertility. It can be attributed to a variety of conditions, including prolactin-secreting pituitary adenomas, hypothyroidism, or certain drugs. Severe hyperprolactinemia is frequently managed using a multidisciplinary strategy which involves pharmaceutical treatment, prolactin level monitoring, and, in some cases, surgical intervention.

Aim: of this case report provides a detailed account of a patient with severe hyperprolactinemia, highlighting the problems faced during diagnosis and management, as well as the therapeutic options used to attain satisfactory outcomes. This data can provide useful insights into the complexity of treating hyperprolactinemia and the value of personalized patient care in endocrinology.

Objectives:

1. Analysis of articles based on PubMed and Google Scholar data.

2. Detailed study of the patient's anamnestic and laboratory-instrumental data.

3. Comparison of current approaches to managing a patient with hyperprolactinemic hypogonadism with a specific clinical case.

Materials and methods. Articles from PubMed and Google Scholar databases were closely studied, analyzed and reviewed attentively to summarize the subject of the study, where a specific keywords “severe hyperprolactinemia", "hyperprolactinemic hypogonadism” was used from years 2014 to 2024 to deduce their significant correlation for the aim of the study. This review seeks to elucidate the clinical implications of hyperprolactinemia, delineating its short- and long-term complications, identifying key risk factors, and evaluating current strategies for treatment.

The object of the study is an adult woman with a newly diagnosed diagnosis of hyperprolactinemia; the observation period is from January 2023 to the present.

Results and their discussion. A 38-year-old female, previously healthy and with no significant medical history, presented with amenorrhea for two consecutive months and nighttime dizziness. Following a consultation with a neurologist, an MRI revealed a prolactin-secreting macroadenoma of the pituitary gland, measuring 22x20x19 mm, characterized by a solid structure with clear contours, suprasellar growth, and compression of the optic chiasm. Crucially, hormonal analysis demonstrated markedly elevated prolactin levels at 123.100 mIU/mL, indicating a significant hyperprolactinemic state. Additionally, the monoProlactin level was 97.736 mIU/mL (79.4%), further underscoring the pathological nature of the prolactin secretion. Other hormonal results were within normal ranges: TSH (3.09 mIU/nL), Free T4 (14.72 pmol/L), FSH (5.54 mIU/L), cortisol (389.8 nmol/L), and IGF-1 (135.5 ng/mL), alongside an estradiol level of 57.71 pmol/L. These findings highlight the macroadenoma's critical role in the patient's symptoms, necessitating focused management on the hormonal imbalance and ongoing tumour monitoring. The patient's prolactin (PRL) levels were closely monitored during cabergoline treatment, starting at **1132 ng/mL** with a dosage of **0.5 mg twice a week**. Despite this initial level, PRL increased to **1997 ng/mL**, prompting no dosage change. The level further rose to **2146 ng/mL**, leading to an adjustment to **0.5 mg three times a week**, but PRL escalated to **2576 ng/mL.** To enhance management, the dosage was increased to **0.5 mg four times a week**, resulting in a decrease to **1943 ng/mL**. Finally, after increasing the dosage to **0.5 mg five times a week**, PRL significantly dropped to **1081 ng/mL**. These results underscore the necessity for dosage adjustments to effectively manage hyperprolactinemia and achieve optimal prolactin suppression.

Discussion. Patient had not experienced menstruation since January 2023, until in September 2023, she reported a minimal menstrual period. She later developed to have more significant cycles from October 2023 till January 2024, hence showing a gradual restoration of her hormonal equilibrium. These significant improvements were noted after commencing cabergoline medicine. Before the appointment of cabergoline, prolactin was extremely high, about 120,000 ng/mL Hormonal assays performed throughout this period revealed fluctuating prolactin levels, beginning at 1132 ng/mL in May 2023 while taking cabergoline 0.5 mg twice a week and peaking alarmingly at 2576 ng/mL by November 2023, necessitating changes to her treatment regimen. To further regulate her hyperprolactinemia, the cabergoline dosage was increased, first to three times a week, then to four, and then to

0.5 mg five times a week by January 2024, resulting in a significant decrease in prolactin to 1081 ng/mL. This decline in prolactin levels coincided with improvements in her menstrual periods, indicating a beneficial response to the enhanced treatment.

A follow-up MRI on September 17, 2023, revealed a reduction in the size of the pituitary macroadenoma, which had previously been measured at 22x20x19 mm, showing that the tumour was well managed without compressing the optic chiasm. These data show the efficacy of cabergoline as a first-line therapy preference for severe hyperprolactinemia and the relevance of customized treatment regimens in achieving favourable outcomes. Management of hyperprolactinemia depends on the underlying cause and the presence of symptoms. If no adenoma or only a macroprolactinoma is detected and the patient is asymptomatic, monitoring without treatment is appropriate. However, if symptoms are present, medical therapy with dopamine agonists (e.g., cabergoline or bromocriptine) is initiated.

For macroprolactinomas, visual field testing is performed first due to the risk of optic chiasm compression, followed by treatment with dopamine agonists. In cases of poor response to these medications, alternatives include switching to another dopamine agonist, radiotherapy, or surgical excision of the tumor. For hyperprolactinemia caused by secondary factors, such as medications or hypothyroidism, the underlying issue should be addressed.

Conclusion. The use of cabergoline is an effective and safe treatment for pituitary macroadenomas in the first step. This case report demonstrates the efficacy of cabergoline as a first-line treatment for severe hyperprolactinemia, with considerable improvements in menstrual function and a significant decrease in prolactin levels. The targeted approach to dosage modifications and regular monitoring resulted in positive outcomes, highlighting the relevance of personalized treatment options in managing this endocrine condition.

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