

**HYPERPROLACTINEMIA IN PRIMARY INFERTILITY AND OPTIMIZATION OF ITS
TREATMENT**

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Abstract. Hyperprolactinemia is one of the most significant endocrine causes of primary infertility in women. Elevated prolactin levels disrupt the hypothalamic–pituitary–ovarian axis, leading to ovulatory dysfunction, menstrual irregularities, and infertility. Early diagnosis and optimized treatment strategies are essential for restoring reproductive function. This study was conducted at the Khorezm branch of the Republican Specialized Scientific and Practical Medical Center of Endocrinology and aimed to evaluate the clinical and hormonal characteristics of women with primary infertility associated with hyperprolactinemia, as well as to optimize therapeutic approaches. The results demonstrate that individualized dopamine agonist therapy significantly improves hormonal balance, ovulatory function, and fertility outcomes.

Key words: hyperprolactinemia, primary infertility, prolactin, dopamine agonists, ovulatory dysfunction

Introduction. Infertility represents a major medical and social problem worldwide, affecting approximately 10–15% of couples of reproductive age [1]. Primary infertility, defined as the absence of pregnancy in women who have never conceived despite regular unprotected sexual intercourse for at least one year, constitutes a substantial proportion of infertility cases. Endocrine disorders are among the leading causes of primary infertility, with hyperprolactinemia playing a particularly important role [2]. Prolactin is a peptide hormone secreted by lactotroph cells of the anterior pituitary gland. Under physiological conditions, prolactin regulates lactation and contributes to normal reproductive function. However, pathological hyperprolactinemia suppresses the pulsatile secretion of gonadotropin-releasing hormone (GnRH), resulting in decreased luteinizing hormone (LH) and follicle-stimulating hormone (FSH) secretion, impaired follicular maturation, anovulation, and infertility [3]. The etiology of hyperprolactinemia is multifactorial and includes pituitary adenomas, hypothyroidism, stress, polycystic ovary syndrome, and pharmacological agents [4]. Despite the availability of effective treatments, infertility associated with hyperprolactinemia remains a clinical challenge, particularly in regions with limited access to early endocrine diagnostics. Therefore, optimizing therapeutic approaches based on regional clinical experience is of great scientific and practical importance.

Aim of the study. The aim of this study was to assess the role of hyperprolactinemia in primary infertility and to optimize its treatment based on clinical and hormonal findings in women treated at the Khorezm branch of the Republican specialized scientific and practical medical center of endocrinology.

Materials and methods. A prospective observational study was conducted at the Khorezm branch of the Republican Specialized Scientific and Practical Medical Center of Endocrinology in the year 2025. The study included 80 women aged 20–38 years diagnosed with primary infertility. Participants were divided into two groups. Research group, which consisted of 50 women with primary infertility and laboratory-confirmed hyperprolactinemia and the control group that involved 30 women with primary infertility without endocrine abnormalities. All patients underwent comprehensive clinical and gynecological evaluation. Laboratory investigations included serum prolactin, thyroid-stimulating hormone (TSH), free thyroxine (FT4), LH, FSH, estradiol, and progesterone levels. Magnetic resonance imaging (MRI) of the pituitary gland was performed in patients with persistently elevated prolactin levels to exclude prolactin-secreting adenomas. Ovulatory function was assessed using menstrual cycle analysis, ultrasound folliculometry, and serum progesterone measurement in the luteal phase. Patients in the main group received dopamine agonist therapy (cabergoline or bromocriptine) with individualized dose titration based on prolactin levels and clinical tolerance. Treatment effectiveness was evaluated by normalization of prolactin levels, restoration of ovulatory cycles, and achievement of pregnancy. Statistical analysis was performed using standard methods. Differences were considered statistically significant at $p < 0.05$.

Results. Hyperprolactinemia was identified as a major etiological factor of primary infertility in 62.5% of women in the main group. The most common clinical manifestations included oligomenorrhea or amenorrhea (56%), chronic anovulation (72%), and galactorrhea (18%). After initiation of dopamine agonist therapy, normalization of prolactin levels was achieved in 84% of patients within 3–6 months. Regular ovulatory menstrual cycles were restored in 68% of women. Spontaneous pregnancy occurred in 32% of patients within 12 months of treatment. Patients receiving individualized dose adjustment demonstrated significantly better hormonal control and reproductive outcomes compared to those treated with fixed dosing regimens ($p < 0.05$).

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Indicator	Before Treatment (%)	After Treatment (%)
Elevated prolactin	100	16
Ovulation restored	0	68
Pregnancy achieved	0	32

Discussion. The findings of this study confirm the critical role of hyperprolactinemia in the pathogenesis of primary infertility. Elevated prolactin levels disrupt the hypothalamic–pituitary–ovarian axis, resulting in ovulatory failure and menstrual disturbances. Dopamine agonists remain the first-line therapy and are highly effective in restoring prolactin homeostasis and reproductive function. Optimization of treatment through individualized dose titration, regular hormonal monitoring, and management of underlying causes significantly enhances therapeutic efficacy. The

experience of the Khorezm branch of the Republican Specialized Scientific and Practical Medical Center of Endocrinology highlights the importance of specialized endocrine care in improving fertility outcomes.

Conclusions. Hyperprolactinemia is a common and potentially reversible cause of primary infertility. Early diagnosis and optimized treatment with dopamine agonists lead to normalization of prolactin levels, restoration of ovulatory function, and increased pregnancy rates. A multidisciplinary approach involving endocrinologists and gynecologists at specialized centers is essential for effective management and prevention of long-term reproductive complications.

References:

1. Mascarenhas M.N., et al. National, regional, and global trends in infertility prevalence. *PLoS Medicine*. 2012;9(12):e1001356.
2. Biller B.M.K., et al. Guidelines for the diagnosis and treatment of hyperprolactinemia. *Journal of Clinical Endocrinology & Metabolism*. 2011;96(2):273–288.
3. Melmed S. Pathogenesis and diagnosis of hyperprolactinemia. *The Journal of Clinical Endocrinology & Metabolism*. 2011;96(2):273–288.
4. Schlechte J.A. Prolactinoma. *New England Journal of Medicine*. 2003;349:2035–2041.
5. Colao A., et al. Pregnancy outcomes following cabergoline treatment. *Clinical Endocrinology*. 2008;68(1):66–71.