



**CAUSES AND CONSEQUENCES OF CHANGES IN PROLACTIN LEVELS IN
WOMEN**

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Abstract:

This article provides a detailed analysis of the causes of prolactin hormone level changes in women and their effects on the body. It discusses the role of the pituitary gland, hormonal imbalances, stress, medications, and other factors influencing prolactin levels. Additionally, the reproductive, metabolic, and psychological disorders resulting from increased or decreased prolactin are highlighted. The findings are significant for clinical practice in maintaining female reproductive health and preventing hormonal imbalances.

Keywords:

Prolactin, hormonal imbalance, amenorrhea, galactorrhea, female health, pituitary gland, reproductive disorders.

Annotatsiya:

Ushbu maqolada ayollarda prolaktin gormoni darajasining o'zgarish sabablari va uning organizmga ta'siri batafsil tahlil qilinadi. Maqolada gipofiz bezining roli, gormonal disbalanslar, stress, dori vositalari va boshqa omillar prolaktin miqdoriga qanday ta'sir ko'rsatishi ko'rib chiqiladi. Shuningdek, prolaktin darajasining oshishi yoki kamayishi oqibatida yuzaga keladigan reproduktiv, metabolik va psixologik buzilishlar ham yoritiladi. Tadqiqot natijalari klinik amaliyotda ayollarda reproduktiv sog'liqni saqlash va gormonal disbalansni oldini olishda muhim ahamiyatga ega.

Kalit so'zlar:

Prolaktin, gormonal disbalans, amenoreya, galaktoreya, ayol salomatligi, gipofiz, reproduktiv buzilishlar

Аннотация:

В данной статье подробно рассматриваются причины изменений уровня гормона пролактина у женщин и их влияние на организм. Обсуждается роль гипофиза, гормональные дисбалансы, стресс, медикаменты и другие факторы, влияющие на уровень пролактина. Также освещаются репродуктивные, метаболические и психологические нарушения, возникающие при повышении или снижении пролактина. Результаты



исследования имеют важное значение для клинической практики в области женского здоровья и профилактики гормональных нарушений.

Ключевые слова:

Пролактин, гормональный дисбаланс, аменорея, галакторея, женское здоровье, гипофиз, репродуктивные нарушения

Introduction

In women, prolactin is one of the main hormones secreted from the anterior lobe of the pituitary gland, which plays an important role in the normal functioning of the reproductive system and overall health.

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In women, prolactin is one of the main hormones secreted from the anterior lobe of the pituitary gland, which plays an important role in the normal functioning of the reproductive system and overall health. Prolactin levels control many physiological processes in the body, in particular, are involved in the regulation of mammary gland development and milk excretion, control of the reproductive cycle, as well as in the immune system and water-electrolyte balance. Therefore, an increase or decrease in prolactin levels leads to significant changes in the female body and clinical symptoms.

Increased prolactin levels (hyperprolactinemia) often cause reproductive health problems. Increased prolactin levels (hyperprolactinemia) often cause reproductive health problems. They include amenorrhea (interruption of the menstrual cycle), oligomenorrhea (low menstrual cycle), galactorrhea (emptying of milk from the mammary glands), infertility (non-occurrence of pregnancy), and decreased sexual activity. In addition, hyperprolactinemia can also affect metabolic processes, such as weight gain, insulin resistance, and lipid metabolism disorders. Psychologically, however, increased prolactin levels can be associated with depression, irritability, sleep disorders, and even abnormalities in the mental state. Conversely, a lower than normal prolactin level (hypoprolactinemia) also leads to significant disturbances in the female body. Hormone deficiency slows down the processes of ovulation and pregnancy, causes a decrease in milk excretion, and causes dysbalance in the reproductive system. Therefore, the presence of prolactin levels within regulatory limits is important in maintaining not only reproductive health, but also general physiological and psychological state in women.

Changes in the amount of prolactin are influenced by various internal and external factors. Internal factors include pathological conditions of the pituitary gland, such as prolactinoma, adenoma, and other forms of tumors. Changes in the amount of prolactin are influenced by various



internal and external factors. Internal factors include pathological conditions of changes in the amount of prolactin are influenced by various internal and external factors. Internal factors include pathological conditions of the pituitary gland, such as prolactinoma, adenoma, and other forms of tumors. Also, thyroid dysfunction, excessive or insufficient adrenal hormones, estrogen and progesterone balance disorders also affect prolactin levels. External factors include stress, mental strain, certain medications (antipsychotics, antidepressants, hormone preparations) and physiological changes during pregnancy and breastfeeding. However, age and reproductive history also have a significant effect on prolactin levels: in young women, hormone levels change physiologically, while in menopause they decrease.

Cause of origin

Currently, monitoring of prolactin levels and determining the causes of its change is an important clinical task in the field of Medicine and Endocrinology. Currently, monitoring of prolactin levels and determining the causes of its change is an important clinical task in the field of Medicine and Endocrinology. Early detection of hormonal dysbalance, the use of reproductive and general health measures, as well as the measurement and analysis of prolactin levels are necessary to prevent psychological and metabolic consequences. In this regard, an in-depth analysis of the causes and consequences of changes in the amount of prolactin in women, the identification of existing problems and the development of effective methods of treatment are considered one of the most relevant and actual issues in today's medical and hormonal studies. In this regard, an in-depth analysis of the causes and consequences of changes in the amount of prolactin in women, the identification of existing problems and the development of effective methods of treatment are considered one of the most relevant and actual issues in today's medical and hormonal studies.

Detailed analysis of the causes of changes in the amount of prolactin in women

Changes in prolactin levels (hyper - or hypoprolaktinemia) are due to many factors, which can be classified into categories such as pituitary gland-dependent, hormone and endocrine system-related, medication and external factors, as well as physiological conditions. Changes in prolactin levels (hyper - or hypoprolaktinemia) are due to many factors, which can be classified into categories such as pituitary gland-dependent, hormone and endocrine system-related, medication and external factors, as well as physiological conditions.

1. Causes related to the pituitary gland

Pathology of the pituitary gland is the main cause of changes in prolactin levels:

- Prolactinoma (a prolactin-producing type of pituitary adenoma)

It is a prolactin-producing pituitary tumor that increases hormone levels above normal. It is a prolactin-producing pituitary tumor that increases hormone levels above normal. Large prolactinoma causes reproductive disorders, galactorrhea, amenorrhea, and infertility in women. The mass of the Tumor can also press on surrounding structures, such as visual pathways and headaches.

- Pituitary injuries and operations



As a result of surgical intervention or trauma of the pituitary gland, its normal function may be impaired. This condition causes an increase or decrease in prolactin levels, as the pituitary frontal lobe injures prolactin-producing cells and the dopamine receptors that control them.

- Pituitary dysfunction (hypopituitarism)

The general deficiency of the pituitary also disrupts the mechanism of production of prolactin. In some cases, there is an increase in prolactin levels as a result of a decrease in the level of other hormones, since the mechanism of hormonal feedback is triggered.

2. Causes related to the endocrine system and hormones

Hormonal dysbalances play an important role in increasing or decreasing prolactin levels:

- * Dopamine deficiency

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Dopamine is the main neurotransmitter that suppresses prolactin secretion. Stress, psychological pressure, or dopaminergic drugs (antipsychotics) block dopamine receptors to increase prolactin levels.

- Thyroid dysfunction (hypothyroidism)

Low levels of thyroid hormones (T3 and T4) increase the secretion of TRH (thyrotropin-releasing hormone) in the hypothalamus-pituitary system. TRH stimulates prolactin secretion, so hypothyroidism leads to increased prolactin levels.

- Imbalance of estrogen and progesterone

Estrogen stimulates the activity of prolactin-producing cells. Increased estrogen levels during pregnancy, ovulation, or under the influence of certain hormonal contraceptive drugs increase prolactin levels. Progesterone stimulates the activity of prolactin-producing cells. Increased estrogen levels during pregnancy, ovulation, or under the



influence of certain hormonal contraceptive drugs increase prolactin levels. Progesterone, on the other hand, controls this process, so that their proportionality is important.

* Metabolic and insulin-related factors

Insulin resistance and metabolic syndrome can directly affect prolactin levels. Increased Insulin levels stimulate the activity of prolactin-producing cells and increase hormonal dysbalance.

3. Medicines and external factors

Some external factors and drugs cause an increase in prolactin levels:

- Antipsychotics and antidepressants

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For example, risperidone, haloperidol, and other dopamine antagonists increase prolactin levels. These drugs block dopamine receptors and inhibit hormone secretion.

- Antiemetics and antihypertensives

Drugs such as metoclopramide, domperidone also increase prolactin levels because they affect dopaminergic mechanisms.

* Hormone preparations

Some estrogen or combined hormonal contraceptives stimulate the production of prolactin, especially in long-term use.

* Stress and psychological pressure
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Some estrogen or combined hormonal contraceptives stimulate the production of prolactin, especially in long-term use.

* Stress and psychological pressure

Mental tension and stress cause hormonal changes in the hypothalamus-pituitary-gonad system, prolactin levels may increase.

4. Physiological and vital States



Some normal physiological conditions also cause a temporary increase in prolactin levels:

* Pregnancy and breastfeeding

With an increase in estrogen levels during pregnancy, prolactin also increases, which helps to prepare the mammary glands. The production of breast milk during breastfeeding is also associated with prolactin.

* Sleep and nutrition With an increase in estrogen levels during pregnancy, prolactin also increases, which helps to prepare the mammary glands. The production of breast milk during breastfeeding is also associated with prolactin.

* Sleep and nutrition

During the night and night sleep period, prolactin secretion increases, and the physiological response after meals also affects prolactin levels.

• Age and reproductive history

In young women, hormone levels change naturally, while during menopause, prolactin levels decrease. However, the history of childbirth, abortions, breastfeeding also have a significant impact on the amount of prolactin. In young women, hormone levels change naturally, while during menopause, prolactin levels decrease. However, the history of childbirth, abortions, breastfeeding also have a significant impact on the amount of prolactin.

Consequences when increased

An increase or decrease in prolactin levels in women seriously affects many systems of the body, and these consequences will depend not only on reproductive health, but also on metabolic, psychological and general physiological state. An increase or decrease in prolactin levels in women seriously affects many systems of the body, and these consequences will depend not only on reproductive health, but also on metabolic, psychological and general physiological state. An increase in prolactin levels, namely hyperprolactinemia, often leads to significant disruption in the reproductive system. Including interruption or disorganization of the menstrual cycle (amenorrhea or oligomenorrhea), disruption of the ovulation process, and related infertility are clinical signs found in many women. Also, galactorrhea, which is the separation of milk from the mammary glands that does not depend on the state of pregnancy or breastfeeding, is associated with an increase in prolactin levels, which causes women to experience psychological stress and discomfort. Iso, galactorrhea, which is the separation of milk from the mammary glands that does not depend on the state of pregnancy or breastfeeding, is associated with an increase in prolactin levels, which causes women to experience psychological stress and discomfort. Hyperprolactinemia also causes sexual dysfunctions such as decreased sexual activity, decreased libido, and in some cases vaginal dryness.

The increase in prolactin levels is not limited to the reproductive system alone; it also affects metabolic processes. In most cases, conditions such as weight gain, insulin resistance, lipid metabolism disorders and hyperglycemia are observed. The increase in prolactin levels is not limited to the reproductive system alone; it also affects metabolic processes. The increase in prolactin levels is not



limited to the reproductive system alone; it also affects metabolic processes. In most cases, conditions such as weight gain, insulin resistance, lipid metabolism disorders and

Treatment

Treatment of problems associated with an increase or decrease in prolactin levels in women requires a comprehensive approach and is carried out on an individual strategy. Treatment of problems associated with an increase or decrease in prolactin levels in women requires a comprehensive approach and is carried out on an individual strategy. The main goal of treatment is to return treatment of problems associated with an increase or decrease in prolactin levels in women requires a comprehensive approach and is carried out on an individual strategy. The main goal of treatment is to return the level of prolactin to the normative limit, restore reproductive functions, reduce metabolic and psychological consequences, and also prevent long-term complications. In clinical practice, treatment is carried out in two main directions: conservative (medicamentosis) and surgical approaches, as well as additional measures related to physiological and lifestyle.

Dopamine agonists are used in the first place in the treatment of medicamentosis, as they are effective in suppressing prolactin secretion and reducing the activity of prolactin-producing cells in the pituitary. Dopamine agonists are used in the first place in the treatment of medicamentosis, as they are effective in suppressing prolactin secretion and reducing the activity of prolactin-producing cells in the pituitary. The most commonly used drugs are bromocriptine and cabergoline, which act on pituitary dopamine receptors and normalize hormone levels. These drugs, along with lowering prolactin levels, also eliminate clinical signs such as galactorrhea and amenorrhea, and also help reduce tumor size. Bromocriptine and cabergoline drugs are prescribed in accordance with the individual dose and duration of treatment, hormonal monitoring and clinical monitoring are carried out during treatment. Bromocriptine and cabergoline drugs are prescribed in accordance with the individual dose and duration of treatment, hormonal monitoring and clinical monitoring are carried out during treatment. In some cases, side effects of the drug can be observed, such as dizziness, nausea or a decrease in arterial pressure, so medical supervision is required.

If an increase in prolactin levels is associated with a pituitary tumor (prolactinoma) and medicamentosis treatment does not work or the tumor size is large, a surgical approach is used. If an increase in prolactin levels is associated with a pituitary tumor (prolactinoma) and medicamentosis treatment does not work or the tumor size is large, a surgical approach is used. Removal of pituitary adenoma through the transphenoidal microchisis approach is currently the most commonly used surgical method. After surgery, hormone levels are re-normalized, reproductive functions are restored, and additional symptoms such as visual symptoms, headaches are reduced. At the same time, hormonal monitoring is continued in the post-surgical period, and in some cases dopamine agonists can be used additionally.

In the process of treatment, it is important not to neglect both lifestyle and physiological measures. Reducing stress, normalizing sleep and eating patterns, maintaining normal physical activity will provide additional assistance in controlling prolactin levels. In the process of



treatment, it is important not to neglect both lifestyle and physiological measures. Reducing stress, normalizing sleep and eating patterns, maintaining normal physical activity will provide additional assistance in controlling prolactin levels. If prolactin levels are not associated with medication or pituitary pathology, it is possible to alleviate hormonal dysbalance and support reproductive health through these conditions.

Treatment also requires an individual approach in cases associated with a decrease in prolactin levels. In these cases, the focus is on stimulating the reproductive system, restoring ovulation and supporting milk separation. Treatment also requires an individual approach in cases associated with a decrease in prolactin levels. In these cases, the focus is on stimulating the reproductive system, restoring ovulation and supporting milk separation. Hormonal preparations, combinations of estrogen or progesterone, as well as physiological stimulating methods (for example, stimulation of breastfeeding) are used. During treatment, hormonal monitoring, reproductive cycle monitoring and clinical symptoms must be evaluated.

Thus, the treatment of changes in prolactin levels in women is a multifaceted, individual approach-intensive process that includes medicamentous therapy, surgical intervention and lifestyle measures. Thus, the treatment of changes in prolactin levels in women is a multifaceted, individual approach-intensive process that includes medicamentous therapy, surgical intervention and lifestyle measures. The effect of treatment depends on hormonal monitoring, clinical monitoring, physician supervision and close cooperation with the patient, through which reproductive, metabolic and psychological consequences can be prevented.

Preventive measures

The role of preventive measures to prevent changes in prolactin levels in women and maintain a healthy hormonal balance is very important, since hyper - or hypoprolaktinemia affects not only the reproductive system, but also metabolic, psychological and general physiological processes. The role of preventive measures to prevent changes in prolactin levels in women and maintain a healthy hormonal balance is very important, since hyper - or hypoprolaktinemia affects not only the reproductive system, but also metabolic, psychological and general physiological processes. Preventive measures include several main areas: lifestyle and habit regulation, stress management, regular medical monitoring, responsible drug use, as well as early detection and treatment of diseases of the endocrine system.

Lifestyle-related preventive measures are very effective in normalizing prolactin levels. Maintaining a normal sleep pattern, adequate physical activity, a balanced diet, and avoiding excess weight support hormonal balance. Lifestyle-related preventive measures are very effective in normalizing prolactin levels. Maintaining a normal sleep pattern, adequate physical activity, a balanced diet, and avoiding excess weight support hormonal balance. Especially rich in trace elements such as omega-3 fatty acids, vitamin B6 and zinc, the diet helps in the regulation of prolactin secretion. Excessive caffeine consumption, which negatively affects alcohol and the hormonal system, is among the preventive measures, since they can aggravate hormonal dysbalance.



Stress management is of particular importance in prevention, since mental strain and psychological pressure reduce dopamine secretion and, as a result, lead to an increase in prolactin levels. Stress management is of particular importance in prevention, since mental strain and psychological pressure reduce dopamine secretion and, as a result, lead to an increase in prolactin levels. Therefore, the introduction of meditation, yoga, breathing exercises, psychotherapy and other relaxation techniques into the lifestyle is an important tool in maintaining hormonal balance.

Medical monitoring and Prevention are also one of the main areas. Women should regularly check hormonal analyzes, in particular, the level of prolactin and the functioning of the pituitary-gonad system. Medical monitoring and Prevention are also one of the main areas. Women should regularly check hormonal analyzes, in particular, the level of prolactin and the functioning of the pituitary-gonad system. Treatment and preventive measures, including assessment of thyroid function, pituitary health, and pregnancy history, are important under the supervision of an endocrinologist or gynecologist. This allows for early detection of hormonal imbalances, monitoring of adverse effects of medications, and prevention of excessive prolactin secretion.

Responsible use of medications is also an integral part of prevention. Responsible use of medications is also an integral part of prevention. Antipsychotics, antidepressants and other drugs that act on dopamine receptors should only be used under the supervision of a doctor, as they can cause an increase in prolactin levels. Individual characteristics, reproductive history, and hormone levels are also taken into account when choosing hormonal contraceptives.

Physiological preventive measures are also important. Physiological preventive measures are also important. Prolactin levels increase naturally during pregnancy and breastfeeding, so the negative effects of hormonal dysbalance can be reduced by supporting the mother's body, adequate physiological preventive measures are also important. Prolactin levels increase naturally during pregnancy and breastfeeding, so the negative effects of hormonal dysbalance can be reduced by supporting the mother's body, adequate sleep, proper nutrition, and maintaining mental state. Also, women of reproductive age can pre-identify changes in prolactin levels and carry out preventive measures by controlling the history of childbirth and breastfeeding.

Thus, preventing changes in prolactin levels in women requires a comprehensive approach. Thus, preventing changes in prolactin levels in women requires a comprehensive approach. This approach is carried out through lifestyle, psychological state management, regular medical monitoring, proper use of drugs and taking into account physiological conditions. Timely use of preventive measures allows not only reproductive and general health, but also the Prevention of long-term metabolic, psychological and bone health-related complications.

Conclusion



Changes in prolactin levels in women affect many physiological, endocrine and psychological processes. Changes in prolactin levels in women affect many physiological, endocrine and psychological processes. While hyperprolactinemia can lead to disorders in the reproductive system, clinical conditions such as amenorrhea, galactorrhea, and infertility, hypoprolactinemia causes decreased milk separation and ovulation disorders. Changes in prolactin levels are affected by pathology of the pituitary gland, hormonal dysbalance, stress, medication and physiological conditions. Treatment requires an individual approach and includes medicamentous therapy, surgical intervention, and lifestyle measures. Preventive measures, on the other hand, play an important role in reproductive and general health, preventing long-term metabolic and psychological complications. At the same time, regular medical monitoring and hormonal monitoring are the main tools for normalizing prolactin levels and ensuring the healthy functioning of the reproductive system.

In general, changes in the level of prolactin cause complex and multi-systemic consequences in the female body, therefore, its monitoring, early detection, prevention and individual treatment strategies are an urgent and important issue in modern gynecology and Endocrinology.

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