

ACCOMPANYING THE DISEASE OR SYNDROME OF NERVOUS-REGULATORY DYSFUNCTION?

Darina Mineva

Central Office of the National Health Insurance Fund, Sofia, Bulgaria, dariamineva@abv.bg

Abstract: Introduction: In medical practice, concomitant diseases are important for the healing process and how directly they are related to the genesis of the active disease, as well as the likelihood of being subject to uniform regulatory mechanisms. This study presents concomitant diseases in which cancer develops. Aim and methodology: The article aims to present a constellation of diseases in which the oncological gynecological disease has developed. Statistics processed with Excel were used. Results: The study covers one hundred and ninety-six clinical cases of patients with gynecological malignancies who are candidates for surgical treatment. The health status was studied with an emphasis on the presence of concomitant diseases. Thirty-nine cases were not diagnosed with concomitant diseases. In the remaining one hundred and thirty cases there is a recurrence of concomitant diseases - hypertension, diabetes and Hashimoto's thyroiditis and one case of hyperthyroidism. Forty percent of cases were diagnosed with concomitant hypertension. Eighteen percent of cases have diabetes mellitus as a concomitant disease. Fourteen percent of cases were diagnosed with concomitant hypertension and non-insulin-dependent diabetes mellitus as a concomitant disease. In eight percent of cases, the presence of autoimmune thyroiditis - Hashimoto's syndrome as a concomitant disease. Discussion: The common aspect between the three diseases: hypertension, diabetes and Hashimoto's autoimmune thyroiditis, is that they are in violation of metabolism, therefore with a violation of homeostasis of the human body.

Every disease is a condition of the body that is caused by the influence of strong stimuli, which disturbs the balance of the internal environment, namely homeostasis. Blood pressure, along with temperature, and blood composition: water, sodium, calcium, acidity and alkalinity, glucose are the most important factors in homeostasis. The mechanism of regulation is the negative feedback, which aims to slow down or stop the processes, which automatically maintains the balance. Conclusion: The participation of the same organs in the regulation of endocrine diseases - pituitary, hypothalamus, the role of the sympathetic nervous system and impaired homeostasis, may explain the unity in the constellation of oncological gynecological disease - arterial hypertension, autoimmune diabetes mellitus, noninsulinemia. Probably it is a question of disturbed homeostasis in a percentage of cases of oncological disease with concomitant diseases, forming a syndrome of neuro-regulatory dysfunction.

Keywords: homeostasis, arterial hypertension, autoimmune hashimoto thyroiditis, diabetes mellitus, oncogynecology

1. INTRODUCTION

In medical practice, concomitant diseases are important for the healing process and how directly related to the genesis of the active disease, as well as the likelihood of being subject to unified regulatory mechanisms. This study presents concomitant diseases in which cancer develops.

2. PURPOSE AND METHODOLOGY

The article aims to present a constellation of diseases against which oncological gynecological disease has developed. Statistics processed with Excel were used.

3. RESULTS

The study covers 196 (one hundred and ninety-six) clinical cases of patients with gynecological malignancies who are candidates for surgical treatment. The health status was studied with an emphasis on the presence of concomitant diseases.

In 39 (thirty nine) or 20% (twenty percent) cases no concomitant diseases are detected. In the remaining 157 (one hundred and fifty and seventy) cases there was a recurrence of concomitant diseases - hypertension, non-insulin dependent diabetes mellitus and Hashimoto's autoimmune thyroiditis and one case of hyperthyroidism (Table 1).

Table 1 Distribution of cases by concomitant diseases

Value	Concomitant disease				
	No concomitant disease	Hypertension	Non-insulin - dependent diabetes mellitus	Hypertension and Non-insulin - dependent diabetes mellitus	Hashimoto's thyroiditis
Number	39	78	37	27	15
%	20	40	18	14	8

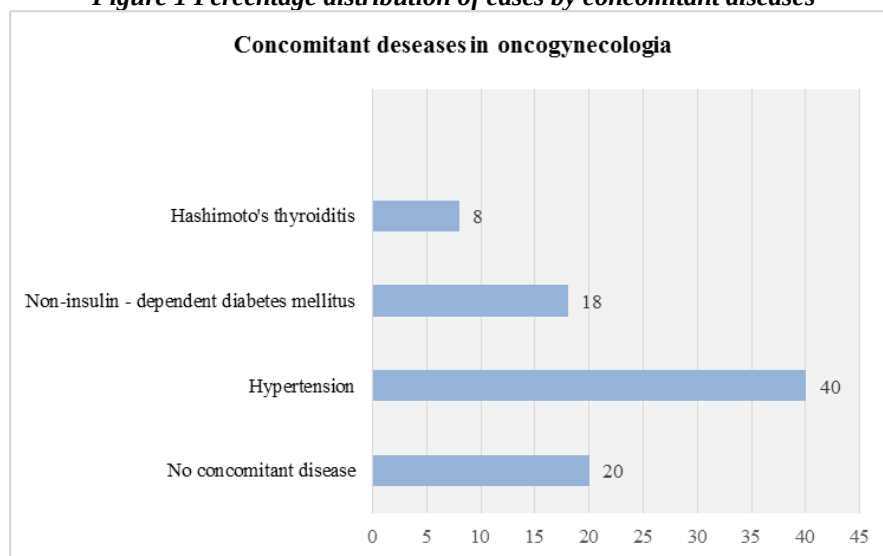
Arterial hypertension (AH) was diagnosed in 78 (seventy-eight) patients as a concomitant disease, accounting for 40% (forty percent) of cases.

37 (thirty-seven) patients were diagnosed with non-insulin-dependent diabetes mellitus as a concomitant disease, accounting for 18% (eighteen percent) of cases.

In 27 (twenty-seven) patients, both hypertension and non-insulin-dependent diabetes mellitus were diagnosed as concomitant disease, accounting for 14% (fourteen percent) of cases.

Hashimoto's Autoimmune Thyroiditis was diagnosed in 15 (fifteen) patients as a concomitant disease, accounting for 8% (eight percent) of cases (Figure 1).

Figure 1 Percentage distribution of cases by concomitant diseases



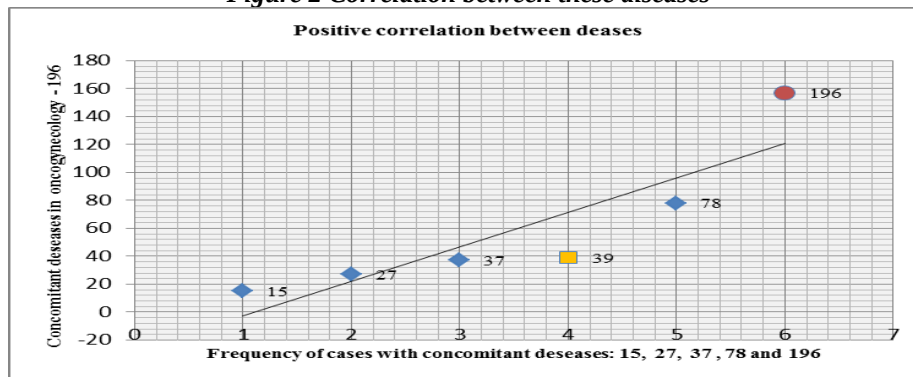
The schemes prove the recurrence of the three types of diseases in 66% (sixty-six percent) of the cases. In 27 (twenty-seven cases) cases, the presence of hypertension and non-insulin-dependent diabetes mellitus was observed, which accounted for 14% (fourteen percent) of all cases of cancer.

As the concomitant diseases described above were diagnosed before the onset of the cancer, they can be considered as a terrain in which it develops. Isn't this a common factor influencing the development of cancer in these 157 (one hundred and fifty and seventy) cases? ”

4. DISCUSSION

The common aspect between the three diseases: hypertension, non-insulin-dependent diabetes mellitus and Hashimoto's autoimmune thyroiditis is that they are impaired in metabolism, and therefore in impaired homeostasis of the human body. There is a positive, not very strong correlation between these diseases (Figure 2).

Figure 2 Correlation between these diseases



The cases of oncological disease in gynecology with accompanying ones are located on one right, ascending, except for thirty-nine cases, which are without concomitant diseases.

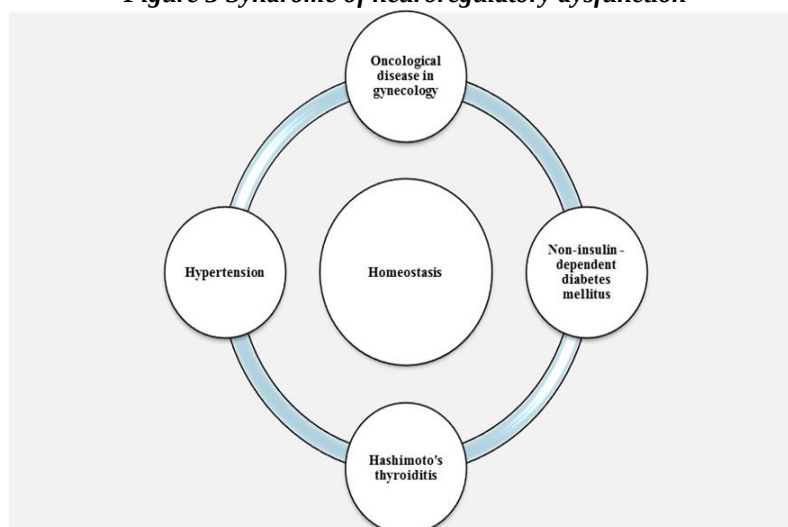
Every disease is a condition of the body that is caused by the influence of strong stimuli, which disturbs the balance of the internal environment, namely homeostasis. At the same time, the adaptation of the organism to the environment suffers and leads to permanent damage to the organs, expressed by structural and functional deviations. The most important regulatory factors of homeostasis are: temperature, blood pressure and blood composition (water, sodium calcium, acidity and alkalinity, glucose). The mechanism of regulation is the negative feedback, which aims to slow down or stop the processes, which automatically maintains the balance.

The lower parts of the brain stabilize blood pressure through negative feedback. Receptors throughout the body send information to the brain. At high blood pressure, negative feedback is turned on and as a result the pulse slows down. At low blood pressure, the mechanism of positive feedback is activated and as a result the pulse is accelerated.

At low oxygen levels in the bloodstream, hormones are released from the brain to increase the concentration of oxygen associated with an increase in heart rate. This is achieved by releasing adrenaline from the pituitary gland into the hypothalamus. Conversely, acetylcholine is released to reduce heart rate.

In diabetes, the regulation of blood sugar is impaired. At high glucose levels, the pancreas is involved in insulin production. At low levels - the liver to produce glucose from glycogen. It is obvious that drugs do not affect the pathogenesis of the disease, but only the result of its violation. Probably homeostasis is disturbed in the percentage of cases of cancer. Probably it is a question of disturbed homeostasis in the percentage of cases of oncological disease with concomitant diseases, forming a syndrome of neuro-regulatory dysfunction (Figure 3).

Figure 3 Syndrome of neuroregulatory dysfunction



A large-scale cohort study is needed to cover all aspects of homeostasis in patients with gynecological cancer and concomitant diseases such as hypertension, non-insulin dependent diabetes mellitus and Hashimoto's autoimmune thyroiditis.

5. CONCLUSION

The participation of the same organs in the regulation of endocrine diseases - pituitary, hypothalamus, the role of the sympathetic nervous system and impaired homeostasis, show a tendency to confirm the constellation of oncological gynecological disease - hypertension, non-insulin-dependent diabetes mellitus of neuroregulatory dysfunction.

LITERATURE

- Портнов, А. (2021). *Патогенеза на артериална хипертония*, [HTTPS://BG-M.ILIVEOK.COM/HEALTH/PATOGENEZA-NA-ARTERIALNA-HIPERTONIYA_86170I15937.HTML](https://BG-M.ILIVEOK.COM/HEALTH/PATOGENEZA-NA-ARTERIALNA-HIPERTONIYA_86170I15937.HTML)
- Каменов, З. (2010). *Артериална хипертония*, <https://www.medinfo.bg/spisanie/2010/9/statii/arterialna-hipertonija-976>
- Хипотиреоидизъм - причини, симптоми и рискови фактори, (2021). <https://www.omed.bg/Hipotireoidizym---prichini-simptomi-i-riskovi-faktori-page1615.html>
- Хипотиреоидизъм и болестта Хашимото – всичко, което трябва да знаете*, (2020). <https://drtozhkov.com/hipotireoidizam-i-bolestta-hashimoto-vsichko-koeto-tryabva-da-znaete/>
- Каква е целта на хомеостазата?, (2022). <https://bg.lamscience.com/what-is-goal-homeostasis>
- Хомеостаза - какво е това? Понятие за хомеостаза, (2019). <https://bg.encyclopedia-titanica.com/significado-de-homeostasis>
- Хомеостаза, или за това как тялото ни се самелекува, <http://biomall.bg/homeostaza-poddurjane-na-vutreshnata-sreda-na-organizma>
- Dunkin, M.A. (2020). *Hashimoto's Thyroiditis*, <https://www.webmd.com/women/hashimotos-thyroiditis-symptoms-causes-treatments>
- Hashimoto's Thyroiditis*, <https://www.hopkinsmedicine.org/health/conditions-and-diseases/hashimotos-thyroiditis>
- Hershman, J.M.(2020). *Hashimoto Thyroiditis* (Autoimmune Thyroiditis; Chronic Lymphocytic Thyroiditis), <https://www.msdmanuals.com/professional/endocrine-and-metabolic-disorders/thyroid-disorders/hashimoto-thyroiditis>