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## POSTOCOID COMPLICATIONS IN ENDOCRINOLOGY

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### ABSTRACT

*A study of the literature and our own observations allow us to conclude that COVID-19 has become a provoking factor in the onset or aggravation of endocrinopathies. The number of newly diagnosed diabetes mellitus has increased, and in persons with an established diagnosis of diabetes, the likelihood of a severe course, complications and mortality has been noted. One of the reasons for this was the lack of routine monitoring and treatment of patients during the quarantine period. The highest percentage of deaths from coronavirus was noted among overweight patients. In the lungs of an obese patient and Kovi d -Infection with pulmonary fibrosis occurs more pronounced than without obesity. The condition of the thyroid gland, adrenal glands and pituitary gland is negatively affected by both infection and the methods of treatment that were taken to save patients.*

**KEYWORDS:** COVID-19 and endocrinopathy and: obesity, Sugar first diabetes and complications

### INTRODUCTION

The 2019 coronavirus disease caused an unprecedented pandemic that continues to the present day. The severity of the course of COVID-19 varies from a mild form of influenza-like illness to the development of multiple organ dysfunction, which leads to severe complications and death [1, p.3 2]. More than a year has passed since the start of the pandemic; I have accumulated experience in diagnostics, treatment, and the clinic of this ailment. The new type of coronavirus SARS-CoV-2 is characterized by polymorphism of clinical manifestations, unpredictable consequences and complications, including on endocrine organs. The accumulated evidence and clinical experience indicate that older patients and those with chronic conditions such as diabetes mellitus (DM), cardiovascular disease (CVD) and obesity may be at high risk of infection and development of more severe forms of COVID disease. nineteen. O are written in 5-10%

of patients whose condition worsened, n in spite of the full treatment conducted. The collision of two global pandemics, COVID-19 and diabetes, led to the fact that type 2 diabetes became the second most common cause of death in COVID-19 [2, p. 3]. T2DM is associated with a four-fold increased risk of death from COVID-19, according to data from 88 medical centers in the United States. The coronavirus has increased the death rate of patients with diabetes by 20%. According to our observations [3, p. 79], most patients with type 1 and 2 diabetes mellitus showed a significant deterioration in their condition due to the fact that during the pandemic they did not receive planned treatment due to the lack of hospitalization and monthly follow-up by an endocrinologist. In both cases, we can assume the presence of a stress factor, anxiety associated with the rapid spread of infection, forced change in lifestyle, habitual way [4, p. 265]. In this situation, should We mention tit importance of modern information technologies for health



professionals and the population, distance learning and discussing the various clinical situations in real time. Timely and accurate information using all available information technologies YaV and I eh important m factor in effective prevention and treatment of diabetes, obesity and other endocrinopathies.

The greater the comorbidity, the older the patient, the greater his body weight - the more likely the transition to a more severe phase of the disease. Thus, patients aged 30 to 69 years constituted the group of the most affected people - this is 77.8% of the more than 44,000 confirmed cases of COVID-19 in China [5]. The mortality rate was the highest in people aged 80 and over - 14.8%, in the age from 70 to 79 years it was 8%, in the age from 60 to 69 years - 3.6%, and the lowest in people younger 60 years. Patients with comorbid conditions had a higher overall mortality rate: 10.5% for those with CVD; 7% - with SD; 6% - with cancer, arterial hypertension and chronic respiratory failure, compared with 0.9% for people without comorbid conditions [6, p. 11]. H aglyadno is observed in humans with diabetes mellitus and its complications - diabetic foot syndrome, "diabetic heart", kidney and liver disorders.

The risk of death in case of infection with coronavirus is 48% higher if a person is obese [7, p. 68], since this leads to a disruption in the functioning of the immune system. Innovative technologies for the production of nutritious foods, designed to provide the population with food, in fact, cause enormous harm to the health of children and adults. The diet of the average modern person is dominated by refined foods containing a huge amount of "empty" calories, sugar, unhealthy fats and lacking vitamins, minerals, and fiber. Eating processed food contributes to metabolic disorders, weight gain, and increases the risk of chronic disease. The study of the literature and our own observations make it possible to predict that the alimentary factor, as well as the increase in mass forced hypodynamia, will lead to a sharp increase in postcoid obesity.

In the future, information appeared about the defeat of the pituitary gland, hypothalamus, thyroid gland (TG) and adrenal glands by coronavirus, their structural and functional disorders. According to the previous experience of monitoring patients with SARS MERS, it is obvious that cases of residual morphological damage to the endocrine system are expected [8, p. 266]. It is known that viral thyroid lesions are considered most often in the context of a trigger of subacute thyroiditis, "silent thyroiditis", immunogenic thyrotoxicosis or hypothyroidism. A typical neurological manifestation - a violation of the sense of smell - can be explained by the expression of ACE 2 on olfactory epithelial

cells. The tissues of the hypothalamus and pituitary gland also express ACE 2 and theoretically can become a target for the virus. At autopsy, edema and degeneration of neurons and identification of the SARS genome in them were demonstrated in the hypothalamus. It was assumed that these patients would develop hypophysitis or hypothalamic-pituitary dysfunction.

Central hypocorticism was found in 40%, and secondary hypothyroidism in 5%. It can be assumed to come to life, that the reduction of adaptive reserves due to hypothalamic-pituitary dysfunction creates clinical model combinations of primary hypothyroidism (transient, destructive, including transient thyrotoxic phase autoimmune) c central hypocorticism that explains long period of convalescence and formation of nonspecific endocrine symptoms and syndromes when recovering.

A new type of coronavirus SARS-CoV-2, the causative agent COVID-19, n can Rivest to subacute thyroiditis - inflame eniyu thyroid characterized m Xia pain in the neck, which is usually preceded by upper respiratory tract infection [9, p. 72]. It can be caused by a viral infection or post-viral inflammatory response. We observed 6 patients, 3 men and 3 women aged 18 to 40 years, who consulted an endocrinologist with complaints of pain in the front of the neck, fatigue and chills lasting an average of a week. All patients described reveal Leno weight loss, tachycardia, heat intolerance. All surveyed suffered COVID-19 for about one or two a month and before there were signs of a new influenza-like illness, including productive cough, fever, chills and shortness of breath. Treating all held on home quarantine, the symptoms disappeared after a week of maintenance therapy. On physical examination, no patient was not significantly increased Ia thyroid, there was no pain, was elevated typical sensitive spine palpation. L imphadenopathy was not identified. On examination of the eyes, none of them showed lagging or retraction of the eyelids. T remor is found in all; it ranged from moderate to severe.

Neurological examination showed no muscle weakness or sensory abnormalities. Examination of the extremities revealed erythema on the palms, warm to the touch; there were no signs of rash or swelling. Thyrotoxicosis symptoms such as sore throat, fatigue, chills, anorexia, and weight loss can be easily confused with COVID-19 symptoms [10]. When ultrasonic study and thyroid identify Leno diffusely inhomogeneous Single structures and, indicating on thyroiditis. Levels of free thyroxine (T<sub>4</sub>) and total triiodothyronine (T<sub>3</sub>) were increased,



at the Level of thyroid stimulating hormone (TSH) was low - 0.01 - 0.03 mIU / L. Tests for the presence of antibodies to thyroid peroxidase (AT-TPO), to thyroid-stimulating hormone (AT-TSH) and reverse transcription polymerase chain reaction (RT-PCR) for COVID-19 were negative. Subacute thyroiditis associated with COVID-19 was diagnosed. And studies have shown that the pathology results from the recognition by macrophages and cytotoxic T cells of new viral antigens or virus-damaged host tissues. It turned out that the thyroid gland contains a significant amount of angiotensin-converting enzyme 2 (ACE 2) receptors, which are necessary for the development of COVID-19 [11, p. 59]. The study carried out by L and [12, p. 45], showed that men with COVID-19 have a higher number of cytotoxic T cells, natural killer cells, B cells and a more active interferon response. Negative results of tests on TPO and AT-TSH indicate a lack of autoimmune reactions in the thyroid gland. In 60% of cases, hyperthyroidism develops into hypothyroidism due to depletion of the pool of thyroid hormones.

Any serious infection, including COVID-19, disrupts the normal regulation of the hypothalamic-pituitary-adrenal axis. Experience from China has shown that systemic corticosteroids have been prescribed to about half of COVID-19 patients with severe or critical illness. A retrospective study of 84 patients with ARDS associated with COVID-19 showed lower mortality in those who received methylprednisolone. The severity and prognosis due to this disease is difficult to assess, since the course of the disease itself and suppression of the adrenal glands with large doses of corticosteroids has an impact [13, p. nine]. A systematic review of observational studies [14, p. 396] revealed a high frequency in the development of undesirable effects, including avascular necrosis, psychosis, diabetes, and a slowdown in viral clearance. Also, corticosteroids can increase mortality and the risk of secondary infections. However, according to our observations, all patients receiving glucocorticoid therapy had an increase in body weight [15, p. 89].

## CONCLUSION

Thus, the pandemic associated with SARS-CoV-2 has led to an increase in the number of patients with endocrine pathology, including those who were not widespread in the dock period (subacute thyroiditis), an aggravation of type 1 and 2 diabetes mellitus, its complications, further exacerbated the problem of obesity. Particular attention should be paid to a balanced diet and sufficient physical activity to

prevent the growth of these diseases and severe postcoid complications.

As countries are increasing efforts to prevent or not the propagation of COVID-19, musts strive to mitigate the effects of the pandemic. Collaboration at the local, regional, national and international levels with a focus on high-quality research, evidence-based practice, sharing of data and resources, and adherence to all ethical standards will be key to the success of these efforts. It is our generation that will face this new medical mission.

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