



## **FEATURES OF COVID-19 REJECTION IN CHILDREN WITH ALLERGO- DERMATITIS**

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The adrenal glands are paired glands of the endocrine system. They secrete various hormonal substances that are responsible for metabolic processes, such as epinephrine, cortisol, and aldosterone. Disruptions in the functioning of the adrenal glands can be associated with the occurrence of various dangerous diseases. Their timely detection will allow you to begin treatment and avoid further harmful consequences. At the slightest appearance of symptoms, you must immediately undergo all tests. They can be done in our medical center. The adrenal glands consist of the inner medulla and the cortex. The upper part of the cortex, which is the glomerular zone, produces aldosterone. The inner layer synthesizes sex hormones. The medulla produces norepinephrine and adrenaline. The main glucocorticoid is cortisol. They regulate metabolism and have an anti-inflammatory effect. Aldosterone is the most active mineralocorticoid. It increases the excretion of potassium and reduces the excretion of sodium from the body.

More than a year has passed since the registration of COVID-19. During this time, a huge number of studies and publications have appeared on the features of the course, diagnosis and treatment of this infection, but it can be stated that the COVID-19 pandemic is characterized not only by global spread, but also by high mortality rates and the lack of a sound strategy for managing this pathology. It is obvious that the influence of SARS-CoV-2 is not limited to the involvement of the lungs in the pathological process. The spectrum of endocrine pathology associated with coronavirus infection is undoubtedly headed by diabetes mellitus, which leads to a worsening of the patient's condition and an increased risk of negative outcomes. At the same time, SARS-CoV-2 is a disruptor of the endocrine system, so other endocrine glands are also involved in the pathological process, among which the adrenal glands occupy an important place. Our knowledge of the virulence, pathogenesis, endocrine phenotype, and treatment of COVID-19 is still limited and requires constant updating and rethinking, especially for endocrine diseases that require specialized approaches. There are challenges in managing patients with adrenal insufficiency (AI). The consequences of increasing the dose of glucocorticoids (GC) in an infected person to an amount sufficient to prevent adrenal crisis are still unclear. Potential effects of COVID-19 on the adrenal glands, adrenal reserve, and peripheral GC dynamics are being studied. Discussions continue regarding the need, timing, dosage, and withdrawal of GC in patients



with COVID-19 without AI. There are difficulties in managing patients with adrenal insufficiency (AI). The consequences of increasing the dose of glucocorticoids (GC) in an infected person to an amount sufficient to prevent adrenal crisis are still unclear. Potential effects of COVID-19 on the adrenal glands, adrenal reserve, and peripheral GC dynamics are being studied. Discussions continue regarding the need, timing, dosage of GCs, and their withdrawal in patients with COVID-19 without AI. As is known, the adrenal glands produce hormones that play a critical role in regulating growth, blood pressure, maintaining electrolyte homeostasis, regulating the immune system, and in adapting the body to stressful conditions, among other parameters. Regulation of adrenal function is achieved through direct effects of corticotropin-releasing hormone (CRH) and feedback, which suppresses the production of the main glucocorticoid hormone (cortisol) when physiological levels are exceeded [3]. Important regulatory factors for cortisol synthesis are stress and circadian oscillations. This multi-stage regulation system is necessary to ensure the coherence of functions and to potentially reduce the risk of excess or deficiency of cortisol. Patients with NI generally have higher morbidity and mortality rates than the general population, even when receiving replacement therapy. Impaired immune function is one of the factors that may explain the increased incidence of infectious diseases in these individuals and the overall increase in mortality [2, 6]. However, the accumulated data to date do not allow us to conclude that patients with NI have an increased risk of COVID-19 infection. Moreover, in one study, the prevalence of COVID-19 in a cohort of patients with NI was lower than in the general population. The authors explained this phenomenon by the fact that patients with NI are motivated to comply with preventive measures [2]. The effects of other drugs used in the treatment of COVID-19 should be kept in mind. For example, ritonavir inhibits the cytochrome P4503A enzyme, increases the exposure to GCs and prolongs their half-life, causes iatrogenic hypercortisolism, and worsens immunosuppression. On the other hand, in the treatment of Cushing's syndrome, the drugs used (ketoconazole, mifepristone, mitotane, etc.) can lead to NI, which will aggravate negative outcomes.