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PSYCHOEMOTIONAL STRESS AS A FACTOR AFFECTING NEUROENDOCRINE MECHANISMS IN ADOLESCENT GIRLS

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Abstract
Adolescence is characterized by significant changes in the activity of the nervous and endocrine systems. At this age, psychoemotional stress can affect the hormonal background and the development of sexuality, causing neuroendocrine disorders. The article analyzes the mechanisms of stress on the hypothalamic-pituitary-adrenal system (GGAT), neuroplasticity of the brain, as well as methods of correcting such conditions. The data of modern studies showing the role of social and biological factors in these processes are presented.

Keywords: Psychoemotional stress, adolescence period, neuroendocrine mechanisms, hypothalamo- pituitary - adrenal system , hormonal balance.

Introduction

Adolescence is a period of significant changes in the body, when the nervous and endocrine systems reach a new level of functional maturity. At this time , the organism is external factors, including stress effects especially sensitive will be Psychoemotional stress GGAT and another hormonal of arrows at work changes cause release it is possible while physiological and psychological of deviations development take comes [5].

GGAT stress response main regulator is considered In teenagers of chronic stress cortisol levels long term to increase take it comes and immune dysfunction , sleep to the violation and depressive to the circumstances take coming possible [1]. American Association of Endocrinology (2020) . according to , in a state of stress has been cortisol levels in 70% of adolescents 25-30% higher than the norm b died.

Chronic stress reduces the plasticity of nerve cells, especially in the hippocampus, which affects memory and emotional state [1]. In a study by Canadian scientists (2022), it was shown that the volume of the hippocampus can decrease by 8-10% in adolescents with high levels of anxiety [1]. Disturbances in the secretion of gonadotropins (Follicle Stimulating Hormone and Luteinizing Hormone) can lead to delayed sexual intercourse or irregular menstrual cycles.

Of stress social aspects

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Study downloads i : Education download high has been in teenagers more tiredness signs and cortisol levels increase is observed .

The role of social media: Constant use of social media increases stress and can lead to the development of depression. A US study found that 40% of teenagers with chronic stress were linked to negative self-perception through social media.

Family Environment: Adolescents in families with high levels of conflict often exhibit hormonal and emotional disturbances [9].

Diagnostic methods

1. Hormonal analysis:

Determination of cortisol, prolactin, FRG and LG levels.

2. Psychometric tests :

Anxiety and depression scale .

Methods of correction

1. Psychological support :
2. Cognitive-behavioral therapy .

Social adaptation programs.

Pharmacological correction: the use of adaptogens to stabilize the work of GGAT.

Physical activity: Regular physical exercise helps to regulate the hormonal background. psycho-emotional stress on neuroendocrine mechanisms during adolescence remains an urgent task of medicine and psychology.

Long-term health effects: Chronic stress experienced during adolescence is associated with an increased risk of metabolic syndrome, cardiovascular disease, and depression[1]. A 2023 study at the University of California found that girls who experienced frequent stress between the ages of 13 and 17 had higher circulating cortisol levels 10 years later.

Genetic and epigenetic mechanisms: Genetic predisposition and stress-induced epigenetic changes play a key role in controlling the functioning of GGAT. Modern analysis methods such as CRISPR and RNA sequencing allow the identification of potential targets for therapy [10].

The implementation of stress prevention programs in schools shows positive results. For example, mindfulness and cognitive-behavioral therapy programs used in the USA reduce anxiety levels in adolescents by 30-40% [8].

Considering stressors during adolescence allows for a more accurate diagnosis of neuroendocrine disorders and the development of personalized treatment methods.

Based on this, it can be said that the awareness of teachers and parents about the impact of stress on the physiological and psychological state of adolescents helps to create a comfortable educational environment. Developing strategies to reduce social stress in adolescents will promote public health and prevent the development of chronic diseases.

Neuro - endocrine effects of psycho - emotional stress in adolescents disorders in formation plays an important role . Diagnostics and from the complex methods of correcting , including psychological and pharmacological of approaches use this like of circumstances prevention get and in treatment main tool is considered Further studies aimed at studying the genetic and epigenetic mechanisms of stress, as well as the development of educational and social programs, are of great interest to science and society [1].

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