

Evaluation of the Physical and Mental Development of Children with Diffusive Goiter in the State of Euthyroidism

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Abstract

Introduction: To date, in Central Asia, a small amount of research evaluating the influence of diffuse goiter of various degrees in the state of euthyroidism on mental and physical condition of children.

Aim: Evaluate the mental and physical data of children with diffuse goiter in the state of euthyroidism.

Materials and Methods: We examined 23 children from 7 to 16 years old (15 girls) with DG of varying degrees in a state of euthyroidism.

Results: In 14 (60,9%) patients, SDS of height and body weight were noted at the level of medium values; in 9 (39,1%) patients SDS of height and weight were below average quantities. 19 (82,6%) patients had an average level of IQ; in 4 (17,4%) patients the IQ level was lower than the normal.

Conclusion: Despite the euthyroid state, children and adolescents with diffuse goiter note some decline in physical and mental development, and the greater the degree of increasing thyroid gland, this more expressed.

Keywords: Diffuse Goiter; Euthyroidism; Physical and Mental Development; Hypothyroidism

Introduction

To date, in Central Asia [1,2], a small amount of research evaluating the influence of diffuse goiter of various degrees in the state of euthyroidism on mental and physical condition of children. This causes the need to study this problem for timely prevention of hypothyroidism [3-5]. According to the latest studies conducted in the Republic of Uzbekistan in 2016, among 39605 examined high-school students, diffuse goiter (DG) first degree was found in 20.5% of children, a second-degree in 7.9%; the prevalence of endemic goiter was 28.6%.

Aim of the Study

Evaluate the mental and physical data of children with diffuse goiter in the state of euthyroidism.

Materials and Methods

We examined 23 children from 7 to 16 years old (15 girls) with DG of varying degrees in a state of euthyroidism. The degree of enlargement of the thyroid gland was determined by the WHO classification (2001) by manual exam. Height and body weight were compared with WHO centile tables. To determine the degree of growth deviation from average values, the standard deviation index (SDS) was calculated individually for each patient. Plasma levels of thyroid stimulating hormone (TSH) and free thyroxine (T4) were also determined. To assess the IQ level, the Raven progressive matrix method was used.

Results

In 14 (60,9%) patients, SDS of height and body weight were noted at the level of medium values; in 9 (39,1%) patients SDS of height and weight were below average quantities. 19 (82,6%) patients had an average level of IQ; in 4 (17,4%) patients the IQ level was lower than the normal. At the same time, it was found that the greater the degree of increasing the thyroid gland, the lower the physical and mental indicators.

Conclusion

Despite the euthyroid state, children and adolescents with diffuse goiter note some decline in physical and mental development, and the greater the degree of increasing thyroid gland, this more expressed.

Conflict of Interest

There is no conflict of interest.

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