

## Dependence of Androgen Status in Men with Primary Hypothyroidism on Duration and Condition of Compensation

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**Abstract :** Introduction: The role of androgen deficiency in men as a factor in the pathogenesis of many somatic diseases is unmistakable. The interaction of thyroid and sex hormones with hypothyroidism in men is still the subject of discussions. The purpose of the study is to assess the androgen status of men with primary hypothyroidism, depending on its duration and the state of compensation. Materials and methods: 45 men with primary hypothyroidism aged 35 to 60 years, as well as 25 healthy men, who formed a control group, were under supervision. A selection of men for examination was conducted in the process of outpatient and in-patient treatment at the endocrinology department of the University Hospital in Ternopil. The functional state of the pituitary-gonadal system was evaluated in order to characterize the androgen status of patients. The concentration of follicle stimulating hormone, luteinizing hormone, prolactin, thyroid-stimulating hormone was determined in blood with the help of enzyme-linked method. Also, the content of hormones: total testosterone, linking sex hormones globulin were determined. Results: Reduced total testosterone (TT) content was found in 42.2% of patients with hypothyroidism. Herewith in 17.8% of patients, blood TT levels were lower than 8.0 nmol / L, and in 11 (24.4%) men, the rate was in the range of 8.0 to 12.0 nmol / L. Based on the results of the determination of the content of free testosterone (FT), the frequency of laboratory hypogonadism in men with hypothyroidism was higher than the results of the determination of TT. The degree of compensation of hypothyroidism probably did not affect the average levels of gonadotropic and sex hormones. Conclusions: Reduced total testosterone content was found in 42.2% of patients with primary hypothyroidism. Herewith, in 17.8% of patients blood TT levels were lower than 8.0 nmol / L, which is a sign of absolute deficiency of testosterone, and in 24.4% of men the rate ranged from 8.0 to 12.0 nmol / l , indicating partial androgen deficiency. Linking sex hormones globulin levels were believed to be lower in 46.7% of patients with hypothyroidism compared to control group. The average levels of E2 in the examined patients did not significantly differ from the mean of control group. FSH, LH, and prolactin levels in men with hypothyroidism were within the normal age limits and probably did not differ from those of control group. The degree of compensation of hypothyroidism probably did not affect the average levels of gonadotropic and sex hormones. The mean LH content in the blood was significantly increased in men with a duration of hypothyroidism up to 5 years and did not differ from that of the control group and in men with a duration of hypothyroidism over 5 years. In men with hypothyroidism, a probable reduction in T / LH coefficient is found. The obtained data may indicate a combined lesion of the central and peripheral parts of the pituitary-gonadal system in men with hypothyroidism.

**Keywords :** androgenic status, hypothyroidism, testosterone, linking sex hormones globulin

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