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Studying of Thyroid Dysfunction on Patients with Metabolic Syndrome

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Abstract: ***A retrospective study was conducted several studies aimed at knowing the relationship between the level of thyroid hormone and the metabolic syndrome and according to the results of the study, it is recommended to determine the level of tsh hormone in the pituitary gland in all patients as well as in all patients with risks of developing cardiovascular diseases: in patients who they suffer from obesity, dyslipidemia, arterial hypertension, hyperhomocysteinemia, and tobacco smoking., hereditary factor, diabetes mellitus type 2. No less important is the issue of treatment tactics in patients and in accordance with current recommendations, the appointment of thyroid hormone preparations is indicated for patients with an increase in the level of tsh more than 10 μm / l. The assignment of thyroxine to the boundary level of tsh is still a matter of debate. Most authors consider surgical myocardial revascularization, continuous statin therapy, and correction of subclinical hypothyroidism with small doses of thyroxine to normal tsh values as ideal. The most appropriate is the early detection of subclinical hypothyroidism in patients and correction of disorders identified with thyroid hormone preparations. The study showed that subclinical hypothyroidism is an additional independent risk factor.***

Keywords: Patients, Hyperhomocysteinemia, Thyroid and Dysfunction.

1. INTRODUCTION

The prevalence of thyroid dysfunction in the general population, especially in the older age group, is quite high (from 10–12 to 20%) [1,2]. Influencing the key stages of metabolism, thyroid hormones have complex multidirectional effects on the cardiovascular system [3,4,5,6]. Both excess and deficiency of thyroid hormones have a certain negative effect on myocardial cells, vascular wall, vascular endothelium, and blood lipid spectrum parameters [7,8,9]. Many effects of thyroid hormones on the heart and blood vessels have been well studied, and pathophysiological changes in thyroid dysfunction have been described in detail [10,11,12]. Obvious dysfunctions of the thyroid gland (both hypothyroidism and

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thyrotoxicosis) have a pathological effect on the heart and blood vessels, lipid metabolism, and the need to treat these conditions is beyond doubt [13,14]. At the same time, the clinical significance of latent thyroid dysfunctions is still a matter of debate [15,16]. At the same time, the question of the advisability of identifying and eliminating subclinical hypothyroidism in older people, including patients with coronary heart disease, remains particularly relevant and unresolved.

Metabolic syndrome (MS) is defined as a group of metabolic disorders represented by a number of risk factors for the development of cardiovascular disease and type 2 diabetes (DM2) [17]. Components associated with MS are abdominal fat deposition, arterial hypertension, carbohydrate metabolism disorders and dyslipidemia [18].Obesity is the main component of MS and is considered the main pathogenic link of the syndrome complex [19]. It is known that the development of obesity is accompanied by the accumulation of adipose tissue not only in places of its physiological localization, but also in other organs [20]. Among the individuals showing signs of overweight and obesity, there are several subgroups with different metabolic phenotypes: three metabolically healthy phenotypes (with normal body weight, with overweight, with obesity) and three metabolically unhealthy phenotypes (with With normal body weight, with overweight). obesity). Phillips CM describes in detail the criteria currently used to define a metabolically healthy phenotype among children, adolescents, and adults [21]. Although metabolic health can be defined as the absence of insulin resistance, the current definition of metabolic health is based on the absence of MS (or some of its cardiac indicators—dyslipidemia, impaired insulin resistance, hypertension) in people with MS. overweight. An additional criterion is a favorable inflammatory state, determined by the level of C-reactive protein [22].

A number of large studies examining the prevalence of thyroid dysfunction in the population (Wickham Study, Rotterdam Study) found an association between subclinical hypothyroidism and cardiovascular risk factors [23]. At the same time, according to the results of other studies, such associations were not revealed. The contribution of subclinical thyroid dysfunction to the development and maintenance of atherogenesis is still widely debated.

According to existing recommendations, the determination of the level of thyroid-stimulating hormone (TSH) is indicated for people who have or had a history of thyroid disease, their first-line relatives, women over 60 years of age, patients with type 1 diabetes and patients with atrial fibrillation. Recent studies have shown that a decrease in the functional activity of the thyroid gland is significantly more common in obese patients, in patients with impaired lipid metabolism, type 2 diabetes mellitus, and coronary heart disease [24]. Apparently, these categories of patients also need to determine the level of TSH for timely detection and treatment of thyroid dysfunction. In this regard, it is relevant to study the relationship between the level of functional activity of the thyroid gland and the severity of atherosclerotic changes in patients with IHD. Obtaining these data is necessary to resolve the issue of the advisability of expanding the indications for determining the level of TSH

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2. MATERIAL AND METHOD

This study was analyzed according to previous research studies, and patients were recruited for the study, and the study included patients diagnosed with hypothyroidism and to determine the prevalence of subclinical hypothyroidism in patients who were conducting a study examining TSH levels according to the principles proposed by the World Health Organization in 1968 All patients were assessed in terms of age at the time of examination, age and body weight at the time of detection of cardiovascular disease, and family history of diabetes and cardiovascular disease. According to blood records and the results of previous studies, the presence of hypertension, coronary heart disease, and chronic complications of diabetes mellitus was evaluated. Smoking history and the nature of treatment were taken into account.

3. RESULTS

In recent decades, the role of thyroid dysfunction in the pathogenesis of metabolic syndrome has been actively discussed and a decrease in the functional activity of the thyroid gland is often detected in the elderly and especially in patients with obesity, dyslipidemia, type 2 diabetes, and according to some authors Subclinical hypothyroidism. It is an additional risk factor for cardiovascular disease. The first part of the work was a cohort study on hypothyroidism in patients with hypothyroidism. It should be noted that there have been no studies on hypothyroidism in patients. In this study, patients and residents in Iraqi hospitals were examined for underlying disorders (subclinical) in their Thyroid. As mentioned above, the percentage of individuals with thyroid dysfunction in the population depends to some extent on the area's iodine supply level and on the upper limit of the TSH norm. Thus, a study in Colorado showed that 9% of the adult population had subclinical hypothyroidism. The Wickham study found subclinical hypothyroidism in 8% of women in the general group and in 10% of women over 55 years of age [25]. The Rotterdam study found 10.8% of subclinical hypothyroidism among women over the age of 60, with a positive correlation with multiple complications.

4. CONCLUSION

Survey results showed that thyroid dysfunction is more common in patients with coronary artery disease than in the general population. Especially often, a decrease in the functional activity of the thyroid gland is detected in females, women and men of the older age group, in patients with obesity and overweight, in patients with disorders of lipid metabolism and hyperhomocysteinemia. Decreased functional activity of the thyroid gland is associated with type 2 diabetes mellitus and the formation of arterial hypertension The research paper shows that subclinical hypothyroidism potentiates disorders of lipid metabolism, homocysteine metabolism, and contributes to the formation of overweight and obesity.

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