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T_3-THYROTOXICOSIS

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Twenty-five patients with T_3-thyrotoxicosis were studied. The diagnosis was based on clinical observation, biochemical values, total T_3 and T_4, and ultrasound tests of the thyroid gland. A conservative treatment was carried out and where necessary a surgical one, too. The authors observed this form of the thyrotoxicosis in male as well as in female patients, the average age of the patients was young, and the duration of the disease from its beginning until diagnosing was longer than that of the common form.A bigger size of the thyroid was observed which was denser and often pseudonodular. In the clinical picture the cardio-vascular and neurological symptoms prevailed. Only in two cases light forms of thyrotoxic ophthalmopatia developed. The disease showed tendency towards relapses. Four patients were operated on because of difficulties in achieving a compensation of the euthyroid state and frequent relapses.

Key-words: T_3-thyrotoxicosis, atypical forms, cardiovascular symptoms, treatment

Among all endocrine diseases the thyroid pathology takes the second place in incidence rate after diabetes mellitus. Thyrotoxicosis is well known disease which is not a serious diagnostic and therapeutic problem. However, our experience shows that even patients with typical development of the disease are treated for a long time for another diagnosis. The reason is the late identification of atypical forms of thyrotoxicosis. Such an atypical form is the T_3-thyrotoxicosis.

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In a lot of researches, including patients with goiter in endemic regions, a low levels of T_4 and levels of T_3 near to the upper limit were found (1,2,4). The question about the decisive role of T_3 and T_4 for thyrotoxicosis is still eagerly discussed (6).

In 1972, Hollender and al. (5) described for the first time an atypical form of thyrotoxicosis with elevated serum triiodthyronin (T_3) but normal serum thyroxine (T_4) concentrations.

MATERIAL AND METHODS

In order to describe more precisely the clinical features and hormonal state, 25 patients (24 with Grave's disease and one patient with

thyroid adenoma), treated in the clinic of endocrinology, Medical University, Varna for the period 1988/1989, were studied (6,68 percent of all cases of thyrotoxicosis). A parallel group of 25 patients with typical form of Grave's disease was studied.

We used the following laboratory methods: serum thyroid hormone measurements, ultrasound and scanning of thyroid gland, biochemical measurements, antithyroglobulin and antimicrosomal autoantibodies, and TRH-test.

RESULTS AND DISCUSSION

The distribution of patients according to sex and age showed that T_3-thyrotoxicosis was more common among women, but not so markedly as for the typical forms of thyrotoxicosis (in 36% of the cases for men against 16% in typical forms). The female/male ratio in T_3-thyrotoxicosis was 1,8:1 and in typical forms - 5,25:1. The patients with a T_3 form were younger. The mean age was respectively 39,1 and 51,87 years. If we took into consideration the late clinical identification of the T_3 form the mean age of T_3 thyrotoxicosis was 25,63 months, while for the typical forms it was 11,38 months. Out of a total of 25 patients with T_3 thyrotoxicosis 8 were treated with β-adrenergic antagonist for unknown etiology, four patients for neuroses. Arterial hypertension was suspected in two patients.

The average duration of the T_3 form was of 64,2 months in contrast to the typical forms (17,62 months). Perhaps it was a result of the late identification and frequent relapses of the T_3 form.

Four patients had one relapse, five had two relapses, two had three relapses. Forteen out of 25 patients with T_3 thyrotoxicosis had relapses. Four of the patients with a typical form had one and one had two relapses ($p<0,001$).

A characteristic feature of the T_3 form was the existence of another endocrine disease such as mastopathy in two patients, myoma in four, and gynaecomastia in one man. Among the clinical features of the disease we found differences which gave us reason to suspect the diagnosis before the hormonal measurements. Tachycardia was the leading symptom in T_3 thyrotoxicosis. It was the only clinical feature in five of the patients.

Neurovegitative symptoms and weight loss were the leading manifestation of the typical form.

In the T_3 form, the tachycardia (100-120/min), paroxysmal or constant, appeared to be the first reason for searching for a medical help. There was no case of arrhythmia. The cases with arrhythmia in the typical form were four out of twenty-five.

The explanation could be in the young age of the T_3 thyrotoxicosis patients. The blood pressure showed the typical systolic hypertension in four patients with T_3 thyrotoxicosis while in the typical form it was proved in ten cases. Nevertheless, neuropsychological symptoms were so typical for thyrotoxicosis, the emotional lability and anxiety often directed the clinical thinking to neurosis. The patients with thyrotoxicosis were explosive, agitated, tearful, they suffered from loss of memory, sleeplessness, they woke-up easily.

There were ten patients with moderate weight loss, three of them had increased appetite. The skin of the patients with T_3 thyrotoxicosis was sweaty, moist, but not always hot. It was cold and moist in three women. The ocular symptoms were rare in T_3 thyrotoxicosis. One patient had exophthalmus, two - infiltrative ophthalmopathy, they were easily influenced by the therapy.

The thyroid enlargement had some particular characteristic features. In 8 patients the goiter was found several years before the first clinical signs of hyperthyroidism. Usually, the goiter was large, lobed; nodules could be suspected in 20 out of 25 patients and an ultrasound was performed. It revealed the diffuse character of the goiter with one exception in a patient with thyroid adenoma. In 16 patients the goiter was homogenous and hypoechogenous. The radioiodine scanning performed in 19 patients confirmed the diffuse nature of the goiter. An increased uptake of radioactive nuclide was demonstrated. The laboratory findings showed high T_3 and normal T_4 levels. In case of relapse the proportion of hormones was the same. Some authors suppose that this is typical of the relapses (3). We observed a normal T_3/T_4 ratio during the relapses in the typical form. We measured the level of cholesterol in all patients. It was lower than 4 mmol/l in 18 out of 25 patients and 4-4,5 mmol/l in the others. One patient had decreased glucose tolerance, while in the typical form five patients were with diabetes mellitus. TAT and MAT measured in 17 patients were negative. In five patients with T_3 thyrotoxicosis and a clinical course typical of Grave's disease TRH test was performed. It showed a lack of reactivity.

Along with a patient with thyroid adenoma, where surgery was indicated, in five patients with diffuse goiter an operative intervention was performed because we failed to achieve a constant euthyroid state. Our experience showed that in T_3 thyrotoxicosis with diffuse goiter the surgery was more proper after reaching the euthyroid state than long lasting conservative treatment in order to prevent relapses. There where not

hypothyroid symptoms and relapses after surgery at all.

CONCLUSION

Our investigations revealed that the T_3 form of thyrotoxicosis had some characteristic features in course, diagnosis and treatment.

The disease affected the young age and had a tendency towards relapses. The cardiac symptoms were leading, especially tachycardia, arrhythmias were rare.

In T_3 thyrotoxicosis with large diffuse goiter the surgery was preferred after reaching an euthyroid state.

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Т3-тиреотоксикоза

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Резюме: Проучени са 25 болни с T_3-форма на тиреотоксикоза. Диагнозата е установена въз основа на клинично наблюдение, биохимични показатели, тотални T_3 и T_4 и ултразвуково изследване на щитовидната жлеза. Проведено е консервативно, а при показания - и оперативно лечение. Установено е, че при тази форма на тиреотоксикоза преобладаването на женския пол е по-слабо изразено, средната възраст на болните е по-млада, а продължителността на заболяването от началото до откриването му е по-голяма в сравнение с обичайната форма. Отбелязва се по-голям размер на струмата, която е по-плътна и в много случаи налобена. В клиничната картина на преден план са сърдечно-съдовите и невро-вегетативните симптоми. Само у двама болни има леки прояви на инфилтративна офталмопатия. Заболяването показва склонност към рецидивиране. Четирима от болните са оперирани поради трудно компенсиране на хипертиреоидното състояние.