PECULIARITIES OF EARLY DIAGNOSIS OF PATIENTS WITH HYPERTENSIVE DYSCIRCULATORY ENCEPHALOPATHY AND CONCOMITANT HYPOTHYROIDISM IN POLYCLINIC CONDITIONS

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Summary

Introduction. Early diagnosis, timely prevention and treatment of comorbid and polymorbid conditions are extremely relevant in the practice of doctors of outpatient polyclinic institutions. Dyscirculatory encephalopathy is one of the most pressing problems of modern neurology due to its high prevalence. Currently, along with the growth of cerebrovascular diseases, there is an increase in endocrine pathology, especially hypothyroidism.

The aim: Therefore, the goal of our study was to improve the diagnosis of patients with dyscirculatory encephalopathy and concomitant hypothyroidism in conditions of polyclinics.

Materials and methods. A clinical-neurological, neuropsychological, instrumental, and laboratory examination of 97 patients was conducted, including 60 patients with HDE and accompanying hypothyroidism and 37 with hypertensive dyscirculatory encephalopathy (HDE) without hypothyroidism.

Results. According to the results of the study, it was proven that cerebral disorders in patients with HDE have a more pronounced progression in the presence of concomitant hypothyroidism. Patients with concomitant hypothyroidism complained more and more often about tearfulness (p=0.03), vertigo (p=0.01), dizziness (p=0.04). In patients with HDE and accompanying hypothyroidism, the severity of neurological deficits, such as unsteadiness in Romberg’s pose, ataxia when walking, missed finger-nose test, mixed type of dermographism, significantly (p<0.05) prevailed over the indicators of patients with HDE without accompanying pathologies of the thyroid gland. Thus, patients with comorbid pathology (HDE and accompanying hypothyroidism) need more meticulous dispensary supervision, in outpatient settings and close interaction of a neurologist, endocrinologist, therapist and family doctor.

Conclusions. In patients with hypertensive dyscirculatory encephalopathy and concomitant hypothyroidism, there are cerebrasthenic, vestibulo-ataxic, and mnestic syndromes observed significantly more often (p<0.05).

Key words: hypertensive dyscirculatory encephalopathy, hypothyroidism, cerebrasthenic, vestibulo-ataxic, mnestic syndromes.

INTRODUCTION

Early diagnosis, timely prevention and treatment of comorbid and polymorbid conditions are extremely relevant in modern medicine, when the presence of one or more diseases changes the course of the main pathology to one degree or another, which complicates the verification of the disease, especially in the early stages, and harms timely and adequate medical assistance. This problem is especially important in the practice of doctors of outpatient polyclinic institutions (family doctor, neurologist, etc.), because the patient’s further route often depends on their knowledge and clinical experience.
It is known, that dyscirculatory encephalopathy is one of the most urgent problems of modern neurology due to its high prevalence. In the structure of cerebrovascular diseases (CVD) in Ukraine, 96% belong to chronic disorders of cerebral blood circulation (dyscirculatory encephalopathy (DE)), which develops against the background of arterial hypertension and atherosclerosis or their combination [1]. The pathogenesis of damage to cerebral structures in chronic vascular diseases of the brain and the formation of DE consists in the gradual growth of a complex of pathobiocchemical disorders caused by a decrease in the level of oxygen in arterial blood (hypoxemia) on the one hand, and the action of hypoxic oxygen mediators (oxidant stress) on the other [2, 3, 4].

Currently, along with the growth of CVD, there is an increase in endocrine pathology, among which hypothyroidism occupies a special place.

Neurological disorders in hypothyroidism are a severe and widespread condition of the nervous system. Cerebral pathology, namely dyscirculatory encephalopathy, which develops as a result of metabolic and vascular disorders in a patient with hypothyroidism, is a manifestation of endothelial dysfunction, namely, disruption of endothelial function compensation [5, 6].

The endothelium begins to secrete aggregants, coagulants, vasoconstrictors and becomes the initiator (or modulator) of many pathological processes in the body: atherosclerosis, hypertension, strokes, heart attacks [7, 8].

In our country and abroad, many studies have been conducted to study the criteria for diagnosis, treatment and prevention of DE [9, 10]. On the other hand, the peculiarities of the course, diagnosis and treatment of DE in the case of other diseases joining it, remain understudied, and the definition of early criteria for the diagnosis of comorbid conditions is of extremely great practical importance.

The aim of our study was to improve the diagnosis of patients with dyscirculatory encephalopathy and concomitant hypothyroidism in outpatient settings.

MATERIALS AND METHODS

There was a clinical and neurological examination of 97 patients with hypertensive dyscirculatory encephalopathy, of which 60 patients had concomitant pathology in the form of hypothyroidism. Among the examined patients were 88 (90.7%) women, and 9 (9.3%) men.

All patients with HDE were divided into two groups, which were statistically comparable in terms of the main diseases (hypertensive dyscirculatory encephalopathy), sex and age. The first group (main) included patients (60 people), who had concomitant hypothyroidism in addition to HDE. The second group (control) consisted of 37 people without hypothyroidism. Among the examined patients of the main group there were 57 (95%) women, and 3 (5%) men. Among patients in the control group, there were 31 (83.8%) women, and 6 (16.2%) men. The age of the patients ranged from 40 to 66 years old (average age 58.2 ± 0.91 years old). Patients of the main group had comitant hypothyroidism due to: autoimmune thyroiditis (39 people), after surgical interventions on the thyroid gland (9 people), and 12 patients had spontaneous hypothyroidism.

The obtained data were entered into an electronic database and processed by the program «Statistica 6.0» with using parametric and nonparametric methods of variation statistics, so the difference was significant at p <0.05.

RESEARCH RESULTS

According to the results of the study, it was found that patients with concomitant hypothyroidism complained more and more often about tearfulness (p=0.03), vertigo (p=0.01), dizziness (p=0.04). There was a significant (p 0.05) predominance of complaints (significant) of headache, reduced work capacity, weakness, fatigue, dry skin, sleep disturbances, irritability.

It was found that in patients with HDE and accompanying hypothyroidism, the severity of neurological deficits (that are unsteadiness in Romberg’s pose, ataxia when walking, missed finger-nose test, mixed type of dermographism), significantly (p<0.05) prevailed over the indicators of patients with HDE without concomitant pathology of the thyroid gland.

According to the results of determining subjective and objective neurological symptoms in patients with HDE and accompanying hypothyroidism, a significant predominance (p 0.05) of such syndromes as vestibulo-ataxic, cerebrasthenic, and mnestic syndromes was revealed; it means that anxiety-depressive disorders were registered 3 times more often than in patients without concomitant pathology of the thyroid gland. The characteristics of the main syndromes are shown in Fig 1.

Thus, patients with comorbid pathology (HDE and accompanying hypothyroidism) need more meticulous dispensary supervision, in outpatient polyclinic conditions, with more frequent control of the state of clinical and neurological manifestations, as well as additional control of hormonal status in critical periods of the patient’s life (mental and physical overload, climatic and weather conditions, etc.). This approach requires close interaction between a neurologist, an endocrinologist, a therapist and a family doctor.

The route of a patient with HDE in an outpatient setting is proposed (Fig. 2)
Figure 1. Characteristics of the main syndromes
Notes:
* — significant difference (p<0.05) between the indicators of both groups.

Complaints of the patient:
general weakness, reduced work capacity, fatigue, irritability, sleep disturbances, memory impairment, fear of death, tearfulness, unsteadiness when walking, dizziness.

Consultation of a therapist
When detected in a patient:
- increased blood pressure;
- bradycardia;
- overweight;
- anemia;
- increased total cholesterol, low-density lipoproteins.

Consultation of a neurologist
Detection of the progression of cerebral disorders in the patient in the presence of corrected arterial hypertension:
- cognitive disorders;
- anxiety-depressive disorders;
- cerebrastinic syndrome;
- the appearance or deepening of a neurological defect (wobbliness in Romberg's pose, ataxia when walking, missing a hit during a thumb test);
- changes on ultrasound (reduction of cerebral reactivity in the common carotid and vertebral arteries);
- changes on the EEG (theta waves, decrease in the frequency of the a-rhythm in the occipital region).

Blood test (level up TTG, level down T4, T3)

Consultation of an endocrinologist
dispensary observation

Figure 2. The route of the patient in the conditions of the polyclinic
CONCLUSIONS

1. Cerebral disorders in patients with hypertensive dyscirculatory encephalopathy have a more pronounced progression in the presence of concomitant hypothyroidism.

2. In patients with hypertensive dyscirculatory encephalopathy and concomitant hypothyroidism, cerebrasthenic, vestibulo-atactic, and mnestic syndromes are observed significantly more often (p<0.05).

DISCUSSION

In modern medicine, a substantial base of information has been accumulated on the study of the features of HDE, and to a lesser extent, dysmetabolic encephalopathy in hypothyroidism. As you know, in conditions of insufficient thyroid hormones in the body, conditions are created for strengthening the processes of free-radical oxidation. Accumulation of primary and secondary products of free-radical oxidation causes a membrane-toxic effect and promotes damage to neurons. It is also known that the brain is very sensitive to thyroid hormone deficiency. All this contributes to the development of chronic metabolic and vascular disorders in the brain during hypothyroidism. [11,12]. On the other hand, there is a lack of scientific research on the changes in the course of HDE in conditions of thyroid hormone deficiency, in particular, early diagnosis to prevent further progression of the disease.

Detection of the progression of hypertensive dyscirculatory encephalopathy in a patient with corrected blood pressure, inconsistency with the progression of the main disease — arterial hypertension — the patient’s complaints and data of objective neurological symptoms (mnestic, cerebrasthenic, anxiety-depressive, vestibulo-atactic manifestations), will allow to suspect concomitant thyroid pathology glands, namely hypothyroidism, and refer the patient for consultation to an endocrinologist to optimize treatment, rehabilitation and preventive measures.

PROSPECTS FOR FURTHER RESEARCH

The need for further in-depth study of comorbid pathology (hypertensive dyscirculatory encephalopathy and hypothyroidism) in outpatient and outpatient settings will contribute to the improvement of preventive and treatment-diagnostic tactics for patients with the specified pathology.

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COMPLIANCE WITH ETHICAL REQUIREMENTS

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ОСОБЛИВОСТІ РАННЬОЇ ДІАГНОСТИКИ ПАЦІЄНТІВ З ДИСЦИРКУЛЯТОРНОЮ ЕНЦЕФАЛОПАТІЄЮ ТА СУПУТНИМ ГІПОТИРЕОЗОМ В УМОВАХ ПОЛІКЛІНІКИ.

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Вступ. Надзвичайно актуальними у практиці лікарів амбулаторно-поліклінічних закладів є рання діагностика, своєчасна профілактика та лікування коморбідних та поліморбідних станів. Дисциркуляторна енцефалопатія складає одну з найактуальніших проблем сучасної неврології через високу поширеність. В теперішній час, поряд зі зростанням цереброваскулярних захворювань відмічається збільшення ендокринної патології, особливо гіпотиреозу.

Тому метою нашого дослідження було удосконалити діагностику у пацієнтів з дисциркуляторною енцефалопатією та супутнім гіпотиреозом в умовах поліклініки.

Матеріали та методи. Було проведено клініко-неврологічне, нейропсихологічне, інструментальне, лабораторне обстеження 97 пацієнтів, з яких 60 осіб з ГДЕ та супутнім гіпотиреозом та 37 з ГДЕ без гіпотиреозу.

Результати. За результатами дослідження доведено, що церебральні розлади у хворих з гіпертонічною дисциркуляторною енцефалопатією мають більш виразне прогресування за наявності супутнього гіпотиреозу. Пацієнти, які мають супутній гіпотиреоз, більше та частіше скаржилися на плаксивість (р=0,03), запаморочення (р=0,01), головокруження (р=0,04). У пацієнтів з ГДЕ та супутнім гіпотиреозом вираженість неврологічного дефіциту, а саме: хиткість в позі Ромберга, атаксія при ході, мимопопадання при пальце-носовій пробі, змішаний тип дермографізму, достовірно (р<0,05) переважав від показників хворих з ГДЕ без супутньої патології щитовидної залози. Таким чином, хворі з коморбідною патологією (ГДЕ та супутній гіпотиреоз) потребують більш прискіпливого диспансерного нагляду, в амбулаторно-поліклінічних умовах та щільної взаємодії невролога, ендокринолога, терапевта та сімейного лікаря.

Висновки. У пацієнтів з гіпертонічною дисциркуляторною енцефалопатією та супутнім гіпотиреозом достовірно частіше (р<0,05) спостерігається церебрастенічний, вестибуло-атактичний, мнестичний синдроми.

Ключові слова: гіпертонічна дисциркуляторна енцефалопатія, гіпотиреоз, церебрастенічний, вестибуло-атактичний, мнестичний синдроми.