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COMPLEX TREATMENT OF PATIENTS WITH OPTIC NEURITIS ON THE BACKGROUND OF MULTIPLE SCLEROSIS

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✓ ***Resume***

The aim of study was to analysis of the effectiveness of complex treatment of patients with optic neuritis (ON) due to multiple sclerosis (MS). Depending on the type of treatment, patients with ON due to MS were divided into 2 groups: in the first (main) group (26 patients, 42 eyes), complex treatment was used with the addition of drugs modifying the course of MS. In the second (control) group (18 patients, 27 eyes), only traditional treatment was used. Traditional treatments have included anti-inflammatory, decongestant, and desensitizing therapies. The inclusion of drugs modifying the course of MS in the complex treatment of ON against the background of MS made it possible to increase visual acuity by 1.74 times, expand the field of view by 1.42, and reduce the latency of VEP by 6.7%.

Keywords: optic neuritis, multiple sclerosis, treatment, Glatiramer acetate.

КОМПЛЕКСНОЕ ЛЕЧЕНИЕ БОЛЬНЫХ С ОПТИЧЕСКИМ НЕВРИТОМ НА ФОНЕ РАССЕЯННОГО СКЛЕРОЗА

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✓ ***Резюме***

Целью исследования явился анализ эффективности комплексного лечения больных с невритом зрительного нерва (НЗН) вследствие рассеянного склероза (РС). В зависимости от вида лечения больные с НЗН на фоне РС были распределены на 2 группы: в первой (основной) группе (26 больных, 42 глаза) применялось комплексное лечение с добавлением препарата изменяющего течение РС. Во второй (контрольной) группе (18 больных, 27 глаз) применялось только традиционное лечение. Традиционное лечение включало противовоспалительную, противоотечную и десенсибилизирующую терапию.

Включение препарата изменяющего течение РС в комплексное лечение невритов зрительного нерва на фоне РС позволило повысить остроту зрения в 1,74 раза, расширить поле зрения в 1,42, снизить латентность зрительных вызванных потенциалов на 6,7%.

Ключевые слова: неврит зрительного нерва, рассеянный склероз, лечение, глатирамер ацетат.

ТАРҚОҚ СКЛЕРОЗ САБАБЛИ КЎРУВ НЕРВИ НЕВРИТИ БИЛАН КАСАЛЛАНГАН БЕМОРЛАРНИ КОМПЛЕКС ДАВОЛАШ

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✓ ***Резюме***

Тадқиқотнинг мақсади тарқоқ склероз фонида ривожланган кўрув нерви неврити билан оғриган беморларни комплекс даволаш самарадорлигини тахлил қилиш. Даволаш турига қараб кўрув нерви неврити билан оғриган беморларни 2 гурухга бўлинган: биринчи (асосий) гурухда (26 та бемор, 42 та кўз) тарқоқ склероз кечишини ўзгартирувчи препарат қўшилган холда комплекс даволаш қўлланилган. Иккинчи (назорат) гурухда (18 та бемор, 27 та кўз) фақат анъанавий даволаш усули қўлланилган. Анъанавий даволаш усули яллиғланишга қарши, шишга қарши ва десенсибилизацияловчи дори воситаларини ўз ичига олади. Тарқоқ склероз фонида ривожланган кўрув нерви неврити билан оғриган беморларни комплекс даволашда касаллик кечишини ўзгартирувчи препарат қўшилиши кўрув ўткирлигини 1,74 баробар оширишга, кўрув майдонини 1,42 мартага кенгайтиришга ва чақирилган кўрув потентциалларининг латентлик кўрсаткичини 6,7% га пасайишига имкон берди.

Калит сўзлар: кўрув нерви неврити, тарқоқ склероз, даволаш, глатирамер ацетат.

Introduction

In clinical neuroophthalmology, complications of multiple sclerosis (MS) are of particular importance among demyelinating diseases. Thus, according to the literature, optic neuritis (ON) is the main symptom of MS. Chronic progressive course, affection of mainly young and middle-aged people, early disability determine the medical and social significance of the problem [6, 8].

Since the etiology of MS is not yet well understood, the management of ON in MS is one of the most difficult issues. There is currently no etiological treatment. There is pathogenetic and symptomatic therapy, which is aimed at stopping the acute process, preventing relapses and slowing the progression of the disease [1-4].

According to the authors, treatment of ON due to MS is aimed at preventing the destruction of the optic nerve and brain tissue by aggressive cells of the immune system, restoring the myelin sheath, retinal axons, and improving the trophism of brain tissue [5, 7].

According to the literature, there are also drugs that can influence the prognosis by slowing the progression of

the disease or decreasing the frequency of relapses. They are called drugs, changing course of MS [9].

According to the literature, the effect of pathogenetic therapy is to change the course of MS in order to prevent relapses, normalize the condition, prevent the transition to a progressive course in the remitting variant of the disease, as well as reduce the frequency of relapses and slow the development of disability [10, 11]. In this connection, there is a need to study the effectiveness of complex treatment of patients with ON against the background of MS to prevent the development of optic nerve atrophy.

Purpose. Analysis of the effectiveness of complex treatment of patients with ON due to MS.

Materials and methods.

We observed patients with ON due to MS - 43 patients (69 eyes). Of these, 26 patients had a two-sided process, 17 - one-sided. The research methods were standard ophthalmic (visometry, tonometry, perimetry, ophthalmoscopy) and special methods (study of visual evoked potentials).

Depending on the type of treatment, patients with ON due to MS were divided into 2 groups: in the first (main) group (26 patients, 42 eyes), complex treatment was used with the addition of drugs modifying the course of MS. Glatiramer acetate 20 mg subcutaneously daily was used. In the second (control) group (18 patients, 27 eyes), only traditional treatment was used. Traditional treatments have included anti-inflammatory, decongestant, and desensitizing therapies.

Evaluation of the effectiveness of therapy was carried out on the basis of visual functions and data from the study of visual evoked potentials before treatment, immediately after completion, after 6 months and 1 year after the course of treatment.

Data processing was carried out on a personal computer using IBM SPSS Statistics 23.0 software packages. Statistical processing of the obtained results was carried out using standard methods of variation statistics using the Student's t test to assess the reliability of differences.

Results and discussion.

At the initial examination, patients with ON due to OM complained of decreased visual acuity (95.6%), pain behind the eyeball (82%), headache on the side of visual impairment, photophobia (30.4%), and decreased contrast of objects (80.4 %). The visual acuity in group 1 was on average 0.23 ± 0.03, in group 2 - 0.21 ± 0.05. The field of view for white color was concentrically narrowed in group 1 to 298.6 ± 22.8 °, in group 2 to 277.4 ± 37.68.

In 37.7% of cases, ophthalmoscopy revealed blanching of the temporal half of the optic disc, the boundaries along the vessels were slightly blurred, edema of the optic disc (16%), physiological excavation was absent. In the macular region, edema (5.8%), serous detachment of the pigment epithelium were sometimes determined.

During subsequent exacerbations of the optic nerve disc in the fundus, changes were determined in the form of decoloration of the entire optic disc.

When analyzing the dynamics of the visual field of patients with ON due to MS, it was found that in group 1 patients after complex treatment, the field of vision improved 1.42 times ($p < 0.001$), while in group 2 after traditional treatment only 1.27 times (Table 1).

Table 1

Evaluation of treatment results by the dynamics of the visual field in patients with ON against the background of MS

Groups	Visual field to white		
	Before treatment	1 year after treatment	P
1- group (n =42)	298.6±22.8	423.3±11.68	<0.001
2-group (n =27)	277.4±37.68	352.4±17.76	>0.05

Dynamics of visual acuity: in the 1st main group of patients, visual acuity increased 1.74 times, after 6 months - 2 times, after 1 year the indicator increased 1.47 times from the initial data. As a result of the traditional treatment in the 2nd control group, there was a significant increase in visual acuity to 0.28 ± 0.05, which is 33% higher than the initial level. It should be noted that after 6 months and 1 year after traditional treatment, negative dynamics was noted. At the same time, after 6 months, visual acuity decreased by 5%, after 1 year after treatment by 14% from the initial level (Table 2).

In the study of VEP before treatment, an increase in the P100 index was revealed in group 1 to 133.8 ± 2.16 ms and in group 2 to 135.4 ± 2.48 ms with a norm of 102.8 ± 1.03 (Table 3).

In patients of group 1, after complex treatment, there was a decrease in P100 to 124.8 ± 1.93 ms (by 6.7%). The P100 indicator obtained in the 2nd group decreased the same indicator obtained before the treatment by 4.4%.

The amplitude of the VEP of the N75-100 component in group 1 increased by an average of 13% in 6 months after treatment, while in group 2 this indicator worsened by 5%. An increase in amplitude indicates the restoration of the functions of some axons of the optic nerve. Improving the conduction of impulses along the nerve along the demyelinated fiber can be the result of: a decrease in local edema, correction of temperature and metabolic factors, elimination of neuroelectric blocking factors with the development of continuous impulse conduction.

Conclusions

In the complex treatment of ON against the background of MS, there is a significant tendency towards improvement in visual acuity and visual field as compared to the initial level. The inclusion of drugs modifying the course of MS in the complex treatment of ON against the background of MS made it possible to increase visual acuity by 1.74 times, expand the field of view by 1.42, and reduce the latency of VEP by 6.7%.

Table 2.

Evaluation of treatment results based on the dynamics of visual acuity in patients with ON due to MS

Groups	Average visual acuity			
	Before treatment	**10 days after treatment**	**6 months after treatment**	**1 year after treatment**
1- group (n =42)	0.23±0.03	0.4±0.04 p<0.005, p2<0.05	0.46±0.04 p<0.001, p2<0.001	0.34±0.03 p<0.01
2-group (n =27)	0.21±0.05	0.28±0.05	0.2±0.03	0.18±0.02

P – reliability of differences in indicators compared to before treatment, p_1 – reliability of differences in indicators in comparison after 6 months of treatment, p_2 – reliability of differences in indicators compared to 1 year after treatment.

Table 3.

Evaluation of treatment results based on the dynamics of VEP parameters in patients with ON due to MS

Groups	**Latency P 100**			**Amplitude P 100**		
	Before treatment	**6 months after treatment**	**P**	**Before treatment**	**6 months after treatment**	**P**
1-group (n =42)	133.8±2.16	124.8±1.93	<0.005	5.48±0.27	6.19±0.22	<0.05
2-group (n =27)	135.4±2.48	129.5±1.38	<0.05	5.17±0.35	4.91±0.25	>0.05

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