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Research Article

Risks of Multiple Sclerosis Research Center of Psychotherapy Saint Petersburg, Russia

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Abstract

In recent years, in everyday clinical practice, more and more often in patients with magnetic resonance imaging (MRI) examination with contrast enhancement of gadolinium of the brain and spinal cord, foci of demyelination that meet the criteria of dissemination in space are detected. In these patients, when studying the anamnesis, it is not possible to establish the presence of symptoms, neurological disorders characteristic of multiple sclerosis (MS). Thus, a radiologically isolated syndrome is recorded (FIG. The issue of prognostic markers of possible clinical manifestation of MS (if we consider RICE to be an early stage of MS) and the creation of an algorithm for their determination remains relevant. This strategy is very important to clarify the risks of developing a severe, disabling, currently incurable disease, as well as to resolve the issue of the timing of the appointment of pathogenetic treatment. Goal. To assess the risks of developing reliable MS in RIS based on the study of mental, including cognitive disorders.

Keywords: multiple sclerosis; cognitive abnormalities; radiologically isolated syndrome

Materials and methods

For 10 years, 25 patients with RIS were observed in our centeraccording to the results of MRI diagnostics of the brain and spinal cord (cervical region) with gadolinium contrast enhancement (15 women, 10 men), they were included in the first observation group. The average age of the patients was 41 ± 5.23 years. 25 patients with clinicallyisolated syndrome (12 women, 13 men), whose average age was 41 ± 5.23 years, were included inthe second observation group. The control group included 25 healthy individuals, comparable in gender and age. The following methods were used for the study: Spielberger – Khanin test, MFI-20 Asthenia Scale (Multidimensional Fatigue Inventory), MS-FSS Fatigue Assessment Scale (Multiple Sclerosis – Fatigue Severity Scale), MMSE Cognitive Function Test (Mini Mental Scale Examination). The diagnosis of depression was established according to ICD-10, the severity of depression was assessed using the Beck scale. The quality of life was studied usingthe EuroQol-5D questionnaire (health-related quality of life). All patients underwent clinical and neurological examination, anamnesis was studied in detail. In 32% of cases, the conversion of RICE to MS occurred, these patients additionally underwent a retrospective assessment of the survey data to clarify risk factors. MRI examination of both the spinal cord and the brain with contrast enhancement (gadolinium) in T1, T2, FLAIR modes was carried out according to the standard technique on a Siemens high-field tomograph, the magnetic field power of 1.5 T. The degree of disability was not assessed by EDSS, since using this scale it is impossible to quantify accurately the level of mental disorders. Statistical analysis was carried out using the Statistica 6.0 program, correlation analysis was carried out using the nonparametric Spearman criterion. The threshold level of statistical significance was considered to be $p<0.05$.

The results of the study

In patients with RIS with conversion to MS, compared with patients with CIS, a significantly higher level of anxiety of 45 points and higher ($p<0.05$) was revealed, a strong correlation was established between the average score of anxiety indicators with the degree of fatigue severity according to MS-FSS. Which is consistent with the literature data, since a number of studies have established a relationship between psychoemotional disorders andneurochemical processes in the central nervous system [1,2]. A third of patients with RIS with conversion to MS had clinically significant depression, from 17 to 26 points on the Beck scale, which is three times higher than in patients with CIS. Studies by a number of authors have noted that a high level of inflammatory cytokines (TNF α (TNFa) and interferon alpha) correlates with symptoms such as fatigue, decreased concentration and memory, anxiety and depression, which contributes to the development of chronic progressive diseases[3,4].In patients with RICE with conversion to MS, significant stressful events (SSSS) were more often noted in the anamnesis, which confirms the opinion that SSSS lead to a pronounced load on the immune system and contribute to the potentiation of demyelination processes and the subsequent development of MS [5,6]. The prevalence of cognitive

impairment in RIS was the same as in CIS, with the exception of one indicator: in patients with the conversion of RIS to MS, the information processing speed (SOI) was lower than in patients with CIS (p<0.001). In addition, the quality of life of patients with RIS with conversion to MS was lower than in patients with RIS without transition to MS (p<0.005). In healthy people, affective disorders, a decrease in SOY, and an increase in anxiety levels were not found.

Thus, the data obtained confirm the need to monitor and study mental, including cognitive disorders in patients with RIS, as possible risk factors for the conversion of RIS to MS.

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