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ANALYSIS OF GENDER CHARACTERISTICS OF THE INCIDENCE OF CEREBRAL STROKE DEPENDING ON THE LATERALIZATION OF THE LESION

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ABSTRACT: This article discusses the peculiarities of the foreign policy of the Islamic Republic of Iran in the Middle East region, as well as the fact that the Islamic factor is the fundamental ideology of Iran's foreign policy, and the impact of the oil factor on global and regional issues.

KEYWORDS: neuropsychic disorders, comorbid diseases, age, gender, ambidextrous, cerebral stroke.

INTRODUCTION

According to many authors, there is a tendency towards rejuvenation of patients with ischemic stroke. More and more cases of IS occur among people of working age; this is facilitated by comorbid diseases such as atherosclerosis, arterial hypertension, and diabetes mellitus [2].

Also of interest are questions such as the frequency of the main subtypes of IS of specified origin depending on age, gender and location of the lesion. This makes it necessary to identify and study the factors that underlie these differences [1,3].

In this regard, the goal of our work was determined - to study the gender characteristics of the structure of relationships in IS, depending on the type of stroke and the location of the lesion.

Material and research methods. The work was carried out on the basis of the neurological department of City Hospital No. 1 of Tashkent. Patients were recruited over a period of 5 years. The selection criteria were patients with ischemic cerebral stroke. Exclusion criteria: oncological and hematological diseases, severe renal, liver failure.

This study is based on an analysis of the results of a comprehensive clinical examination of 145 patients with cerebral stroke (IS) aged from 45 to 74 years (average age 64.8±9.3 years). The control group consisted of 40 people (20 right-handed and 20 ambidextrous) with hypertension, but without symptoms of focal brain damage. The age of those examined was 46–70 years (average 58.3+11.4).

It should be noted that in the general structure of patients, persons aged 60 to 74 years predominated. The proportion of these patients was 84.1%. This trend was typical for both sexes. In the age category from 60 to 74 years, there was a slight predominance of females compared to males - 56.6% versus 43.4%, respectively.

Among the study subjects, persons in the age category from 45 to 59 years old accounted for 15.9%. Based on the data obtained, there were statistically significant differences in the distribution of men and women by age groups ($p < 0.001$), associated with the predominance of

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men among younger patients. Thus, the proportion of male patients among people 60 years old was 73.9%, for women in this age category this figure was only 26.1%.

The atherothrombotic type of IS was detected in 71.0% of cases (in men - 45.6%, in women -54.4%). Cardioembolic subtype of IS - in 21.4% of cases (in men - 61.3%, in women - 38.7%). The lacunar subtype of IS was detected in 7.6% of the studied patients (in men – 72.7%, in women – 27.3%).

Right hemisphere localization of the lesion was detected in 62.8% of cases (56.0% of cases in men, 44.0% in women). Left hemisphere localization was detected in 37.2% of cases (57.4% in men, 42.6% in women).

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The study of the infrastructure of relationships between the incidence of cerebral stroke was carried out using methods of cluster, factor analysis and multiple linear regression using STATISTICA 6 software packages.

This paper presents an analysis of the gender characteristics of the structure of ischemic cerebral strokes depending on the location of the lesion.

During a comprehensive clinical examination, neurological, laboratory, ultrasound and neuroimaging methods were used, and formatted documentation was used with a detailed presentation of complaints, anamnestic information, subjective and objective signs of the disease, and data from paraclinical studies.

The diagnosis of stroke was established if the patient had an acute development of focal and/or cerebral symptoms lasting at least 24 hours. The nature of the stroke was clarified using computed tomography (CT) of the brain. Taking into account the totality of complaints, anamnestic data, clinical picture of the disease, clinical and instrumental examination data, the pathogenetic subtype of IS was determined according to TOAST criteria [].

To objectify the neurological deficit and severity of the condition, the US National Institute of Health Stroke Scale (NIHSS) (Brott T., 1989) and Gusev-Skvortsova (1991) were used, and the Glasgow Coma Scale was also used. During the recovery period of stroke, the degree of functional recovery was determined using the Barthel scale (1965).

Neuropsychological studies were carried out according to the method of A.R. Luria (1973). The psycho-emotional sphere was studied using the Spielberger-Khanin scales (1976): the level of anxiety (reactive and personal) and depression was determined.

When studying the profile of interhemispheric brain asymmetry, we were guided by the recommendations of T.A. Dobrokhotova, N.N. Bragina (1994) and E.D. Chomsky et al. (1996). The MPA profile of the brain was studied taking into account speech and movement disorders. In some patients, after restoration of speech and motor functions, the profile of interhemispheric asymmetry was examined again.

Clinical symptoms were assessed in points on days 9–10 and 30–32 of the disease. The state of cerebral hemodynamics was studied using transcranial Doppler ultrasound; functional state of the brain - electroencephalographic (EEG) mapping. EEG recordings were made on days 9-10 of illness.

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RESULTS AND ITS DISCUSSION

A study of neuropsychological syndromes in the acute and early recovery periods (AP and ERP) of left- and right-hemispheric ischemic stroke (ABI and PPI) showed that their structure is determined not only by the lateralization of the lesion focus (LOP), but also by the profile of interhemispheric asymmetry (IPA) of the brain.

In the acute period of the disease, in right-handed people, speech disorders were the main manifestations of a left-hemispheric stroke, opto-spatial disorders (OSD) - of a right-hemisphere stroke, while in ambidextrous people a mixed picture of the stroke clinical picture was revealed: in ABI, speech disorders were combined with a violation of opto-spatial gnosis, in PPI - optical-spatial disorders were accompanied by disturbances in speech and other higher brain functions associated with it.

In right-handed patients, in the acute period of ABI, aphasia (sensory, motor and complex) occurred in 82.2±5.7% of patients, while during ABI we did not observe speech disorders in any case. The clinical structure of PPI in the acute period was OPD (anosognosia - in 56.1±7.8%, autotopognosia - in 53.7±7.8%, the phenomenon of ignoring - in 24.4±6.7%, violation of the right - left orientation - in 24.4+6.7%) . Our results confirm the current version of a high degree of lateralization of speech functions in the left, optical-spatial - in the right hemisphere of the brain in right-handed people. However, apraxia (all types) in right-handers was quite common, regardless of the period of illness and LOP.

Of the IMF disorders in RVP of stroke in right-handed people, aphasia underwent significant regression ($P<0.05$); restoration of other functions (especially right hemisphere) was unreliable. We believe that one of the main reasons for the poorer recovery of cerebral functions in PJI and the inadequate emotional and behavioral response of patients are optical-spatial disorders. Thus, in right-handers, a relationship was identified between the clinical structure of neuropsychological syndromes and stroke lateralization, which remained in the SP and RVP of stroke.

In ambidextrous people, the clinical picture of hemispheric stroke was not similar to that in right-handers. Regardless of the lateralization of the lesion, ambidextrous people quite often had “right-hemisphere” symptoms in the case of a left-hemisphere stroke, and “left-hemisphere” symptoms in the case of a right-hemisphere stroke. This indicates that there is no relationship between the clinical structure of neuropsychogic disorders and the lateralization of the lesion, therefore, in ambidextrous people the clinical picture of ABI and PPI was similar. However, we found significant differences in the frequency of occurrence of a number of right- and left-hemisphere neuropsychological syndromes. As in right-handers, the left hemisphere of the brain in ambidextrous people retained its dominant role in speech, and the right hemisphere in optical-spatial functions. Proof of this is the predominance of aphasia in ABI ($P<0.05$), anosognosia in PPI ($P<0.05$).

The rather high frequency of aphasia we identified (34.2%) in PPI in ambidextrous individuals requires special attention and comprehensive analysis, i.e. with damage to the “non-speech” hemisphere of the brain, while in right-handers with the same localization of the focus, aphasia did not occur at all. The data obtained indicate the active participation of the right hemisphere of

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the GM of ambidextrous individuals in the implementation of speech processes, since in them the frequency of aphasia during PPI, considered a typical "left hemisphere" symptom, was the same as the frequency of autotopognosia, considered a typical "right hemisphere" symptom. However, OPD in ambidextrous people, regardless of LOP, was less pronounced than in right-handers.

CONCLUSION

Thus, in individuals with a mixed asymmetry profile, the neuropsychological syndromes of left- and right-hemispheric stroke were of a mixed nature, which should be taken into account when determining the topography of the lesion and prescribing treatment and rehabilitation measures. Therefore, the clinical structure of the neuropsychological syndromes of hemispheric stroke in ambidextrous people gives us the right to make an assumption about they have less specificity of the left and right hemispheres of the brain for verbal and nonverbal functions.

In ambidextrous people, no relationship was found between the clinical structure of neuropsychological disorders and the lateralization of the lesion, so the clinical picture of ABI and PPI was similar in them.

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