

## STRUCTURE OF ACUTE INFLAMMATORY DISEASES OF THE BRAIN DEPENDING ON HIV INFECTION

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**Abstract:** Between 2014 and 2019 On the basis of RRCEMMP and the Research Institute of Virology of the Ministry of Health of the Republic of Uzbekistan, a clinical and laboratory study of 419 patients was conducted to study the structure of acute inflammatory diseases of the brain depending on the HIV status of patients. It was determined that among the examined patients with OVE, almost every 2nd patient with OVE had an HIV positive status (49.1%). Among these patients, women (62.5%) and young patients (50.0%) predominated. In the group of HIV-negative patients with high reliability, persons with serous encephalitis and persons with leukoencephalitis prevailed 56.7% and 22.6%, respectively. In the group with HIV-positive status, persons with encephalitis predominated 77.1% and 14.3% of persons with leukoencephalitis.

**Keywords:** HIV, viral encephalitis.

**Relevance:** Infectious diseases of the nervous system are one of the most common forms of neurological pathology; their share in the structure of the general pathology of the nervous system is about 40% (1.4). In recent years, the possibilities of diagnosing neuroinfections have significantly expanded. Due to the development and introduction into clinical practice of powerful antibacterial and antiviral drugs, significant success has been achieved in the treatment of some recently lethal diseases. However, the expansion of the spectrum of etiopathogens that cause the development of neuroinfections, the increase in mixed, atypical forms, the growth of resistance of the main bacterial pathogens to the most common antibiotics creates significant difficulties in the treatment of infectious lesions of the nervous system (2,3).

**Aim of the study.** Изучение особенностей структуры острых воспалительных заболеваний головного мозга.

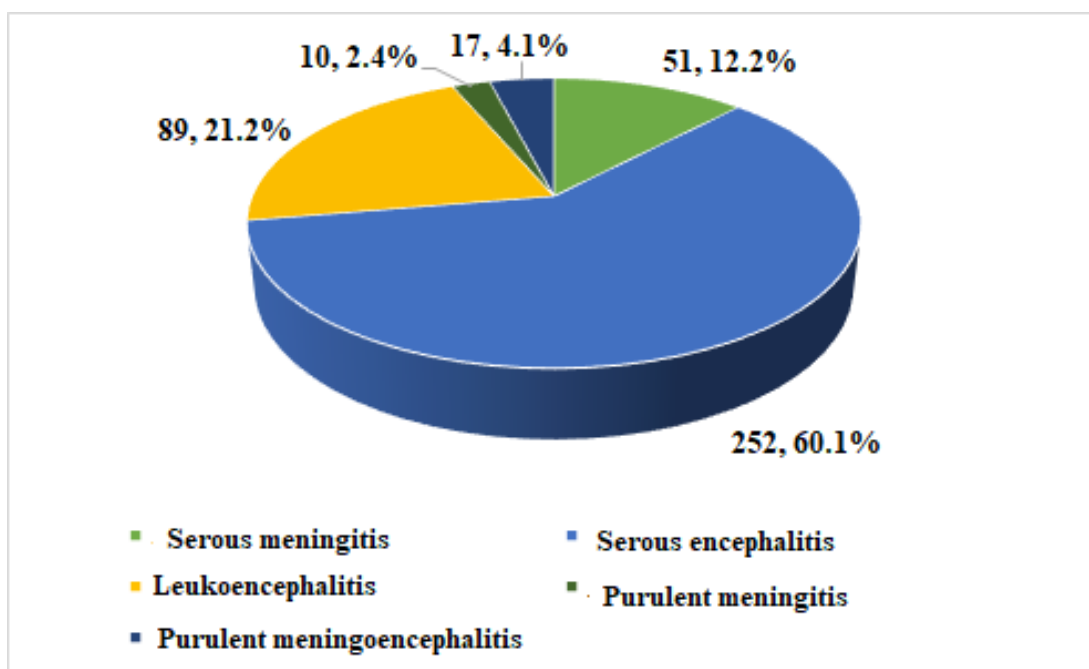


**Material and methods:** The study was conducted on the basis of the RRCEMMP, in the neurological department and the intensive care unit (ICU), and the Research Institute of Virology of the Ministry of Health of the Republic of Uzbekistan. A clinical and laboratory study was conducted in 419 patients with acute inflammatory diseases of the brain in the period from 2014 to 2019. There were 245 (58.5%) men and 174 (41.5%) women, the average age of the subjects was 41.7+22.6 years.

The patients were examined according to the following algorithm: complaints, anamnesis; general clinical tests; biochemical analyzes; diagnostic lumbar puncture (LP) with a clinical study; laboratory and biochemical research; diagnostic LP with PCR; MRI of the brain.

Statistical processing of clinical and instrumental materials in accordance with the recommendations for processing the results of biomedical research at a significance level of  $p < 0.05$  was carried out using the practical statistical package STATISTICA.

**Results and discussion:** As can be seen from Figure 1, in the period from 2014 to 2019, patients were admitted mainly with serous encephalitis (60.1%). A significant proportion was leukoencephalitis - 21.2%. The proportion of serous and purulent meningitis was 12.2% and 2.4%, respectively.



*Figure 1. The structure of acute infectious diseases of the brain in the period from 2014 to 2019*



The prevalence of acute inflammatory brain diseases depending on age is shown in Table 1. Table 1 shows that, in general, acute inflammatory brain lesions occurred in young people (60.6%), in old age this pathology occurred in 7.4% of cases. As for the nosological spectrum of this pathology, the table shows that serous encephalitis and leukoencephalitis were significantly more frequently recorded in different age categories.

**Table 1.**

**Distribution of patients depending on age**

Nosology	18-44 [60,6%]		45-59 [32,0%]		60-74 [7,4%]		Total	
	n	%	n	%	n	%	n	%
Serous meningitis	29	11.4%	16	11.9%	6	19.4%	51	12.2%
Purulent meningitis	3	1.2%	5	3.7%	2	6.5%	10	2.4%
Serous meningoencephalitis	96	37.8%	65	48.5%	9	29.0%	170	40,6% #
Purulent meningoencephalitis	11	4.3%	5	3.7%	1	3.2%	17	4.1%
Leukoencephalitis	49	19.3%	31	23.1%	9	29.0%	89	21,2% *
Encephalitis	66	25,9%*	12	9.0%	4	12.9%	82	19,6% *
TOTAL (n=419)	254	100.0%	134	100.0%	31	100.0%	419	100.0%

Moreover, serous encephalitis was more common in young people - 63.8% in middle-aged and elderly people, this figure was lower and amounted to 57.5% and 41.9%, respectively. While serous meningitis is more common in the elderly - 19.4% than in the middle and young - 11.9% and 11.4%, respectively.

**Table 2.**

**Distribution of patients depending on gender**

Nosology	Men (58.5%)		Women (41.5%)	
	n	%	n	%
Serous meningitis	29	11.8%	22	12.6%
Serous encephalitis	158	64.5%	94	54.0%
Leukoencephalitis	49	20.0%	40	23.0%
Purulent meningitis	3	1.2%	7	4.0%
Purulent meningoencephalitis	6	2.4%	11	6.3%
TOTAL (n=419)	245	100.0%	174	100.0%



The prevalence of acute inflammatory diseases of the brain depending on gender is presented in Table 2. According to Table 2, there were more male patients than female patients - 58.5% and 41.5%, respectively.

**Table 3.**

**Distribution of patients depending on the presence of HIV infection**

Nosology	Men (58.5%)		Women (41.5%)	
	n	%	n	%
Serous meningitis	29	11.8%	22	12.6%
Purulent meningitis	3	1.2%	7	4.0%
Serous meningoenkephalitis	115	46.9%	55	31.6%
Purulent meningoenkephalitis	6	2.4%	11	6.3%
Leukoencephalitis	49	20.0%	40	23.0%
Enkephalitis	43	17.6%	39	22.4%
TOTAL	245	100.0%	174	100.0%

When considering the gender composition within the nosological spectrum, purulent meningitis and purulent meningoenkephalitis were more common in males, among the rest of the nosology there was an unreliable preponderance of female patients.

All patients with inflammatory diseases of the brain were diagnosed with HIV status. The results of the ratio of HIV-negative and HIV-positive patients are displayed in Table 3.

The table shows that in the group of HIV-negative patients with high reliability, persons with serous enkephalitis and persons with leukoenkephalitis prevailed 56.7% and 22.6%, respectively. In the group with HIV-positive status, persons with enkephalitis predominated 77.1%, which is highly reliable compared to the incidence of other inflammatory processes of the brain in HIV pathology, and 14.3% of persons with leukoenkephalitis.

Thus, in a study of 419 patients with acute inflammatory diseases of the brain who were admitted to the RSC EMC for the period 2010-2019, it was found that more often in the nosological structure there were persons with serous enkephalitis (29.6%) and serous meningoenkephalitis (30.5%), (leukoencephalitis and serous meningitis accounted for 21.2% and 12.2%, respectively).





Among patients, young people were more common - 60.6% and middle-aged - 32.0%. With regard to gender differences, there were not significantly more men than women - 58.5% versus 41.5%, respectively. In 16.7% of persons, HIV infection was detected. Among the examined patients with OVE, almost every 2nd patient with OVE had an HIV positive status (49.1%). Among all patients with inflammatory diseases of the brain who were hospitalized at RRCEM for the period 2014-2019, the highest % of HIV-positive patients occurred with OVE. In the group of HIV-positive patients with OVE, women (55.8%) and young patients (65.4%) predominated.

In the HIV-negative group with OVE, the distribution was the same - women (62.5%) and young patients (50.0%) predominated, among older people (60-74 years), the percentage of patients was more than in group 2 - 18.1% versus 3.8%.

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