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LITERATURAL REVIEW OF THE RELEVANCE OF THE PROBLEM OF NEUROSAIDS

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Abstract: the article deals with the current problem of neurological disorders in HIV infection. Knowledge of pathogenesis and timely diagnosis of disorders of the nervous system make it possible to establish the etiology of the pathological process, which is important for further specific therapy. The authors describe a modified classification of possible manifestations of pathologies of the nervous system in neuroAIDS . At the same time, considerable attention is paid to drug therapy regimens that have an integrated approach. The directions of the etiotropic fight against the virus, as well as symptomatic correction, are considered.

Keywords: HIV infection, neurology, disorders, antiretroviral therapy (ART), specific therapy.

Introduction. In the modern world, the problem of acquired immunodeficiency syndrome (AIDS) does not lose its relevance. Not so long ago, on June 5, 1981, this disease was first described by Michael Gottlieb , an American scientist from the Center for Disease Control, and by the end of 2015, according to UNAIDS statistics, 36.7 million people live with human immunodeficiency virus (HIV) worldwide causing the development of AIDS. Increasingly, such patients turn to neurologists for help, since the lesions of the nervous system in HIV infection and AIDS are very diverse and occur in 50–80% of patients [8].

Careful studies have made it possible to understand the pathogenetic mechanism of the impact of the human immunodeficiency virus both on individual cells in the brain and spinal cord, and on the entire nervous system as a whole. The human immunodeficiency virus enters the central nervous system in two ways: perineural and hematogenous.

Main part. The virus carries on its surface special glycoproteins, which, like a “key to the lock”, attach to CD4 receptors, which in the human body are located on lymphocytes (CD4 + lymphocytes), are brain glial cells (astrocytes , oligodendrocytes), sensitive ganglion cells, endothelial cells choroid plexuses of the membranes of the brain and spinal cord and ventricular ependyma. In the central nervous system there are "representatives" of both the first and second.

Thus, the virus, having entered the human body, binds to CD4 and (CCR5 and CXCR4) receptors due to the presence of glycoproteins 41 and 120 on the surface of viral particles, penetrates into the cell, synthesizes proviral DNA from viral RNA with the participation of the HIV reverse transcriptase enzyme. The resulting DNA is inserted into human DNA with the help of HIV integrase , and then, in the process of biosynthesis, proteins that are pathological for the body are formed, which lead to disruption of the cells of not only the immune system, but also the nervous system [5].

The main symptoms of neuroAIDS

Damage to the nervous system in HIV infection can be conditionally divided into:

- Primary neuroAIDS , which is caused only by the action of HIV and does not yet affect other organs and systems;

- Secondary neuroAIDS , manifested by the addition of various opportunistic infections and tumors of the nervous system against the background of developed immunodeficiency;
- Combined lesions caused by HIV and accompanied by immunodeficiency. Primary neuroAIDS

1. HIV-encephalopathy - is characterized by a gradual change in higher brain functions, intelligence, behavior, psyche, memory impairment, and a disorder in the motor sphere.
2. HIV-associated meningitis - occurs with the development of intoxication syndrome, meningeal symptoms, but may also have an erased course, manifesting itself only with headache, tinnitus, and general malaise. With the development of meningoencephalitis , it is possible to attach epileptic manifestations, paresis, aphasia.
3. Vascular neuroAIDS - the development of a virus- induced vasculitis of the brain and spinal cord, which leads to repeated TIA and strokes, frequent hemorrhages in the cerebellum.
4. Inflammatory polyneuropathies - early manifestation in the form of various sensitivity disorders: from contact hypersensitive y to paresthesia and hypesthesia, vegetative disorders [3, 7].

Secondary neuroAIDS

1. Multifocal leukoencephalopathy - a progressive demyelinating disease of the NS, more often caused by the addition of the .TC virus. Manifested by violations of speech, movements, psyche, coordination, sensitivity, headache, bulbar syndrome.
2. Toxoplasmic encephalitis - is manifested by a very numerous neurological symptoms, including paresis and plegia , various lesions of the organ of vision, impaired coordination, impaired consciousness and intelligence, convulsions.
3. Cryptococcal meningoencephalitis - a combination of intoxication syndrome, meningeal symptoms and cerebral symptoms. Perhaps the accession of convulsions, mental disorders, visual impairment and damage to other organs.
4. Cytomegalomeningoencephalitoviral encephalitis - at first it has no characteristic symptoms and is manifested only by minor disturbances in sleep, mood, memory, and dizziness. After joining the violation of consciousness, meningeal symptoms, convulsive seizures, up to the point of death.
5. Tumors of the nervous system - due to the oncogenic effect of HIV. More common are malignant lymphomas that are severe. Symptoms are dominated by brain compression syndrome [1, 6].

Diagnostics

1. Indirect tests - detection of specific antibodies to HIV - ELISA, immunoblotting .
2. Direct tests - determine HIV antigens or HIV nucleic acids - PCR.
3. Rapid tests: agglutination reaction, ELISA, immunochromatography , flow cytometry , immunological filtration analysis, fluorescence microscopy.
4. CT, MRI - you can see direct and indirect signs of damage to the brain and other organs; EEG - change in the electrical activity of the brain in neuroAIDS .
5. Analysis of cerebrospinal fluid - detection of antibodies to HIV, often pleocytosis ; microscopy of CSF; ENMG - in the diagnosis of myelinopathy , polyneuropathy .
6. PCR to detect DNA and RNA of pathogens of opportunistic infections.
7. Serological methods for detection of causative agents of opportunistic infections ELISA, latex agglutination reactions [2, 4].

Treatment

The treatment of HIV infection/ neuroAIDS today is a complex task and is carried out mainly in two directions:

1. Etiotropic antiretroviral therapy (ART), which prevents further replication of HIV in the body;
2. Symptomatic therapy of mental, neurological and neuropsychiatric disorders. Modern ARTs inhibit virus replication at different stages of its life cycle:

- Nucleoside reverse transcriptase inhibitors (NRTIs) of HIV, the most famous is azidothymidine , which increases the number of CD4 cells and reduces the level of viral load.
- Non -nucleoside reverse transcriptase inhibitors (delavirdine , nevirapine , efavirenz are used).
- Protease inhibitors, the most highly active class of drugs against the HIV virus (saquinavir , indinavir).
- Interferons prevent the virus from attaching to target cells [4].

In secondary neuroAIDS , specific therapy is necessary, since the associated opportunistic infection of the nervous system requires its own treatment.

Toxoplasmosis encephalitis is the most curable neurological complication. It is treated with pyrimethamine (25–150 mg/ day) and sulfadiazine (2–4 mg/ day in 4 doses) for at least 4 weeks, or clindamycin or azithromycin 1200 mg once for 6 weeks, then 600 mg daily for life.

For cryptococcal meningitis , amphotericin B 0.5–1.0 mg/kg/ day is prescribed . within 2 weeks simultaneously with fluorocytosine 0.5 mg / kg / day . IV , then - transition to Diflucan 400 mg / day . Within 10-12 weeks.

For CMV-encephalitis - acyclovir (Zovirax) 10-12.5 mg / kg IV slowly drip into

Within 60 minutes after 8 hours - 10-14 days. Valtrex inside 3000 mg per day in 3 divided doses.

Cymiven 5 mg/kg body weight intravenously for 10-14 days [7].

Findings. In primary neuroAIDS , ART (especially its early start) has a good effect, delaying the development of the pathological process. However, symptomatic therapy is equally important. In particular, soft nootropics (adaptol , phenotropil , ceraxon , etc.) can be used in the treatment of HIV encephalopathy. In the treatment of manifestations of the vascular form of neuroAIDS , the use of mild anticoagulants and trental is recommended . With polyneuropathies - milgamma , nucleo -CMV, ceraxon . In the treatment of secondary neuroAIDS, in addition to ART, the use of specific therapy against opportunistic infections is mandatory. In conclusion, we consider it necessary to support the proposal of a number of medical scientists and practitioners on the need to introduce a special course on AIDS and neuroAIDS for medical cadets of various specialties, and also to introduce it into the program of pre- and postgraduate education

Literature:

1. Evtushenko S. K., Derevianko I. N. Classification of neuropsychiatric disorders in HIV -infected individuals // Neuroimmunology , 2003. T. 1. No. 2. P. 6-7.
2. Evtushenko S. K., Derevyanko I. N. Neurospeed as one of the most urgent problems of modern practical neurology // International neurological journal, 2006. No. 5 (9). pp. 10-13.
3. Ulyuk in I. M., Bolekhan V. N., Bulankov Yu. I. Diagnostics of the somatopsychological state of young HIV patients . Ros. military honey. Acad., 2012. No. 2 (38). pp. 84-89.
4. Yakovlev N. A., Zhulev N. M., Slyusar T. A. NeuroAIDS . Neurological disorders in HIV infection/AIDS: A textbook. Moscow : MIA , 2005. 278 p .
5. Amount of HIV DNA in peripheral blood mononuclear cells is proportional to the severity of HIV-associated cognitive disorders / B. Shiramizu [et al.] //J. Neuropsychiatry Clin . Neurosci , 2009. Vol. 21, No. 1. P. 68-74.
6. BartR . E. The Neurology of AIDS // JAMA, 2006. 295:331.

7. Murphy EL, Collier AC, Kalish LA et al. Highly active antiretroviral therapy decreases mortality and morbidity in patients with advanced HIV disease// Annals of Internal Medicine, 2005. 135. 17-26.
8. AIDS in numbers 2015 // UNAIDS [Electronic resource]. Access mode: http://www.unaids.org/sites/default/files/media_asset/AIDS_by_the_numbers_2015_ru.pdf/ (Accessed 01/05/2017).