# TYPES AND DIAGNOSIS OF ENCEPHALOPATHY, I.E. BLOOD CIRCULATION DISORDERS IN THE BRAIN

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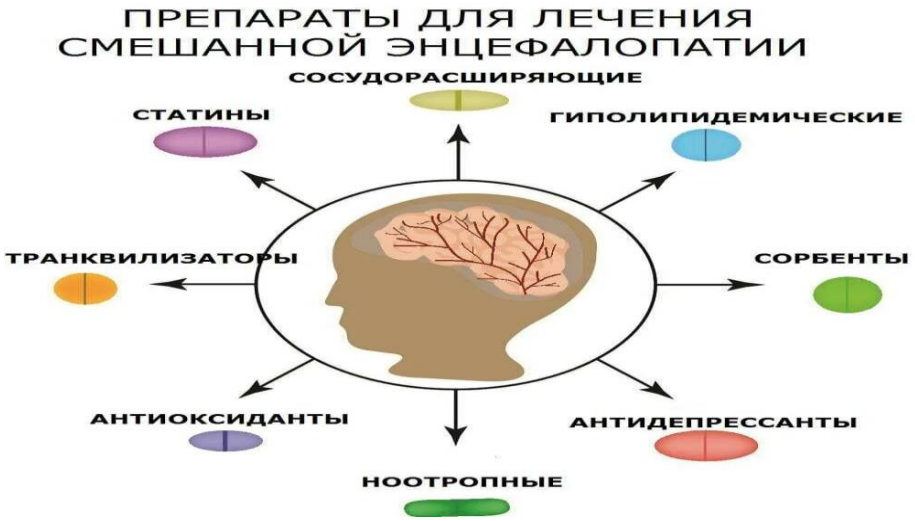
**Abstract**: *de is a condition that manifests itself as progressive multifocal disorders of brain functions based on a lack of cerebral circulation. One of the most severe manifestations of De is vascular dementia.The occurrence of neurological, neuropsychological and mental disorders can be caused by a chronic violation of cerebral circulation and (or) recurrent episodes of dyscirculation with pronounced clinical signs (in the form of a stroke or a temporary ischemic attack) or occurring subclinically.*

**Keywords**: *dyscirculatory encephalopathy, chronic vascular encephalopathy, cerebral microangiopathy, cerebrovascular disease, cognitive disorders of blood vessels.*

Tserebrovascular diseases are one of the pressing problems of Neurology. They are of particular importance in elderly and elderly patients. Significant prevalence of chronic forms of cerebral vascular insufficiency or, according to the existing classification, discirculation encephalopathy (de) determines the practical significance of this problem, especially in older patients. Currently, approximately 12-15% of the population is over 65 years old, and by 2020 the number will at least double.



De is a condition that manifests itself with progressive multifocal disorders of brain functions based on a lack of cerebral circulation. One of the most severe manifestations of De is vascular dementia.

The occurrence of Deda neurological, neuropsychological and mental disorders can be caused by chronic insufficiency of cerebral circulation and (or) repeated episodes of dissirculation with pronounced clinical signs (in the form of a stroke or temporary ischemic attack) or occurring subclinically. In this regard, it should be noted that almost 80% of elderly people with a heart attack did not have signs of stroke during their lifetime. For the main etiological reasons, atherosclerosis, hypertensive, mixed and venous de are distinguished, although other causes of it are possible (vasculitis, systemic hemodynamic diseases, blood diseases, etc.). In recent times, more and more importance has been attached to arterial hypotension, including due to insufficient active use of hypotensive drugs.

**PATHOGENETIC ASPECTS OF DISCIRCULATORY ENCEPHALOPATHY**

De pathogenesis is caused by a lack of cerebral circulation in a relatively stable form or in the form of repeated episodes of dissirculation. As a result of pathological changes in the vascular wall, the autoregulation of cerebral circulation is disrupted, the dependence on the state of systemic hemodynamics increases. To this is added a violation of the neurogenic regulation of systemic and cerebral hemodynamics. Important in this regard is the aging process of the nervous, respiratory and cardiovascular systems, which leads to the development or exacerbation of cerebral hypoxia. Brain hypoxia itself is based on further damage to the mechanisms of autoregulation of cerebral circulation.

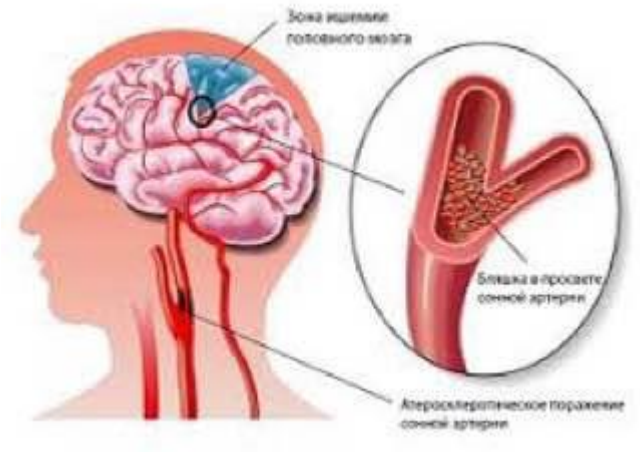
In old and old age, the dependence of cerebral blood flow on the state of systemic hemodynamics becomes even more important. More than half of elderly patients with heart failure have varying degrees of cognitive impairment, which often leads to disability. The severity of cognitive impairment is associated with the level of left ventricular insufficiency, and their genesis is associated with chronic cerebral hypoperfusion. Under the conditions of left ventricular pathology, blood flow from the heart decreases, and thus the level of volumetric blood flow in the main arteries of the head decreases. The main factor that determines the decrease in cerebral perfusion in most patients with heart failure is considered to be a decrease in cardiac output, and not systemic arterial hypotension. Of course, the appearance of episodes of systemic hypotension (for example, against the background of arrhythmia or an overdose of antihypertensive drugs) increases the already reduced cerebral blood flow. The occurrence of neurological disorders in patients with heart failure may be based on repeated episodes of cardioembolism, in addition to a decrease in cerebral blood flow. The cause of these emboli is systolic dysfunction of the left ventricle, which leads to an increase in diastolic volume and stagnation of blood, which contributes to the formation of blood clots (12% of patients with cardiomyopathy have blood clots in the left

ventricle). It is very difficult to assess the contribution of each of these factors (decreased cerebral perfusion or recurrent cardioembolism) to the genesis of cerebrovascular diseases in elderly patients.

One of the risk factors for de development is the pathology of the main vessels of the head. The results of a study of the state of cerebral hemodynamics using the ultrasound examination method in patients with De show that the volume of clinical neurological and neuropsychological diseases in elderly patients is associated with the severity of several vascular lesions with the development of blood flow failure in the carotid and vertebral arteries. This category of patients is characterized by an unstable course of the disease, often complicated by acute recurrent episodes of De. Against the background of combined damage to the main vessels, the state of intersecerebral hemodynamics and the possibility of collateral blood flow at the level of the vessels of the villicium circle will have the greatest clinical significance. Patients with severe neurological symptoms often experience impaired function of the anterior and posterior connective arteries. All this explains the relative ease of decompensation of chronic vascular brain failure in elderly patients, for example, against the background of a deterioration in systemic hemodynamics.

Unlike atherosclerotic de, hypertonic de is not characterized by damage to the extronial arteries. With hypertensive de, The main pathological processes that are muxim to form the clinical picture of the disease are concentrated in the small branches of the vascular system of the brain. The age factor is ham Mukhim. With age, diastolic and systolic blood pressure increases, but from the sixth decade of life, systolic blood pressure continues to increase and diastolic blood pressure decreases. This leads to an increase in pulse pressure., it is not only associated with atherosclerotic changes in blood vessels in older and older people, but also increases the risk of developing Alzheimer's disease.

Low pulse pressure levels, in which the level of cerebral perfusion decreases, are also unfavorable from the prognostic bias. In cases of pulse pressure disorders, the occurrence of neurological disorders is associated with damage to the cerebral parencheme in the deep parts of the hemisphere(in particular in the zones of vascularization of the anterior chorioidal and anterior perforating arteries), with the development of ischemia in these zones, along with oxidative stress and extrasystolic). At the same time, in patients with pulse pressure disorders, even a clear atherosclerosis from a subclinical bias is ham muxim. Against the background of Arterial hypotension, there is a high risk of brain diseases, patients with arterial hypertension earlier, but this is not confirmed by all authors.



In this regard, it should be noted that the frequency of occurrence in the population of people with arterial hypotension increases with age. The presence of Arterial hypotension leads to microcirculatory changes and disruption of cerebral perfusion, which is cognitively impaired not only in De and vascular dementia, but also in primary degenerative Genesis dementia.

In older and older people, orthostatic hypotension is more common-up to 65% in 20 and older and up to 75% in 30 and older. There are several reasons for this: a decrease in the sensitivity of baroreceptors, dehydration of different origins, a longer period of being in a horizontal position, as well as side effects of therapy performed on different indications. Rapid standing leads to the fact that under the influence of gravity, up to a quarter of the volume of blood (from 500 to 1000 ml) accumulates in the vessels of the abdominal cavity and lower extremities. A decrease in venous return to the heart and a decrease in ventricular filling lead to a decrease in cardiac output and a decrease in blood pressure. However, in clinically healthy people, systolic blood pressure can increase by 5-10 mmHg, while diastolic blood pressure can increase by 5-10 mmHg, and heart rate can increase by 10-25 times per minute. Usually, the autonomic nervous system provides compensation by changing vascular tone, increasing heart rate, and increasing heart function, so that the cerebral blood flow is not significantly damaged. However, often in the elderly, such compensation is unbearable, which leads to the development of orthostatic hypotension. It is interesting that according to transcranial Dopplerography with orthostatic hypotension, the tone of the vessels of the brain may increase, which is associated with hypocapnia caused by hyperventilation.


The rheological and biochemical properties of blood are not of minor importance in de development. Disorders of microcirculation are detected due to increased platelet functional activity, blood viscosity, hidden signs of

coagulation within a diffuse vein. The most important rheological changes are observed in patients with Type IIB and Type IV hyperlipidemia. Recently, data is being collected on the important role of venous diseases in de pathogenesis.

Treatment

Treatment of de should include effects aimed at the underlying disease that de develops (atherosclerosis, arterial hypertension, vasculitis, etc.), eliminating neurological and psychopathological syndromes, improving cerebral circulation and metabolic processes. Given that the majority of patients with De are elderly and old, adequate therapy of concomitant somatic diseases should be carried out, which significantly affects the neuropsychiatric state of patients.

The presence of high levels of lipids in the blood is an indication for the appointment of appropriate drugs with hypolipidemic effects. To prevent acute disorders of cerebral circulation, disagregants (acetylsalicylic acid, Dipyridamole, clopidogrel) are used according to the instructions (in the presence of appropriate heart diseases) – anticoagulants. The secreting effect of Dipyridamole (Surantil)is associated with the blocking of phosphodiesterase, which leads to inhibition of platelet aggregation. Also, this drug enhances coronary circulation, improves the blood supply to the myocardium with oxygen. The effectiveness of simultaneous use of Dipyridamole and acetylsalicylic acid is twice as high as the effectiveness of taking these drugs separately. The data obtained show differences in the mechanisms of division of drug action. Decreased platelet aggregation under the action of acetylsalicylic acid is caused by inhibiting the synthesis of thromboxane A2 from arachidonic acid, which causes thrombosis, and Dipyridamole reduces thrombosis by inhibiting adenosine withdrawal. Thus, it seems preferable to use Dipyridamole and acetylsalicylic acid together. At the same time, the risk of bleeding does not increase.

The presence of a stenosis lesion of the main arteries of the brain can serve as a basis for considering the need for surgical treatment. 20-30% of patients with ischemic stroke have Hemodynamically significant stenosis of this vein in the internal sleeping artery Basin. However, in about 20% of patients with recurrent ischemic stroke and stenosis, the occurrence of recurrent strokes is not associated with existing stenosis. However, indications for carotid endarterectomy are present in only 8% of patients with acute cerebral circulatory disorders (ischemic stroke or temporary ischemic attack).

Preparations of different groups are used to improve blood flow and metabolism in the brain. As vasoactive drugs, Instenone, sinnarizine, pentoxifylline, nickergoline, vinposetin, ginkgo biloba preparations, nicotinic acid derivatives are prescribed. Since oxidative stress plays a certain role in de pathogenesis, conducting antioxidant therapy seems pathogenetically justified. The use of glutamate n-methyl-D-aspartate receptor antagonist-a memantine that acts on oxidative stress and excitotoxicity processes-is promising. Among calcium channel antagonists, nimodipine has advantages that act mainly at the brain level. Cerebrolysin, piracetam, ensephabol, astovegin, mildronate,

etc. used as metabolic agents. Nootropic drugs have a beneficial effect on the most "mobile" components of cognitive activity: concentration, speed of information processing and memory.

It should be noted that drugs that improve cerebral blood flow and neuronal metabolism are more effective if they are prescribed in the early stages of cerebral vascular failure, when the severity of cognitive impairment does not reach the level of dementia.

Special treatment may require the appearance of depression, anxiety, hallucinations, psychomotor agitation in patients.

Conclusion

Dyssirsulatory encephalopathy is a heterogeneous condition in terms of clinical characteristics and pathogenetic mechanisms. The development of vascular brain failure is manifested by the complexity of the development of several clinical syndromes. These disorders are often based on anterior-subcortical dissociation syndrome.

Important risk factors for the development and development of discirculatory encephalopathy are damage to the main vessels of the head, arterial hypertension and arterial hypotension, as well as hemorrhagic diseases. Major neuroimaging manifestations of this disease include small and large post-ischemic foci, diffuse changes in white matter (leukoareosis), and brain atrophy. Combined somatic diseases play an important role, especially in elderly patients. In older people, the course of chronic vascular brain failure is more dependent on somatic condition than in younger patients. Treatment of dyscirculatory encephalopathy is a complex problem. Therapeutic measures are most effective in the early stages of the pathological process. When planning therapeutic measures for this category of patients, attention should be paid to correcting potential negative risk factors. To prevent acute circulatory disorders, disagregants are used, among which Dipyridamole can be distinguished, which inhibits platelet aggregation and improves blood supply to the myocardium with oxygen. Joint use of Dipyridamole and acetylsalicylic acid is very effective when there is no high risk of bleeding. The presence of a stenosis lesion of the main arteries of the brain can serve as the basis for surgical intervention. To improve the blood flow and metabolism of the brain, preparations of various groups are used: vasoactive substances, calcium channel antagonists, nootropics.

**BIBLIOGRAPHY:**

1. Varlou Ch.P., M.S.Dennis, J.van Geyn I dr. Stroke. Prakticheskoe rukovodstvo dlya vedeniya bolnix / / Per. s angle. - Spb. -1998. - S.629

2. Damulin I.V. Bolezn Alsgeimera I sosudistaya dementia. // Pod Red. N.N.Yakhno. –M. -2002. - S.85.

3. Damulin I.V., Parfenov V.A., Scoromes A.A., N.N.Yakhno. Narusheniya krovoobratsheniya V golovnom I spinnom mozge. //V kn.: "Nervnay system of Balez. Rukovodstvo dlya vrachey". N.N.Yakhno, D.R.Shtulman (Ed.). –M.: "Media". -2005. - S.231-302.

4. Levin O.S., Damulin I.V. Diffuznie izmenenia belogo vetshestva (leukoareosis) I problema sosudistoy dementii. //V kn.: "Dostijeniya v neurogeriatrii". Pod Red. N.N.Yakhno, I.V.Damulina. –M.: izd-vo MMA. -1995. - S.189-231.

5. Martinov A.I., Shmirev V.I., Ostroumova O.D. I soavt. Osobennosti porajeniya belogo vetshestva golovnogo mozga U pojilix bolnix s arterialnoy hypertenziey. // Klinicheskaya medisina. -2000. –№ 6. - S.11-15.

6. Mkhitaryan E.A. Preobrazhenskaya I.S. Bolezn Alsgeimera i tserebrovaskulyarnie rasstroystva.// Neurol. magazine (Prilogenie). -2006. –№1. - s.4-12.

7. Odinak M.M., Voznyuk I.A. Sovremennie sredstva lecheniya ishemicheskogo stroke. // Terra-Medika -1999. № 2. - S.28-36.

8. Parfenov V.A. Metabolicheskaya therapy ishemicheskogo stroke. // Russky medisinsky Journal. -2002. - T.10. № 25. - S.21-30.

9. Preobrazhenskaya I.S., Yaxno N.N. Sosudistie cognitivnie narusheniya: klinicheskie proyavleniya, diagnostics, lechenie.// Neurologichesky Journal. -2007. - T.12. –№5. - S.45-50.

10. Selezneva N.D., Kolikhalov I.V., Gerasimov N.P., Jarikov G.A.Gavrilova S.I. Primenenie gliatilina dlya lechenia dementia alsgeymerovskogo tipa. // Sosialnaya I Klinicheskaya psychiatry. -1998. № 4. - S.42-51.

11. Yakhno N.N., Levin O.S., Damulin I.V. Sopostavlenie klinicheskix I MRT-dannix pri dissirkulatornoy encephalopatii. Soobtshenie 2: cognitivnie narusheniya. // Neurol.corn. -2001. - T.6, № 3. - S.10-19.

12. Yakhno N.N., V.V.Zakharov. Cognitivnie i emosionalno-affektivnie narusheniya pri dissirkulyatornoy encephalopatii. // Russky medisinsky Journal. -2002. - T.10. № 12-13. - S.539-542.

13. Yakhno N.N., Lokshina A.B., Zakharov V.V. Legkie i umerennie kognitivnie rasstroystva pri dissirkulyutornoy encephalopatii. // Neurologichesky Journal. -2004. –№2. - S.30-35.

14. Yakhno N.N., Lokshina A.B., Zakharov V.V. Legkie i umerennie kognitivnie rasstroystva pri dissirkulyutornoy encephalopatii. // Klinicheskaya Gerontology. -2005. - T.11. –№ 9. - S.38-39.

15. Yakhno N.N., Zakharov V.V., Lokshina A.B. Syndrome umerennix cognitivnix narusheniy pri dissirkulatornoy encephalopatii. // Magazine neurol. psychiatrist I. im. S.S.Korsakova. -2005. - T.105. –№ 2. - S.13-17.

16. Yakhno N.N. Kognitivnie rasstroystva V neurologicheskoy klinike. // Neurologichesky Journal. -2006. - T.11. - Prilacenie No. 1. - S.4-12.

17. Dubois B., A.Slachevsky, I.Litvan, B.Pillon. The FAB: a frontal assessement battery at bedside. //Neurology. –2000. –V.55. –P.1621–1626.

18. Erkinjuntti T., Roman G., Gauthier S. et al. Emerging therapies for vascular dementia and vascular cognitive impairment. //Stroke. –2004. –Vol.35. P.1010–1017.

19. Erkinjuntti T., Roman G., Gauthier S. Treatment of vascular dementia–evidence from clinical trials with cholinesterase inhibitors. //J Neurol Sci. –2004. –Vol.226. –P.63–66.

20. Fu C., Chute D.J., Farag E.S. et al. Comorbidity in dementia: an autopsy study. //Arch Pathol Lab Med. –2004. –V.128. –N.1. –P.32–38.

21. Folstein M.F., S.E.Folstein, McHugh P.R. Mini–Mental State: a practical guide for grading the mental state of patients for the clinician. J Psych Res, 1975, V.12, pp 189–198.

22. Golomb J., Kluger A., Garrard P., Ferris S. Clinician's manual on mild cognitive impairment // London: Science Press, 2001.

23. Hachinski V.C., Lassen N.A., Marshall Y. Multi–infarct dementia: a cause of mental deterioration in the elderly. //Lancet. –1974. –V.2. –P.207.

24. Salomova, N. K. (2022). Risk factors for recurrent stroke. Polish journal of science N, 52, 33-35.

25. Qahharovna, S. N. (2023). Thromboocclusive Lesions of the Bronchocephalic Arteries: Treatment Options and Phytotherapy Options. AMERICAN JOURNAL OF SCIENCE AND LEARNING FOR DEVELOPMENT, 2(2), 41-46.

26. Nilufar Kakhorovna//FEATURES OF NEUROREHABILITATION ITSELF DEPENDING ON THE PATHOGENETIC COURSE OF REPEATED STROKES, LOCALIZATION OF THE STROKE FOCUS AND THE STRUCTURE OF NEUROLOGICAL DEFICIT//European Journal of Research Development and Sustainability (EJRDS 11. 8-12. 2022/11

27. Salomova, N. K. (2022). Risk factors for recurrent stroke. Polish journal of science N, 52, 33-35.

28.Gaffarova V.F. Clinic-eeg correlation somatogenous of conditioned febrile seizures in children. // International Journal of Human Computing Studies.2021. –P.114-116.

29.Gaffarova V.F. Early prevention of psycho-speech disorders during febril conversions in children.// European journal of innovation in nonformal education. Volume 2 Issue 11 November 2022. –P. 74-79.

30.Gaffarova V.F. Aspects of febril conversions in children's neurology.// European journal of innovation in nonformal education. Volume 2 Issue 12 December 2022. –P. 77-81.