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НОВЫЙ ДЕНЬ В МЕДИЦИНЕ  
NEW DAY IN MEDICINE**

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**ИЗУЧЕНИЕ НЕВРОЛОГИЧЕСКИХ ПОКАЗАТЕЛЕЙ У ПАЦИЕНТОВ С ФАКТОРАМИ РИСКА РАЗВИТИЯ ЦЕРЕБРОВАСКУЛЯРНЫХ ЗАБОЛЕВАНИЙ С ИСПОЛЬЗОВАНИЕМ БАЛЬНЕОТЕРАПЕВТИЧЕСКОЙ КОРРЕКЦИИ И ИХ ЗАВИСИМОСТЬ ОТ ТЕХНОГЕННОЙ И ЕСТЕСТВЕННО-ПРИРОДНОЙ НАГРУЗКИ**

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✓ **Резюме**

*У пациентов трудоспособного возраста с наличием факторов риска прогрессирования ранних форм недостаточности мозгового кровообращения применение в комплексных реабилитационных программах эндоназального электрофореза раствора танакан (EGb 761) в сочетании с радоновыми ваннами является действенным высокоэффективным безопасным методом профилактики цереброваскулярных катастроф*

*Ключевые слова: ранние формы недостаточности мозгового кровоснабжения, танакан (EGb 761), эндоназальный электрофорез, радоновые ванны*

**BALNEOTERAPEVTIK TUZATISH YORDAMIDA SEREBROVASKULYAR KASALLIKLARNI RIVOJLANISH XAVFI OMILLARI BO'LGAN BEMORLARDA NEVROLOGIK KO'RSATKICHLARNI O'RGANISH VA ULARNING TEXNOGEN VA TABIIY YUKGA BOG'LIQLIGI**

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✓ **Rezyume**

*Miya qon aylanishi etishmovchiligining dastlabki shakllarining rivojlanishi uchun xavf omillari mavjud bo'lgan mehnatga layoqatli bemorlarda endonazal elektroforezning kompleks rehabilitatsiya dasturlarida tanakan eritmasidan (EGb 761) radonli vannalar bilan birgalikda foydalanish serebrovaskulyar falokatlarining oldini olishning samarali yuqori samarali xavfsiz usuli hisoblanadi*

*Kalit so'zlar: miya qon ta'minoti etishmovchiligining dastlabki shakllari, tanakan (EGb 761), endonazal elektroforez, radon vannalari*

**STUDY OF NEUROLOGICAL INDICES IN PATIENTS WITH RISK FACTORS FOR CEREBROVASCULAR DISEASES USING BALNEOTHERAPEUTIC CORRECTION AND THEIR DEPENDENCE ON ANTHROPOGENIC AND NATURAL LOAD**

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## ✓ *Resume*

*In patients of working age with the presence of risk factors for progression of early forms of cerebral circulatory insufficiency the use of endonasal electrophoresis of tanacan solution (EGb 761) in combination with radon baths in complex rehabilitation programmes is an effective highly efficient safe method of cerebrovascular catastrophe prevention*

*Key words: early forms of cerebral blood supply insufficiency, tanacan (EGb 761), endonasal electrophoresis, radon baths*

## Relevance

The uniqueness of natural and climatic conditions of the Republic of Bashkortostan combined with the peculiarities of industrial development determines the diversity of origins and risk factors of cerebrovascular diseases. Due to the presence of unique natural and anthropogenic factors in the republic there are wide opportunities for prevention and treatment of cerebral vascular diseases [2].

Therapeutic mechanisms of such balneotherapeutic rehabilitation technologies as radon, iodobromic and carbon dioxide baths are used in angina pectoris, IBS, metabolic syndrome, postinfarction rehabilitation of patients after cerebral stroke or myocardial infarction. According to various research views, they have antioxidant, sedative, homeostasis-regulating, antiaggregant, antihypoxant, metabolic, hypolipidemic, etc. effects in cerebral vascular diseases [3, 10].

The purpose of our research was to study at the outpatient stage of medical rehabilitation in the conditions of 4 districts of the Republic of Bashkortostan the influence of balneotherapeutic preformed factors on the possibility of correction of neurological disorders in patients with early initial manifestations of cerebral circulatory insufficiency and risk factors of cerebrovascular catastrophes.

## Materials and methods

Clinical and neurological manifestations of early forms of cerebral circulatory insufficiency in 100 patients of working age were analysed in dynamics at the outpatient stage of medical rehabilitation in 4 districts of the republic. When applying to an outpatient clinic, the predominant number of patients (76%) complained of increased fatigue when doing their work in their speciality, a feeling of heaviness in the head, headaches, more often against the background of normal blood pressure, head noise, photopsia, decreased working memory and attention, disturbance of sleep structure, unreasonable change of mood background. Predominantly middle-aged patients with the above-mentioned complaints showed symptoms of cranial nerve function insufficiency, impaired coordination of movements, anisoreflexia of tendon and periosteal reflexes, some pseudobulbar reflexes. All this allowed us to diagnose the initial manifestations of cerebral circulatory insufficiency and the first stage of dyscirculatory encephalopathy in our observed patients, which was subsequently confirmed by instrumental diagnostic methods (reoencephalography, ultrasound dopplerography of the main arterial vessels of the head).

Three clinical groups were subjected to the randomised study:

Group 1 - 25 patients with initial manifestations of cerebral circulatory insufficiency in the vertebrobasilar basin against the background of atherosclerosis of the main cerebral vessels from the agricultural area of the Republic of Bashkortostan (Salavatsky district), where the local population is dominated by exposure to various herbicides and drinking water with a high degree of mineralisation (hardness). Patients of this group on the background of basic therapy received general radon baths every other day, endonasal electrophoresis of 5% solution of tanakan (EGb 761), which was administered from the anode [1, 5]. The course of 10 procedures every other day (№10);

Group 2 - 25 patients with clinical manifestations of I-II degree dyscirculatory encephalopathy, atherosclerosis of the main vessels of the brain and the presence of an aggravated premorbid allergic background in the form of chronic bronchitis with asthmatic component from the leading oil-producing region of the Republic of Bashkortostan (Krasnokamsky district), where organic products of benzene series (phenol-formaldehyde, heavy hydrocarbons, mineral and organic dust) have a harmful effect on the organism. Patients of this group against the background of basic therapy received carbon dioxide baths every other day, endonasal electrophoresis of 2% cerulloplasmine solution administered from the anode [4, 7]. The course of 10 procedures every other day (№10);

Group 3 - 25 patients with initial manifestations of cerebral circulatory insufficiency and dyscirculatory encephalopathy of the first degree, living in the mining region of the Republic of Bashkortostan (Uchalinsky district), where there is a pronounced environmental load on the body of industrial and man-made harmful substances in the form of heavy metals (zinc, copper, iron, sulphur, antimony, etc.) and psychoemotional stress. Patients in this group received iodobromic baths every other day against the background of basic therapy, endonasal electrophoresis of 5% cerebrolysate solution, which was administered for the first six days from the anode, the next four days from the cathode [6, 8]. The course was 10 procedures every other day (№10).

Control group - 25 people, residents of the Karaidelsky district of the Republic of Bashkortostan, where there is a pristine ecology in the form of "Ural taiga area", complete absence of natural and anthropogenic factors and agrarian sector of the economy; practically healthy individuals without risk factors. Patients of this group on the background of basic therapy received freshwater baths every other day, endonasal electrophoresis of distilled water, which was administered from an anode. The course of 10 procedures every other day (№10).

### **Results and discussions**

Our screening of the dynamics of neurological manifestations in the examined patients revealed the best dynamics of neurological parameters in group 1 of patients when radon baths and endonasal electrophoresis with tanacan solution (EGb 761) were included in the complex of basic therapy.

From the obtained data we can see that the inclusion of rehabilitation programme No. 3 with a course of general iodobromic baths and endonasal electrophoresis with cerebrolysate solution in the complex treatment of the examined patients improves neurological parameters only to some extent, which, however, are far from normal, control values ( $P \leq 0,05$ ).

The results of our study indicate that the inclusion of rehabilitation programme No. 2 with a course of carbon dioxide baths and endonasal electrophoresis with ceruloplasmine solution in the complex treatment of the examined patients also to some extent improves neurological parameters as in group No. 1, but their results only reach subcontrol values, which insignificantly improves neurological parameters ( $P \leq 0,05$ ).

We found the best dynamics of neurological parameters in group 1 of patients when a course of radon baths and endonasal electrophoresis with tanacan solution (EGb 761) was included in the treatment (rehabilitation programme №1). In this case, a pronounced positive dynamic of neurological parameters is revealed immediately after treatment and prolonged in six months after the course of treatment ( $P \leq 0,05$ ).

Thus, inclusion of such highly effective technologies of medical rehabilitation on the basis of preformed physical factors as radon baths and endonasal electrophoresis with tanacan solution into the complex of rehabilitation measures against the background of conventional therapy in patients of working age with proven risk factors of cerebrovascular catastrophes formation significantly improves neurological parameters. The above-mentioned parameters reached control values exactly in group 1 patients when radon baths and endonasal electrophoresis with tanacan solution (EGb 761) were included in the course of treatment ( $P \leq 0,05$ ).

The conducted treatment with the inclusion of radon baths and endonasal electrophoresis with tanacan (EGb 761) will lead to the prevention of ischaemic disorders in the vessels of the microcirculatory channel and ultimately will be a guarantee of the absence of the threat of development of life-threatening cerebrovascular catastrophes. An important fact was the detection of prolongation of the effect in 6 months after the course of treatment, which indicates the necessity of expediency of multiplicity and repeated procedures of non-medication orientation, which is safe in terms of the absence of pharmacological aggression, the presence of multivalent drug allergy, economically low-cost. We have revealed a direct correlation ( $r=0,11$ ) with functional indicators of cerebral blood flow dynamics in group 3 patients revealed by ultrasound duplex scanning of the main arteries of the head (linear blood flow velocity, Vm growth rate in the middle cerebral artery basin and other indicators).

In patients of all three groups, clinically predominantly in group 1, after treatment we observed a decrease in the severity of noise in the head, fatigue, headache, memory impairment, dizziness, sleep disturbance, normalisation of blood pressure indices, improvement of mood.

### Conclusion

The data of our study show that rehabilitation measures are most effective in those areas of residence, where the impact of negative anthropogenic and anthropogenic factors is minimal (Salavatsky district) and less effective in places of residence and professional activity associated with a large anthropogenic impact and natural unsettledness (Uchalinsky and Krasnokamsky districts).

Thus, the use of endonasal electrophoresis of tanacan solution (EGb 761) in combination with radon baths in complex rehabilitation programmes in patients of working age with the presence of risk factors for progression of early forms of cerebrovascular insufficiency is an effective highly efficient safe method of prevention of cerebrovascular accidents. It can find wider application both at the sanatorium-resort and outpatient-polyclinic stage of medical rehabilitation.

### LIST OF REFERENCES:

1. Borisova N.A. Endonasal electrophoresis with tanakan in the treatment of early forms of cerebral vascular diseases / N.A. Borisova, A.S. Rakhimkulov, R.M. Khaziakhmetov, R.Kh. Nigmatullin // Proceedings of the international conference of young scientists "Medical Science - 2012", dedicated to the year of safe childhood and strengthening family values, 80th anniversary of BSMU, 10th anniversary of the RB MedBash, the day of the medical worker - Ufa: "Printed house" IP Verko, 2012. - P.57-61.
2. Borisova N.A. Vascular diseases of the brain in Bashkortostan / N.A. Borisova, A.S. Rakhimkulov // *Vatandash*. - 2018. - № 11(266). - P. 57-60.
3. Gorbunov F.E. Svetovacuum pulse therapy in combination with radon therapy in the treatment of patients with cervical dorsopathy / F.E. Gorbunov, S.N. Vygovskaya, M.B. Nuvakhova, A.V. Dubovsky, D.Yu. Penonzhkevich // *Physiotherapist*. - 2013. - № 6 - P. 10-15.
4. Rakhimkulov A.S. Organisational aspects and results of treatment of initial forms of cerebrovascular diseases with ceruloplasmin / A.S. Rakhimkulov, N.A. Borisova, V.P. Kachemayev, G.N. Avertsev // *Medical Bulletin of Bashkortostan*. 2009. - № 2. – P. 72-74.
5. Rakhimkulov A.S. Results of treatment of patients with initial manifestations of cerebral blood supply insufficiency. / A.S. Rakhimkulov, Z.F. Mavlyanova // *EPRA International Journal of Research and Development (IJRD)*. Volume: 10 | Issue: 3 | March 2025 – P.173-175.
6. Rakhimkulov A.S. Analysis of results of the treatment of patients with beginnings manifestations of cerebral circulatory insufficiency / A.S. Rakhimkulov, Z.F. Mavlyanova // *Journal of neurology and neurosurgical research* 2025 Vol. 6 No. 3 P. 31-33.
7. Rakhimkulov A.S. Results of treatment of patients with initial forms of cerebrovascular diseases / A.S. Rakhimkulov, Z.F. Mavlyanova // *Journal «New Day in Medicine»*, Buhoro 2025 № 3(77). P. 243-246.
8. Khaziakhmetov R.M. Endonasal electrophoresis with ceruloplasmin; cerebrolysate and tanakan in vascular diseases of the brain. / R.M. Khaziakhmetov, A.S. Rakhimkulov, A.S. Rizvanova Collection of scientific papers of the conference of scientists RB // *Scientific Breakthrough 2003*, dedicated to the year of sport and healthy lifestyle, the day of the Republic -Ufa: Izd. - vo BSMU, 2003 - P. 154 - 158.
9. Shaygardanova E.M. Application of dry carbon dioxide baths in metabolic syndrome and postinfarction rehabilitation of patients in sanatorium conditions. - *Methodical recommendations*. -Ufa, 2007. - 24 p.

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