

Hirudotherapy in the treatment of patients with non-traumatic intracerebral hemorrhages

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Abstract.

Acute cerebrovascular accident (ACVA) because of the high prevalence, morbidity and mortality is one of the most actual problems of modern medicine. In order to identify the most optimal conservative treatment stroke, hematoma small volume we examined 30 patients with stroke, which in the rehabilitation period, were treated by medical leeches. The study, which assessed overall and neurological status of the patient, as well as held constant blood pressure monitoring, we have a noticeable stabilization of vital signs were detected, an improvement of neurological and general condition of patients on 3th day of hirudotherapy.

Keywords: arterial hypertension, stroke-hematoma, rehabilitation, hirudotherapy

Notravmatik miya ichi qon quyilishlarini davolashda girudoterapiya

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Annotatsiya.

Bosh miya qon aylanishining o'tkir buzilishi (BMQAO'B) yuqori tarqalganlik, nogironlik va o'lim holatlari tufayli zamonaviy tibbiyotning eng dolzarb muammolaridan biridir. Kichik hajmli insult-gematomalarni reabilitatsiya qilishning eng maqbul konservativ usullarini aniqlash uchun biz reabilitatsiya davrida tibbiy zuluklar bilan qo'shimcha davolanishdan o'tgan 30 nafar bemorni tekshirdik. Taqqoslash guruhi sifatida kichik hajmdagi insult-gematomasi bo'lgan 32 bemor olindi, ularni davolash dalillarga asoslangan tibbiyot algoritmlariga muvofiq amalga oshirildi. Bemorning umumiy holati va nevrologik holatini

baholangan, shuningdek, qon bosimining doimiy monitoringini o'tkazilgan tadqiqot davomida girudoterapiyaning 3-kunida biz hayotiy ko'rsatkichlarning sezilarli turg'unlashishini, bemorlarning nevrologik va umumiy holatini yaxshilashni aniqladik.

Kalit so'zlar: arterial gipertenziya, insult-gematoma, rehabilitatsiya, girudoterapiya

Гирудотерапия в лечении больных с нетравматическими внутримозговыми кровоизлияниями

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Аннотация.

Острые нарушения мозгового кровообращения (ОНМК) ввиду высокой распространённости, инвалидизации и летальности являются одной из наиболее актуальных проблем современной медицины. С целью выявления самых оптимальных консервативных методов реабилитационного лечения инсульт-гематом малого объёма нами было обследовано 30 больных с ОНМК, которым в реабилитационном периоде проводилось дополнительное лечение медицинскими пиявками. В качестве группы сравнения взяли 32 больных с инсульт-гематомами малого объёма, лечение которым проводилось в соответствии с алгоритмами доказательной медицины. В ходе исследования, в котором оценивалось общее состояние и неврологический статус пациента, а также проводился постоянный мониторинг артериального давления, нами было выявлена заметная стабилизация жизненных показателей, улучшение неврологического и общего состояния больных на 3 сутки гирудотерапии.

Ключевые слова: артериальная гипертония, инсульт-гематома, реабилитация, гирудотерапия

Actuality. Intracerebral hemorrhage (ICH) is one of the most common pathologies. Mortality in stroke hematomas remains high and reaches 40% [1, 4]. According to studies, it is associated with the degree of depression of consciousness according to the Glasgow coma scale, hematoma volume, break-

through of blood into the ventricles of the brain, and the age of patients [2].

Early diagnosis and treatment of acute disorders of cerebral circulation due to the high prevalence, disability and mortality from stroke is one of the most important medical and social problems of modern society. Although hemorrhagic stroke (HI) accounts for only 15% in the structure of stroke, it is the most dramatic of all cerebrovascular processes in terms of the severity of development, course, and outcome of the disease. The most common form from this group (in 80,8% of cases) is non-traumatic intracerebral hemorrhage (NICH), characterized by sudden extravasation of blood into the brain parenchyma. NICH is characterized by a high level of mortality and disability, the occurrence at a younger age than with ischemic stroke [1, 3].

Small ICHs of supratentorial localization can clinically proceed as a cerebral hypertensive crisis, ischemic stroke or transient ischemic attack, and also have an asymptomatic course [4].

Aim of research. Evaluation of the effectiveness of hirudotherapy in the prevention and long-term rehabilitation treatment of hemorrhagic stroke.

Material and methods. From 2022 to 2023 30 patients with stroke hematomas of a small volume (control group) aged 44 to 65 years were examined, of which 17 men and 13 women were admitted to the Andijan branch of the Republican Scientific Center for Emergency Medical Care in the first 48 hours from the onset of the disease.

The comparison group consisted of 32 patients aged 43 to 61 years, including 18 men and 14 women, who also entered the Andijan branch of the Republican Scientific Center for Emergency Medical Care on the first day from the onset of the disease.

The average score on the Glasgow scale left 13-15 points.

The severity of neurological deficit in patients with small hematomas at admission on average for the group was 6 points on the NIH stroke scale, the index of activity of daily life on the Bartel scale was 48 points.

To objectify the degree of severity of existing clinical symptoms and assess the severity of the patient's condition upon admission and in dynamics, the following scales were used:

1. NIH Stroke Scale
2. Modified Rankin scale.
3. Frankel conduction disturbance rating scale.

In addition to the standard clinical examination, each patient underwent constant monitoring of blood pressure + ECG.

The localization and nature of changes in the brain diagnosed clinically were specified by the data of M-Echo and CT of the brain.

When analyzing CT and M-Echo, the localization, volume of the hematoma, the degree of displacement of brain structures, and other concomitant changes were determined.

During the examination of 30 patients with small hypertensive intracerebral stroke hematomas of hemispheric localization in half of the patients (50%) they were located in the left hemisphere of the brain, and the rest - in the right hemisphere (50%). According to the level of impaired consciousness upon admission, the patients were distributed as follows: clear consciousness - 1 (8.3%) patient, moderate stunning - 3 (25.0%), deep stunning - 5 (41.6%), stupor - 2 (16.6%), moderate coma - 1 (8.3%). Apoplektiform variant of the course was observed in 7 (58.3%) patients. A progressive course with gradual depression of consciousness and an increase in neurological deficit was observed in 3 (25.0%) patients, in 2 (16.6%) patients the disease proceeded with the progression of neurological deficit without depression of consciousness. In relation to the internal capsule, intracerebral hemorrhages in patients were distributed as follows:

Table 1.

Distribution of stroke hematomas by location

Localization of ICH	Number of patients, % (n=30)
Lateral	10 patients (36,7%)
Medial	8 patients (23,3%)
Mixed	8 patients (30%)
Lobar	4 patients

All patients included in the study suffered from arterial hypertension (AH). The duration of AH varied from 2 to 30 years.

In the majority of patients (60%), this cerebrovascular accident was the first. The remaining patients (40%) received information about the recurrence of cerebrovascular accident. This group included 7 patients with cerebral hypertensive crises, accompanied by rises in blood pressure, headache, dizziness, vomiting, poor general health, and 4 patients who had a history of cerebrovascular accident, accompanied by focal neurological symptoms of a different nature.

Table 2.

Distribution of patients with stroke according to the degree of arterial hypertension

AH degree	Number of patients, % (n=30)
I (140-159/ 90-99 мм рт.ст.)	3 (10%)
II (160-179/ 100-109 мм рт.ст.)	12 (40%)
III ($\geq 180/ \geq 110$ мм рт.ст.)	15 (50%)

To objectify the severity of existing clinical symptoms and assess the severity of hemorrhagic stroke, the National Institute of Health Stroke Scale [NIHSS] was used.

The NIHSS scale with a range of values from 0 to 36 points (the norm is 0 points) assesses the severity of disorders of consciousness, higher cortical functions, cranial innervation (dysarthria, paresis of mimic muscles), motor, coordinating and sensory functions.

In the neurological status of patients with small ICHs, the following were noted: motor disorders - in 29 patients, speech disorders - in 18 patients (60%), dysarthria in 12 (66.7%), sensitivity disorders - in 24 patients (80%), disorders of the innervation of cranial nerves – in 27 patients (90%).

Results and discussion. In the control group, along with the traditional therapeutic approach (dehydration, absorbable therapy), hirudotherapy was carried out in a complex manner. Treatment with medicinal leeches was started on the 10-14th day of therapy for cerebrovascular accident (in 78% of cases - after discharge from the hospital).

Table 3.

Assessment of the condition of patients on the Frankel scale on the 3rd day of hirudotherapy.

	Control group (3 days of hirudotherapy)	Comparison group (hirudotherapy was not performed)
A	-	3
B	3	6
C	8	12
D	17	9
E	7	2

Conducted a standard course of hirudotherapy (5-7 days). Leeches were applied in the projection of the vertebral and temporal arteries 1-2 times a day. Regarding the comparison group, already on the 3rd-4th day, stabilization of

blood pressure and the general condition of the patient, as well as a noticeable improvement in the neurological status of the patient, were noted.

Conclusions.

1. Small hypertensive supratentorial intracerebral hemorrhages are a special form of cerebrovascular accident. Small stroke hematomas most often develop in arterial hypertension with a long crisis course and are accompanied by a clinical picture of acute stroke with reversible or persistent neurological disorders.

2. For the speedy rehabilitation and early activation of patients with intracerebral hemorrhages of a small volume at the post-hospital stage, it is advisable to treat with medicinal leeches.

Used literature:

1. Dayer M, Işık B, Kılınç F. Lichen Planus Due to Hirudotherapy. *Turkiye Parazitolojisi Dergisi*. 2021 Jun 7;45(2):149-152. English. doi: 10.4274/tpd.galenos.2020.7066. PMID: 34103294.
2. Gunawan F, Wibowo YR, Bunawan NC, Turner JH. Controversy: hirudotherapy (leech therapy) as an alternative treatment for osteoarthritis. *Acta Med Indones*. 2015 Apr;47(2):176-80. PMID: 26260562.
3. Heinz P, Tvrđý P, Pink R, Dvořák Z, Michl P. Hirudotherapy in reconstructive surgery: case-reports and review. *Acta Chir Plast*. 2020 Winter;62(3-4):95-102. English. PMID: 33685203.
4. Isakov B. M., Mamadaliev A. B. Hirudotherapy in the Rehabilitation of Patients with Acute Cerebrovascular Accident //Eurasian Scientific Herald. – 2022. – T. 8. – C. 81-83.
5. Jha K, Garg A, Narang R, Das S. Hirudotherapy in Medicine and Dentistry. *J Clin Diagn Res*. 2015 Dec;9(12):ZE05-7. doi: 10.7860/JCDR/2015/16670.6918. Epub 2015 Dec 1. PMID: 26817000; PMCID: PMC4717768.
6. Mamadaliev, A. B., Isakov, B. M., Mirzayuldashev, N. Y., Davlatov, B. N., & Isakov, K. B. (2022). Results of Surgical Treatment of Stroke Intracerebral Hematomas. *Eurasian Journal of Research, Development and Innovation*, 8, 14-17.
7. Mamadaliev, A. R., Davlatov, B. N., Tashlanov, F. N., Shukurov, S. V., & Mamadaliev, A. B. (2023). Surgical treatment of traumatic intracerebral hematomas. *British Medical Journal*, 3(3).

8. Nair HKR, Ahmad NW, Lee HL, Ahmad N, Othamn S, Mokhtar NSHM, Chong SSY. Hirudotherapy in Wound Healing. *Int J Low Extrem Wounds*. 2022 Dec;21(4):425-431. doi: 10.1177/1534734620948299. Epub 2020 Aug 20. PMID: 32815407.
9. Tashlanov, F. N., Kariev, G. M., Khakimov, M. N., & Mamadaliev, A. B. (2021). Dislocation syndrome in brain tumors (Literature review). *Central Asian Journal of Pediatrics*, 2021(2), 5-15.