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HIRUDOTHERAPY AS A METHOD OF TREATMENT OF ARTERIAL HYPERTENSION

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ГИРУДОТЕРАПИЯ КАК МЕТОД ЛЕЧЕНИЯ АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИИ

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Аннотация. В обсуждаемой статье рассматриваются вопросы лечения артериальной гипертензии с помощью гирудотерапии. Автор статьи считает, что при артериальной гипертензии широко используется лечение гирудотерапией (пиявками). Замечено, что проведение гирудотерапии изменяет реактивность организма, в результате повышается чувствительность к проводимой гипотензивной медикаментозной терапии. Компоненты пиявочного секрета, противоишемическое влияние и разгрузка кровотока позволяют снизить дозировку применяемого препарата. Лечение гипертонической болезни пиявками практически всегда улучшает самочувствие и объективное состояние пациента, хотя результаты терапии во многом зависят от причины гипертензии, длительности и интенсивности курса, правильного выбора точек приставки.

Abstract. The article under discussion deals with the treatment of arterial hypertension with the help of hirudotherapy. The author of the article believes that treatment with hirudotherapy (leeches) is widely used for arterial hypertension. It is noticed that carrying out of hirudotherapy changes reactivity of an organism, as a result sensitivity to carried out hypotensive medicament therapy increases. Components of a leech secretion, anti-ischemic influence and unloading of a blood flow allow to reduce a dosage of the applied drug. Treatment of hypertension by leeches practically always improves the well-being and objective condition of the patient, though results of therapy largely depend on the reason of hypertension, duration and intensity of the course, a correct choice of attachment points.

Ключевые слова: артериальная гипертензия, гирудотерапия, пиявки, реактивность, организм, медикаментозная терапия, дозировка, интенсивность курса.

Keywords: arterial hypertension, hirudotherapy, leeches, reactivity, body, drug therapy, dosage, course intensity.

Discussion

Cardiovascular diseases remain the most common chronic diseases, increasing mortality and worsening prognosis of life. Arterial hypertension (AH) is the main risk factor for cardiovascular complications. About 20% of the world's population is hypertensive, which is more than 1 billion people [1].

The term "arterial hypertension" (AH) refers to the syndrome of increased blood pressure in hypertension and symptomatic arterial hypertension. In AH there is an increased likelihood of diabetes mellitus, myocardial infarction, acute impairment of cerebral circulation, heart failure.

Signs of hypertension - headache, especially in the back of the head, dizziness, fatigue, weakness, decreased efficiency, mood swings. Many people mistake these symptoms for fatigue, not even suspecting that they have high blood pressure. Getting used to feeling ill and depressed, they try not to notice it. Meanwhile, their hypertension progresses. Only years later some of them go to the doctor, being surprised to learn that the disease has already taken quite a serious form. Hypertension can develop in people who are not only older, but even younger. Impaired regulation of blood pressure can occur as a result of nervous and mental stress, hemodynamic disorders, due to kidney disease or the presence of hormonal imbalance. Often the causes of the disease are mixed. AH is promoted by so-called risk factors: smoking, sedentary lifestyle, unhealthy diet, frequent drinking, obesity, diabetes, hypertension in close relatives [2].

For the treatment of high blood pressure traditional medicine offers several groups of drugs. Hirudotherapy for hypertension is a safe and effective alternative to pills and injections created by nature. One of the first documentary evidence of its use is a painting in an Egyptian tomb dating back to about 1,500 B.C. References to the use of leeches are found in ancient texts from Persia, India and the Middle East. In the first century A.D. the ancient Roman scholar Pliny the Elder drew attention to the beneficial effects of the use of leeches. Claudius Galen and Aetius made a significant contribution to the study of leeches. Avicenna's "Canon of Medicine" also described in detail the use of hirudotherapy. In the Middle Ages, this method of treatment declined somewhat due to religious restrictions on the use of bloodletting techniques. During the Renaissance period, treatment with leeches received a new impetus to development, spread widely in Europe and reached its greatest development in the sixteenth and eighteenth centuries. During this period, leeches were used mainly for bloodletting, which was considered one of the universal therapeutic methods. At the beginning of the XXth century, after the discovery of the role of microorganisms in the etiology of diseases and the beginning of the era of antibiotics, in general medical practice treatment with leeches began to be perceived as an archaic method of treatment. But in 1970-s, after discovery and description of biologically active substances, contained in the saliva of medical leeches, this method of treatment began to develop actively again, and hirudotherapy became widely used in plastic, reconstructive surgery, microsurgery and traumatology as an effective means to improve the local microcirculation. Studies showed that the enzyme hirudin contained in the worms' saliva is a powerful anticoagulant, preventing blood clotting. Since then, hirudotherapy has been used on a scientific basis [3].

The therapeutic effect of hirudotherapy for hypertension is achieved through a combination of the biological activity of the worms' saliva, blood loss and the body's response to the procedure. Each leech sucks from 5 ml to 15 ml of blood per session, after which the bleeding lasts for several hours. Reducing the volume of circulating blood helps to reduce blood pressure, while the bite and blood loss stimulate the immune system and activate hematopoiesis.

The main therapeutic effect is produced by the saliva of the leech, which enters the patient's body during the bite. Its biochemical composition is not fully studied, but the main active substances are known. Salivary glands of ringworms produce about 100 different enzymes, the table 1 describes the most useful and effective in hypertension.

Scientists of different countries (the largest researchers of hirudotherapy as a non-drug method of treatment at present are A. V. Chernukh, G. I. Nikonov, A. G. Abuladze, S. L. Zaslavskaya, I. N. Shishkina, V. V. Savinova, I. P. Baskova, G. R. Iskhanyan, O. Y. Kamenev, Kh. A. Allayarov and others) established that the range of application of hirudotherapy in medicine provides "the maintenance in saliva of leeches besides hirudin of inhibitors of trypsin and plasmin, inhibitors of alpha-chymotrypsin, chymosin, subtilisin and neutral granulocyte proteases - elastase

and cathepsin C, inhibitor of factor Ha clotting and blood plasma callicrein, highly specific ferments: hyaluronidase, destabilase, apyrase, collagenase, as well as a number of compounds of not yet studied nature, such as leech prostanoids, histamine-like substances and a number of others". As V. A. Savinov (2002) noted interpretation of their biological action is extremely difficult already because each of these substances, taken separately, "is capable to induce the cascade of events in system of an internal environment of an organism and to support its constancy (homeo-stasis), and first of all at a level of a vascular wall, in hemostasis and immune systems" [4].

Table

THE MOST USEFUL AND EFFECTIVE ENZYMES
IN THE TREATMENT OF HYPERTENSION

<i>Title</i>	<i>Mechanism of action</i>
Girudin	Once in the bloodstream, it forms an inactive complex with thrombin, the blood factor responsible for blood clotting. It has anticoagulant effect, preventing platelet adhesion.
Apiraza	Increases the activity of cholesterol-breaking enzymes. It plays a major role in the treatment of hypertension caused by atherosclerosis.
Orgelaza	It acts directly on the vessels, smoothing and strengthening their inner walls. It also promotes the expansion of the capillary network due to the formation of new capillaries. As a result the blood flow is activated, the nutrition of tissues is improved.
Destabilase	A complex enzyme whose components thin the blood, as well as dissolve existing blood clots.
Hyaluronidase	Enhances the effectiveness of hirudin, increasing the permeability of tissues and accelerating its distribution in the body.
Eglines	A group of protein compounds that attenuate the inflammation that accompanies vascular disease.
Histamine-like substance	Provides increased blood flow to the bite site due to local inflammatory reaction. It has antispasmodic effect - dilates blood vessels and lowers pressure.

The main advantage of treatment of hypertension with leeches before drug therapy is the rapid positive effect:

- after the first procedure headaches and dizziness disappear, patients note a general improvement in well-being and mood;
- after 3-4 sessions, the blood pressure falls to normal values, edema disappears, and the sensation of lack of oxygen and shortness of breath disappears;
- after the completion of therapy, blood pressure stabilizes completely, all symptoms of hypertension disappear, weight loss in patients with excessive weight.

The duration of treatment and the number of sessions are determined individually. For moderately severe pathology, 6-8 procedures at an interval of several days are enough, but in severe cases at least 10-12 procedures are required. The recovery period between courses is from 2 months.

Hirudotherapy is safer than taking special hypotensive drugs. It gives no side effects, is indispensable in case of allergy to pills and injections, but there are contraindications to treatment of hypertension with leeches: 1) intolerance to hirudin and other components of the saliva; 2) pregnancy (there is a possibility of bleeding and miscarriage); 3) anemia and thrombocytopenia (deficiency of hemoglobin and platelets); 4) malignant tumors of any localization; 5) reduced blood clotting, hemophilia; 6) low blood pressure (hypotension) [2].

Conclusion

Thus, hirudotherapy is one of the most ancient methods of treatment of various pathological conditions, influencing rheological properties of blood, lipid metabolism and immune system of the

person. Treatment with leeches leads to diverse and versatile effects, the main of which are anti-ischemic, neuroprotective, anesthetic, anti-inflammatory' and bactericidal. According to the data of researches carried out when using hirudotherapy in different fields of medicine (neurology, neurosurgery, cardiology), hirudotherapy has minimal contraindications and side effects, which is very important for elderly and senile patients.

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