

## HIRUDOTHERAPY BY AVICENNA'S METHODS IN TREATMENT OF CHRONIC HEART FAILURE AT ISCHEMIC HEART DISEASE PATIENTS WITH THE INCREASED ARTERIAL BLOOD PRESSURE

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### ABSTRACT

Now the principles of drug treatment of the chronic heart failure (CHF) meaning normalization of an intracardial and central hemodynamics, microcirculation, activity of neurohumoral systems of an organism, prevention and therapy of disturbances of a heart rhythm, sudden cardiac death, thromboembolic syndrome are defined (Belenkov Yu. A., Mareev V. Yu., 2000; Braunvald E. et al., 2005). Wide use of ACE inhibitor, blockers of adrenergic receptors, diuretics allowed to improve considerably quality and life expectancies of patients with chronic heart failure. Despite obvious achievements of the last years in

the field of studying of a pathogeny, diagnostics and treatment, chronic heart failure remains widespread, heavy and predictively an adverse complication of many diseases of a cardiovascular system (Almazov V. A., Shlyakhto E. V., 2001; Cleland J., 2004). The prevalence of chronic heart failure constantly grows and is in the European population from 0.4% to 2% (Cowie M. R. et al., 1997). In Russia in 2002 revealed more than 8 million patients with clinical manifestations of chronic heart failure (Belenkov Yu. N and coav., 2003).

**KEYWORDS:** Hirudotherapy, intracardial, hemodilution, hepatomegalias, hemostasis, acrocyanosis.

In recent years became more active to be applied the non-drug methods of treatment of chronic heart failure based on impact on an organism by electromagnetic radiation (laser therapy, therapy by waves of millimetric range), extracorporeal removal of components of blood (hemodilution, blood ultrafiltration), synchronization of work of auricles and ventricles of heart, surgical correction of pathology of heart, influence as a secret of sialadens of a

bloodsucker and others (Baskova I. P.,-2003; Korochkin I.M., 2001; Bart of VA., Boyle A., Bank A.J., 2005; Constanzo \M.R. et al., 2007).

Numerous data confirm high performance of hirudotherapyat treatment of various diseases. Positive action of hirudotherapyon the clinical current of chronic heart failure is well studied. In many works reduction of a acrocyanosis, pant, hypostases, hepatomegalias is revealed at course treatment by medical bloodsuckers (Baskova I. P., 2006; We Promise N.I. 2003). At patients with coronary heart disease, the arterial hypertension noted positive action of hirudotherapyon indicators of the central hemodynamics, variability of a warm rhythm, a lipidic range of blood, fibrinogen level, functional activity of thrombocytes (Pine-forest E.P. Sviridkina L.P., 2006; Magk\gags of P., 2002). At the same time at purpose of hirudotherapysick chronic heart failure did not carry out the tool assessment of systolic and diastolic function of a myocardium of a left ventricle, a condition of a system of a hemostasis that does the offered subject relevant.

### **Research objective**

To estimate influence of hirudotherapyon a clinical current of chronic heart failure, at patients with coronary heart disease with the raised ABP.

### **Research problems**

1. To estimate influence of hirudotherapyon clinical manifestations of chronic heart failure at patients with the raised ABP.
2. To estimate influence of hirudotherapyon indicators of systolic and diastolic function of a left ventricle at ischemic heart disease patients with chronic heart failure and the normal ABP.
3. To estimate influence of hirudotherapyon indicators of systolic and diastolic function of a left ventricle at ischemic heart disease patients with chronic heart failure and an arterial hypertension.
5. To estimate influence of hirudotherapyon hemostasis indicators at ischemic heart disease patients with chronic heart failure and an arterial hypertension.

### **MATERIALS AND METHODS OF A RESEARCH**

100 patients with chronic heart failure of the II-III functional class on classification of NYHA aged from 55 till 77, 80 men and 20 women are investigated. From them at 71 patients II functional class chronic heart failure, at 29 - the III FC chronic heart failure was revealed.

Development of chronic heart failure was the reason: postinfarction cardiosclerosis (78 patients) and fine-focal cardiosclerosis (22 patients). The diagnosis was established on the basis of a clinical picture of a disease, the anamnesis, data of definition of a distance of six-minute walking. The arterial hypertension was diagnosed for 54 patients.

Patients with diseases of the blood, connective tissue, an oncopathology, a hemorrhagic syndrome, a diabetes mellitus of the I type expressed by renal and hepatic pathology did not join in a research. Patients were observed in out-patient conditions and after receiving the informed consent were distributed by means of draw on two groups: the 1st group - 70 patients receiving hirudotherapy course, the 2nd group (control) - 30 patients who were not receiving treatment by medical bloodsuckers. Depending on existence of an arterial hypertension in the anamnesis patients of both subgroups were divided into two subgroups (Table 1). Groups of patients were comparable on age, existence of associated diseases and the accepted medicinal therapy.

Standard therapy of chronic heart failure included APF inhibitors, blockers of beta adrenergic receptors, diuretics, acetylsalicylic acid. During observation of a dose of medicines did not change.

The technique of carrying out hirudotherapy at patients with chronic heart failure included use not less than 5 pieces of medical bloodsuckers on one procedure by Abu Ali ibn Sino's methods. The number of procedures was 10 sessions at an interval of the 2 days. hirudotherapy renders the reflexogenic, anti-coagulating, antiischemic, anti-hypoxemic, hypotensive, immunostimulating, anti-inflammatory, analgesic, anti-sclerous, regenerator action, causes aexsanguination, a dekongestion of internals, protective anti-thrombotic effect, elimination of microcirculation violations.

**Table 1: General characteristic of the studied patients.**

<b>Indicators</b>	<b>The 1st group (n = 70)</b>	<b>The 2nd group (n=30)</b>
	<b>Patients without arterial hypertension (n =36)</b>	<b>Patients with an arterial hypertension(n=20)</b>
Age	67,4±5,2	61,3±6,0
Postinfarction cardiosclerosis	28	14
Small focal cardiosclerosis	8	6
Functional class chronic heart failure:		

II	22	12
III	14	8
Therapy:		
ACE inhibitors	34	18
ATI Blockers	2	2
Beta-blockers	22	15
Diuretics	24	11
Aspirin	34	20

Before treatment and upon termination of the observation period (6 weeks) estimated a clinical condition of patients, defined a distance of six-minute walking, carried out the daily monitoring of arterial blood pressure (DMABP), ultrasound examination of heart with assessment of systolic and diastolic function of heart, hemostasis indicators. In the main group the condition of a hemostasis was estimated in addition next day after the fifth session of hirudotherapy(2-3 weeks). The assessment of a clinical course of a disease was carried out on change of manifestations of chronic heart failure (weakness, an asthma at a usual exercise stress, interruption in cardiac performance and/or heartbeat, peripheral hypostases, a hepatomegalia) and functional class chronic heart failure according to a distance of six-minute walking.

Measurement was taken through a 20-minute interval in the afternoon (from 7:00 till 23:00) and through 30-minute - at night (from 23:00 till 7:00). The index of time was defined how the percentage of number of measurements during which systolic arterial blood pressure exceeded the level of 140 mm Hg. in the afternoon and 120 mm Hg. at night, and diastolic arterial blood pressure exceeded respectively 90 and 80 mm Hg, to the total number of measurements. Were estimated average daily systolic and diastolic arterial blood pressure (in mm Hg.) and the index of time for systolic and diastolic arterial blood pressure (in %).

The test of six-minute walking was carried out in a hospital corridor which length was precisely measured. After acquaintance with the forthcoming test of the patient quietly went along the corridor. After fifteen-minute rest, the patient within 6 minutes went along the corridor, trying to overcome the longest distance. The test was stopped at emergence of the expressed discomfort (pant, dizzinesses, sharp weakness). In 30 minutes the test was repeated and took average value of two tests.

The aggregation ability of thrombocytes was studied on the two-channel laser analyzer of aggregation of thrombocytes of "Biol" (Russia) by a turbidimetric method and assessment of

the average size of platelet units in real time. As the inductor used 0.5 microns of ADF. For spontaneous aggregation normal values varied from 1.0 to 1.4 units, for ADF - the induced aggregation from 1.5 to 3.5 units.

At statistical processing of the received results standard methods of the variation analysis were used. Intergroup distinctions were estimated by confidential criterion of Stjudent. Statistical processing of the obtained data was carried out by means of the computer Excel program.

## RESULTS OF A RESEARCH AND THEIR DISCUSSION

The 1<sup>st</sup> group. Influence of hirudotherapy on the clinical course of a disease at sick chronic heart failure with the normal level of arterial blood pressure is investigated at 42 ischemic heart disease patients. To the termination of hirudotherapy improvement of a clinical state is noted at 33 patients (78.5%) that was expressed in reduction of functional class chronic heart failure according to test results of six-minute walking. The I FC chronic heart failure was diagnosed for 12 patients with initially verified IIFC chronic heart failure to the termination of a course of treatment that was followed by a tendency to increase in a distance of six-minute walking.

At patients of 2<sup>nd</sup> group: We revealed reliable decrease in systolic arterial blood pressure on average in group for 10% ( $p < 0.01$ ) and the index of time of systolic arterial blood pressure by 1.5 times ( $p < 0.05$ ) that demonstrates hypotensive effect of hirudotherapy. Reliable influence on the size of diastolic arterial blood pressure of course treatment by medical bloodsuckers is not revealed. At 5 patients after the first statement of medical bloodsuckers and at the 3<sup>rd</sup> patient after the second procedure rise in systolic arterial blood pressure on 10 - 15 mm Hg was noted. with the subsequent decrease to reference values within 30 minutes. Decrease in systolic arterial blood pressure is lower than 100 mm Hg. it is noted. In general on group reduction of systolic arterial blood pressure to the termination of a course of hirudotherapy on 5 - 20 mm Hg. it is registered at 26 of 33 patients, diastolic arterial blood pressure on 5 - 10 mm Hg. - at 18 patients.

Influence of hirudotherapy on indicators of the central hemodynamics was depending on the level of arterial blood pressure. In group of patients with an arterial hypertension reliable decrease in average daily systolic arterial blood pressure and the index of time of systolic arterial blood pressure, a tendency to reduction of size of diastolic arterial blood pressure is

revealed. The hypotensive effect of hirudotherapy was confirmed in Maksyutkin N.A. works. (2003) and Gantimurova O.G. (2005).

In case of successful treatment of heart failure at patients improvement of inotropic ability and diastolic relaxation of a myocardium is noted (Braunvald E., 2005). In group of patients with an arterial hypertension reduction of weight of functional class chronic heart failure was combined with a tendency to reduction of end-diastolic volume, reliable decrease in end-systolic volume and reliable increase in ejection fraction of a left ventricle. In our opinion it is caused by reliable decrease in size of systolic arterial blood pressure at patients in the course of treatment at the expense of what there is a reduction of postload of a myocardium. The combined reduction before - and postloads of a myocardium also leads to increase in a stroke output, fraction of exile and demonstrates improvement of pump function of heart at sick chronic heart failure with the increased ABP level.

Dynamics of diastolic filling of a left ventricle in the course of hirudotherapy was unidirectional in both groups of patients. At most of patients at whom decrease in functional class chronic heart failure was noted reduction of severity of diastolic dysfunction of a myocardium of a left ventricle was revealed. The positive effect of hirudotherapy on relaxation of a myocardium of a left ventricle at ischemic heart disease patients can be caused by anti-ischemic effect of secretion of sialadens of a bloodsucker, improvement of indicators of an intracardial and central hemodynamics. Interesting results were received when studying influence of hirudotherapy on indicators of a plasma hemostasis and functional activity of thrombocytes. We did not reveal reliable differences in the activated partial thromboplastin time, international normalized ratio level before treatment by medical bloodsuckers. On the other hand, to the termination of a course of treatment the level of fibrinogen and RKMF decreased to normal amounts that speaks about reduction of a trombinemia. We also found initial increase in spontaneous aggregation of thrombocytes in patients of the main and control groups. To the termination of a course of hirudotherapy spontaneous aggregation of thrombocytes was normalized while remained raised with patients of control group. Thus, it is possible to draw a conclusion on existence of antithrombotic effect of hirudotherapy at patients with chronic heart failure.

## CONCLUSIONS

1. Use of hirudotherapy by Abu Ali ibn Sino's methods at the same time with "standard" drug treatment is followed by reduction of clinical manifestations of chronic heart failure at

patients with coronary heart disease. At the same time the tolerance to an exercise stress (according to a distance of six-minute walking) at sick II and III functional classes of chronic heart failure increases.

2. At use of hirudotherapy in complex treatment of chronic heart failure at 25% of patients reduction of diastolic dysfunction of a myocardium of a left ventricle according to a Doppler research of heart is observed.

3. Has hirudotherapy positive impact on hemostasis indicators at sick chronic heart failure that is expressed in normalization of concentration of fibrinogen and soluble fibrin monomer complexes, increase in content of plasminogen in blood, decrease spontaneous and ADF - the induced aggregation of thrombocytes.

#### THE LIST OF THE USED LITERATURE

1. Abu Ali ibn Sino "Canon of medical science", Publishing house of "Fan", T., 1979.
2. Almazov V. A., Shlyakhto E.V. Cardiology for the general practitioner. St. Petersburg., publishing house CИГМЯ., 2001; T.1-127C.
3. Ardashev A.V., Zhelyakov E.G., Kuznetsov Yu. In, etc. Influence of the resynchronizing electrocardiostimulation on quality of life of patients with chronic heart failure. *Cardiology*, 2007; 2: 31-38.
4. Baskova I. P. Ways of improvement of a method of hirudotherapy. *Girudo* 2003. Under the editorship of Baskova I. P. – Moscow, 2003; S.Z-5.
5. Baskova I. P. Phenomenon of a medical bloodsucker. *Mat. The IX scientific and practical conference of Association of girudologists of Russia*. Balakovo, 2006; 22-23.
6. Isakhanyan G.S. About the reflex mechanism of action of hirudotherapy. Treatment by medical bloodsuckers and drugs from them. The collection of articles on materials of scientific conferences of Association of girudologists of 1992-1997 Lyubertsy. 2003. - prince 1. - Page 22-23.
7. Smirnova A.F. Experience of the combined use of hirudotherapy and girudofarmakologiya. Relevance of a post-aggressive syndrome. *Mat. The IX scientific and practical conference of Association of girudologists of Russia*. Balakovo, 2006; 51-55.
8. Smirnova L.M., Petrova R.V., Yakovleva of V.V. hirudotherapy and cardiovascular pathology. *Girudo-2003*. Under the editorship of Baskova I. P. – Moscow, 2003; 11-13.
9. Cleland J.G.F. Management of thrombosis in heart failure. *Heart Failure*.-Philadelphia: D.L.Mann-Saunders, 2004; 653-681.

10. Cleand J.G.F., Daubert J-C., Erdmann T. et al. for the Cardiac resynchronization-Heart Failure (CARE-HF) Study Investigators. The effect of cardiac resynchronization on morbidity and mortality in heart failure. *N. Engl. J. Med.*, 2005; 352: 1539-1549.