



Covid-19: Prospects for the Treatment and Rehabilitation of Post-covid Syndrome by Ayurvedic Method - Hirudotherapy

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Abstract

Has passed a year since the beginning of the pandemic in Wuhan (PRC). The number of cases around the world exceeded the mark in 100 million men. Since then, the global medical community has become much better aware of the pathogenesis of the new COVID-19 virus. On the basis of many years of research into the properties of leeches (hirudotherapy), treatment and rehabilitation of patients and patients with covid-19 coronavirus are proposed.

Keywords: COVID-19; Microthrombosis; Systemic Method of Hirudotherapy (SMH); Neurotrophic Effect; Thrombolysis; Immunomodulatory Effect; Detoxification Effect; Wave Effect; Effect of Academician Kaznacheev VP

Introduction

The coronavirus pandemic has caused unprecedented strain on health services around the world, both in terms of vaccines and treatments and rehabilitation for coronavirus patients. Observations of the tactics of the treatment of this disease around the world are in the nature of panic.

Of course, the medical community puts great trusts on vaccination. And such vaccines have already appeared, the first vaccine in the world created in Russia - it's "Sputnik-V". Vaccines are being developed and tested in other countries, such as the "Pfizer" (USA) vaccine. According to immunologists, the creation of collective immunity can stop the pandemic when the number of immunized citizens in a single country reaches at least 60%. But there are problems in this area as well.

What about the asymptomatic forms of COVID-19? How to solve the problem of vaccination in antigenic variations of the virus, for example, when a more virulent 70% of the strain found in the UK? And will vaccination cause asymptomatic disease severe complications in vaccinated?

There is no answer to these questions yet, and we have a problem that requires the stress of intellect and the work of an existing civilization.

Notably, the governments of India, China and other countries are actively promoting traditional treatments and preventions against COVID-19. The Government of India has issued a memorandum stating as potentially useful: Yoga, Ayurveda, Unani, Siddha, Homeopathy and naturopathy. It should be noted that leech is one of the branches of Ayurveda.

The Chinese government attributes the relatively rapid turnaround in this country to the integration of traditional Chinese medicine with traditional biomedicine in 90% of its patients with COVID-19. In a review of WHO's traditional medicine strategy (2014-2023), 88% of the 194 countries (that's 179 countries) recognized the need to use traditional and complementary medicine.

However, only China has harnessed the potential of traditional and интегративной медицины в борьбе с пандемией COVID-19 [2,3].

And most likely, it was this circumstance that allowed China to succeed in the fight against the pandemic.

Today we can talk about significant progress in understanding the pathogenesis of the disease COVID-19 coronavirus. And in this regard, the consolidated opinion of the Moscow Scientific Therapeutic Society, which, represented by its leader Professor A.P. Vorobyev, hypothesized POST-COVID SYNDROME, is of considerable interest.

The main provisions of this hypothesis are: POST-COVID SYNDROME - chronically leaking thrombotic willitis with the predominant damage of the nervous system (brain, autonomous and peripheral systems) and skin.

Signs of post-covid syndrome (in bold font highlighted by our additions):

- Attacks of headache (similar to migraine pain paroxysms);
- Attacks of weakness;
- Depression;
- Mood disturbance (crying);
- Disturbances of the rhythms of life (insomnia, drowsiness, change of day and night);
- Breaking thermoregulation - transient subfebrile hyperthermia, hypothermia);
- Unexplained cognitions;
- Night sweats;
- Paraesthesia;
- Vestibular disorders, hearing and vision impairments;
- Violations of blood pressure regulation (AD) - hypertensive crises, hypotension, and orthostases.
- Violations of the regulation of the rhythm of the heart - arrhythmia;
- Respiratory disorders (breast congestion, lack of air, bronchospasm); High probability of pneumothorax.
- Breaking the menstrual cycle;
- Breaking the passage of food through the gastrointestinal tract;

- Sharp decrease in tolerance to exercise;
- Skin vasculitis;
- Significant deterioration of the course of the disease in patients with Type I and Type II diabetes with a negative outlook.

The following treatment regimen is proposed:

- Direct anticoagulants - apikasaban 5 mg 2 times a day or rivaroxaban for 10 mg 2 times a day at least 2-3 weeks;
- Plasmapheresis - at least 900 ml per procedure, at least 5 procedures, frequency every other day, substitution of saline. The use of these direct anticoagulants has a number of significant contraindications and complications in the central nervous system, can cause bleeding, nasal, throat and renal. As for plasmapheresis, the capabilities of Moscow clinics are not comparable with medical institutions on the periphery.

Without diminishing the importance of the proposed therapy, we offer an alternative way to solve the problem of reducing the fatality from pneumonia and other complications caused by COVID-19.

Previously, we have expressed this view in the treatment of elderly people with multiorganic pathology, namely, they are primarily victims of this pneumonia.

This is the application of the systemic method of hirudotherapy (SMH) - (hirudotherapy). The method is based on a combination of principles of homeopathy and acupuncture (hirudopuncture, our definition).

The proposed solution is based on the almost 30-year use of SMP in elderly people with multiple organ pathology and children who were treated at the Academy of Hirudotherapy in St.- Petersburg. Preventive and therapeutic plan of anticoagulant and anti-aggregation therapy prevention of DVS syndrome, distress syndrome is considered in stages from the position of systemic method of leech (SMP) in recent publications.

The thrombolytic function of leech has a long history. A significant contribution to the understanding of the mechanisms of thrombolysis by medical leeches made by the domestic scientists Professors Baskova I.P. and Nikonov G.I. Due to the limited size of this publication, we suggest that we take a detailed look at the mechanisms of thrombolysis using a medical leech in our publications.

Remind readers about some unknown properties of leeches. Over the past 30 years, the Academy of Hirudotherapy in St. Petersburg has received a number of new fundamental facts in the application of the systemic method of leeches (SMP), which allows to significantly strengthening the clinical effect of its use and will reduce the mortality of patients with pneumonia caused by the COVID-19 virus.

Here is a list of discoveries of these new facts:

- 1992 r. - The discovery of the phenomenon “Hirudobiopsy” (A.I.Krashenyuk, S.V. Krashenyuk);
- 1993 r. - The discovery of the energy effect (information-entropy) (A.I.Krashenyuk, S.V. Krashenyuk) [9,10];
- 1996 r. - The discovery of the neuritstimulating effect of the medical leech (A.I. Krashenyuk, S.V. Krashenyuk, and N.I.Chalisova);
- 2001 r. -The discovery of the acoustic effect of leeches (hirudotherapy). (A.I. Krashenyuk, D.I.Frolov) [13];
- 2003 r. -The discovery of the detoxification effect of hirudotherapy. (A.I. Krashenyuk) [14];
- 2004 r. - The discovery of the phenomenon of local hyperthermia in the body of the Benign brain tumor - neuroma (Kamynin Yu.F., Krashenyuk A.I.) [8,18];
- 2005 r. - The discovery of the non-entropy effect of leeches (hirudotherapy). (A.I. Krashenyuk, G.N.Dulnev) [8];
- 2007 r. - The role of autohemohirudotherapy in the formation of immunomodulating effect of hirudotherapy is shown. (A.I.Krashenyuk, S.V.Krashenyuk, Krylov A.A.) [5];

- 2010 r. - The discovery of the aquastructuring effect of leeches (hirudotherapy). (Semikhina L.P., Krashenyuk A.I.) [15];
- 2016r. - The discovery of “Resonance - wave impact” of leeches on the state of the human aquasystem. (Vlaskin S.V., Dubowitzky S.A., Krashenyuk A.I., Petrosyan V.I.) [16].

Based on the foregoing, we offer pathogenetic treatment of POST-COVID SYNDROME using SMP.

Thrombolytic strategy

The thrombolytic function of leech has a long history. A significant contribution to the understanding of the mechanisms of thrombolysis by medical leeches made by the domestic scientists Professors Baskova I.P. and Nikonov G.I. Due to the limited size of this publication, we suggest that we read in our recent publications a detailed analysis of the mechanisms of thrombolysis using a medical leech.

Exposure to the pathogenesis of the central and peripheral nervous system

In 1996, for the first time in the world, the neurotrophic and neurostimulating effect of the medical leech (A.I.Krashenyuk, S.V. Krashenyuk, and N.I.Chalisova) was discovered and patented [14].

A scientific foundation has been established for unique clinical results for the treatment of muscle spasticity and the restoration of motor activity in children diagnosed with cerebral palsy (Cerebral Palsy).

To date, no clinic in the world for the treatment of cerebral palsy and muscle spasticion has not reached such a level of treatment. Videofilm - proof of our priority in this area “Cerebral palsy is treated only in Russia” can be seen on our website: academia-hirudo.ru This aspect is associated with the effect of the secret of salivary glands leech on nerve endings and neurons.

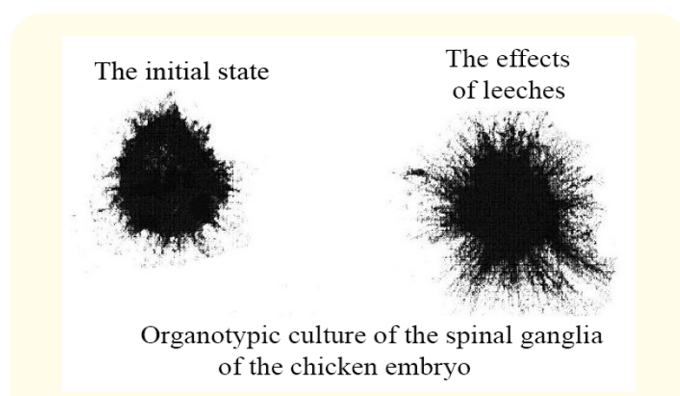


Figure 1: (Photo). Stimulation of nerve cells (neurons), observed by phase-contrast microscopy in the culture of nerve ganglion cells 10 - a day chicken embryo. After exposure to the water extract of the head of the leech, we observe a characteristic growth of neurites - (growths), acting as interneuron bridges [11].

For the first time, this problem was raised by our research as a consequence of the treatment of children diagnosed with cerebral palsy (cerebral palsy), myopathy patients and children with alalia and autism [19-22].

Neurotrophic factors - low-molecular proteins, which are secreted by tissues - targets, are involved in the differentiation of nerve cells and are responsible for the growth of their processes. Neurotrophic factors play a big role not only in the processes of embryonic development of the nervous system, but also in the adult body. They are necessary to maintain the vitality of neurons. The priority of discovering the neurotrophic factors of the medical leech belongs to us [11] (Figure 1).

In the further development of this direction, professor Bas-kova's team I.P. has shown that the neurotrophic (neuritstimulating effect) is associated with the presence of destabilase-M, bdelas-tazine and bdellin-B in the secret of the salivary glands of the leech.

It should be noted that the discovery of neurotrophic factors of medical leech allows to define hirudotherapy as one of the leading technologies in the treatment of diseases of the nervous system: Parkinson's disease, multiple sclerosis, Alzheimer's disease, the ef-

fects of traumatic brain injury, stroke, minimal brain dysfunction (MBD), cerebral palsy, alalia, dysarthria, epilepsy, autism and other diseases of the nervous system. Table 1 shows that the neurostimulating effect of destabilase-M is 10,000 times more active than that of the drug "Cortexin", popular in the treatment of neurological diseases.

Comparative assessment of the neurostimulating effect of some biologically active compounds

Biologically active compounds	Effective concentration, ng/ml	Literary source
Proteincanase C	10,0	Edgar D 1978
Derivative of the brain neurotrophic factor	0,04	Barde Y., et al. 1980
Nerve growth factor	20,0	Levi-Montalcini R 1982
Ciliar neurotrophic factor	10,0	ManthorpheM., et al. 1982
Monosialgangliosides	200,0	Facci L., et al. 1984
Brain neuritstimulizing protein	4,0	Goncharova V.P. with co-author, 1985
Fibroblast growth factor	100,0	Gospodarowicz D., et al. 1989
Cortexin	100,0	Havinson V.H. with co-author, 1997
Epithalamine	200,0	Havinson V.H. with co-author, 1997
Destabilase-M	0,01 и 0,05	Chalisova N.I. with co-author 1999

Table 1

Professor Vorobyev P.A., analyzing brain damage in COVID-19, draws attention to the fact that in addition to classical hemorrhagic strokes in the pathoanatomy of deceased people, there is an unusual mechanism of damage to brain tissue - diapedesis (penetration) of red blood cells through the wall of brain capillaries.

This fact speaks to the severe exposure to the virus on the connective tissue of the endothelial vessels. But even in this case, Leechtherapy is shown as a method of regenerating connective tissue vessels [24,25].

Treatment of depression. The ability to exhibit a neuroendocrine effect.

The ability of medical leeches to affect the level of neurohumoral mediators (neurohormones) in the central nervous system, which is the basis of numerous neuroendocrine effects of hirudotherapy, proved to be significant.

A significant factor in reducing the level of depression (this factor goes under the number 3 in the description of POST-COVID SYNDROME) is the ability to increase the level of serotonin in the session of leeches and after it.

Serotonin (5-hydroxytryptamine, 5-HT) plays an important role in regulating emotional behavior, motor activity, eating behavior, sleep, thermoregulation, is involved in the control of neuroendocrine systems. Serotonin can not only perform the role of a neurotransmitter, but also a neuromodulator (neurohormone) [26].

As it follows from the list of symptoms of post-covid syndrome and disorder by paragraph [3-6,14-16], we observe a pronounced lesion of the serotonergic system of the brain.

In the work [8] of the superposition scanning method, we showed a pronounced effect of leeches on the secretion of serotonin in the human brain - an increase in serotonin concentration. And in the work (internet magazine) [17], thanks to modern IT-technology, you can observe the dynamics of this process.

At the same time, sensory impairment - smell, vision, hearing, talk about deeper lesions and other sensory systems. We are talking about the dopamine system (defeat of the olfactory bulb), histamine -violation of regulation of blood pressure, thermoregulation - lowering body temperature). Given that hirudotherapy affects the level of almost most neurotransmitters, there is an unequivocal conclusion that this method is pathogenetic in terms of pronounced lesions of the COVID-19 virus of the central regulatory systems of the human brain.

The detoxifying effect of leeches

For the first time, the phenomenon of detoxification described by us in the process of hirudotherapy [14] allows to excrete toxic

products (endo - or exogenous origin), not passed metabolic transformations, which allow to remove them from the body with the help of the secretion organs. They are able to cause "stick leeches" (definition of zemstvo doctors for leeches, past the stage of blood-sucking) vomiting or death. This property of side leeches allows us to consider their behavior after bloodsuckering as a way of assessing the integral toxicity of the patient's blood (author's definition). We have established that the dynamics of the death of leeches allows to assess whether the toxic product is circulating in the human bloodstream or comes from the matrix - intercellular space. This fact allows us to recognize that hirudotherapy, unlike plasmapheresis, is capable of deeper cleansing of toxins, although it requires longer use.

Figure 2 shows the dynamics of the death of leeches in the treatment of a patient within 18 months with a diagnosis: Chronic Poisoning Syndrome with drugs. In the right corner of the picture is shown deformation of the bodies of leeches, dying in the process of blood-sucking.

Cause of death of leeches - expressed toxicity of the patient's blood due to the long-term use of drugs (anticonvulsant, hypotensive, nootropics, and vasodilators).

At the age of 7 years they were appointed due to epileptic disease and the patient took them for 11 years. When COVID-19 is affected, the human body experiences a state of intoxication, as intravascular thrombosis affects with the capillary network of many organs. As a result of this process, hypoxia occurs in various organs, which inevitably leads to the accumulation of toxins - products of toxic metabolism. Today, this is proven in the pathoanatomy of people who died from COVID-19 in many countries, not only in China [27,28].

That is why, leech is shown in the disease of moderate to high severity, especially since in many hospitals plasmapheresis is simply not available. We use leech with any form of COVID-19.

The discovery of the detoxification effect of hirudotherapy is also an opportunity to reduce the toxicity of vaccines, to prevent post-vaccination complications. And this is especially true against the background of the COVID-19 pandemic.

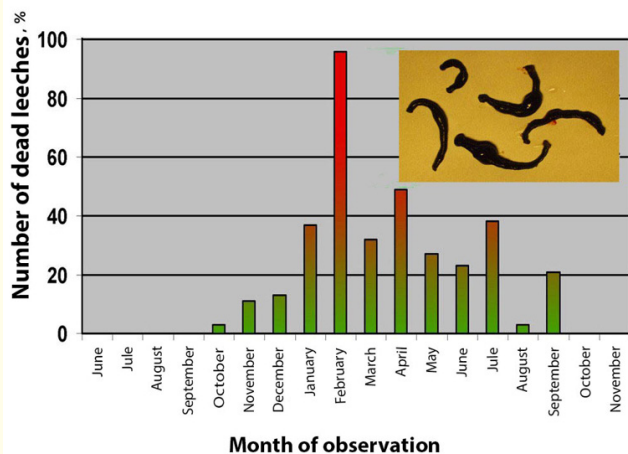


Figure 2: Dynamics of death of leech treatment in a patient with chronic drug poisoning. Diagnosis: a small form of epilepsy. The period of treatment is 11 years [8].

Suppression of coronavirus reproduction by cell protease inhibitors

Another powerful argument for the use of SMP in the treatment of COVID-19 is the publication of scientists from the United States and Germany on the suppression of coronavirus reproduction by cellular protease inhibitors. In order to penetrate SARS-CoV-2 into the cells, its surface glycoprotein S must be cut by cellular proteases.

One such protease is the transmembrane enzyme TMPRSS2. However, as shown by studies of German scientists, conducted on the culture of human air pathway epithelial cells, in addition to TMPRSS2 virus needs another cellular protease - furin.

Furin and TMPRSS2 break into different areas of the S-protein, and both ruptures are critical to the virus’s ability to penetrate the cell. The knockdown of TMPRSS2 with the help of anti-sense RNA prevented the reproduction of SARS-CoV-2 cell culture. In addition, the virus was suppressed under the influence of two inhibitors TMPRSS2 (MI-432 and MI-1900) and aprotinin - a broad-spectrum serin protease inhibitor.

Replication of the virus also suppressed a furin inhibitor known as MI-1851. Moreover, the simultaneous action of TMPRSS2 inhibi-

tors in conjunction with MI-1851 produced a more pronounced antiviral effect than the action of the equivalent number of each of the TMPRSS2 inhibitors studied without MI-1851.

Scientists believe that TMPRSS2 and furin are promising targets for COVID-19 therapy, and the use of their inhibitors, individually or in combination, should be considered as a way to treat the disease. Source: Dorothea Bestle., *et al.* TMPRSS2 and furin are both essential for proteolytic activation and spread of SARS-CoV-2 in human airway epithelial cells and provide promising drug targets. bioRxiv, April 15, 2020;DOI: 10.1101/2020.04.15.042085

In connection with the mentioned publication of the mechanism of activation of coronavirus COVID-19, it is necessary to remind readers about protease inhibitors of medical leech.

Bdellins are the group of polypeptides with a small molecular weight, among which secrete bdellins A with a molecular weight of 7 kDa (in this group the most studied bdelastazine with a molecular weight of 6.3 kDa) and bdellin B with a molecular weight of 5 kD. The method of equilibrium chromatography isolated numerous forms of bdellins A and B; they are marked from A1 to A6 and B1 to B6. Both are strong inhibitors of trypsin, plasmin and sperm acrosin. They do not block the activity of chymotrypsin, tissue and plasma kallikreins, subtilisin. They were first discovered by H. Fritz and co-authors in 1969. A recombinant form of bdellastine has been obtained.

Girustasin - belongs to the same family of anti-tasine inhibitors of serin proteases. Selected in 1994 from extracts of medical leech. The molecular mass of girustazin is 5.9 kDa. It inhibits tissue kallikrein (but not plasma), trypsin, chymotrypsin and cathepsin G neutrophils. The ability of girustazin to block tissue kallikrein is a very important property, as the latter catalyzes the release of highly active kinins. Kinins through specific receptors on target cells modulate a wide range of biological activities, including those involved in maintaining normal blood pressure. Girustasin is also obtained in a recombinant form.

LDTI (Leech Derived Tryptase Inhibitor) is a tryptase inhibitor derived from medical leech extract. Tryptase is the main component of secretory cytoplasmic mast cell pellets and leads to the

destruction of extracellular matrix proteins. There is a known important role of trypsin in allergic and inflammatory reactions. As with many of the compounds already described, a recombinant LDTI has been created. LCI (Leech Carboxypeptidase Inhibitor) is an inhibitor of carboxypeptidase A. Isolated in 1998 and has two isoforms with molecular masses of 7.3 and 7.2 kDa. It is stable in a wide range of pH and temperatures. Since this inhibitor is part of the secretion of the salivary glands of the medical leech, it can be assumed that it can block the hydrolysis of kinin metalloproteinase at the site of leech bite of the skin, thereby increasing the increase in blood flow induced by kinins. A recombinant LCI has been created.

Eglins are low-molecular proteins from medical leech extracts with molecular masses of 8,073 and 8,099 kDa ("b" and "s" form respectively). They were first described in 1977 by U. Seemuller and co-authors. The activity of alpha-chymotrypsin, chemical chemistry of mast cells, subtilisin and proteinase neutrophils, elastase and cathepsin G is inhibited. Have a high resistance to denature and warming. The inhibitory spectrum of eglin "C" makes it one of the most important anti-inflammatory agents. However, there are very serious reasons to believe that the eglins, which are isolated from the extracts of medical leech, are not present in the secret of its salivary glands, and are excreted by the stomach gland.

Use of outpatient thrombolytic drug Thrombosim for the prevention and treatment of distress syndrome, DVS syndrome [29].

The properties of this drug studied so far indicate its prospects. But the hopes placed on it in combination with heparin are effectively solved and with the use of leeches. The use of anti-aggregate therapy (dipyridamole, aspirin) to prevent microcirculatory blood flow disorders in all patients is not required when using a systemic leech method. Mandatory use of thrombolytic therapy with thrombolytics or anticoagulants in all patients with pneumonia with the use of a systemic method of leech is not required. The use of thrombolytic drugs recombinant tissue activators plasminogen in patients with multiorganic insufficiency when using a systemic method of leech is not required.

It has been established that leech prostanoids inhibit platelet aggregation and stimulate the secretion of tissue activator plas-

minogen from the vascular wall. The high risk marker of adverse outcome should be considered a level of D-dimer more than 1000 ng/ml. According to our long-term observations, the use of SMP reduces the level of D-dimer to a clinical norm. Hemorrhagic complications with long-term use of SMP have not been identified (the period of observation in some patients was more than 22 years of permanent use).

Immunomodulating effects of medical leeches

These properties are not well understood. Analysis of the literature shows that this is a multifactorial process, while discussing activation of the macrophage link of the immune system, the complement system and other levels of the immune system's response when using leeches. For the first time, we also drew attention to the currently unexplored property of hirudotherapy, autohemohirudotherapy, and proposed this term to refer to a new therapeutic factor of leeches. We are talking about subcutaneous micro-bleeding resulting from the process of bleeding.

As for the topic of autohemotherapy, many publications speak about its benefits. Detailed reviews on this topic are of interest [30,31].

In the COVID-19 topic under discussion, attention should be paid to the work [32]. Immunomodulatory action of CT, aimed at specific restructuring of regulatory subpopulations of lymphocytes has been found. Thus, in some patients in the blood who had an increased initial amount of CD4 (T-helpers) and CD25 (T-regulators) of lymphocytes subpopulations of lymphocytes, these indicators decreased to physiological values. Simultaneously with the inhibition of CD4 and CD25 subpopulations, there was an increase in the number and functional indicators among CD8 (T-killers/suppressors) and CD16 (natural killers).

To objectify the evaluation of the helper-suppressor relationship of subpopulations in immunogenesis, the authors proposed CD2 regulatory index (CD2 RI) in relation to the amount of CD4 to the amount of CD8 and CD16, on the grounds that the latter subpopulations have common molecular-cell mechanisms of immunogenesis inhibition. Prior to CT, CD2 RI was 1.24 ± 0.07 , which

indicates the stress of the immune system and increased activity of CD4 (helper activation of immunogenesis). After the CT, this indicator changed to 0.86 ± 0.07 due to the suppression of excessive activation of immunogenesis.

This data suggests that the "Cytokine Storm" [33] As many publications speak about the analysis of the coVID-19 pathogenesis, will not arise, but will go to the "Cytokine calm". A very important aspect of the problem discussed is the fate of those who recovered from COVID-19. The treatment tool is the presence of collagenase and elastase enzymes in the leech secret impacting on connective tissue scars, causing them to dissolve [24].

Discovery of the wave effects of the leech

We have detected the phenomenon of wave emission by leeches in the process of blood-sucking in the kiloherc range and the ability to change the radiation of the body's aquasystem in the micro-wave/CVC range. This discovery allows us to consider another possible aspect of the therapeutic and preventive effect of SMP [34,35].

To date, it has been established that a significant proportion of medical personnel in different countries contract COVID-19 coronavirus. At the same time, the most likely version of the violation of the anti-epidemic regime by medical personnel. However, there is another reason - it is a remote (distant) interaction of the aquasystems of a sick and healthy person. Namely, we are talking about the opening of the academician V.P. Kaznacheev, L.P. Mikhailova, S.P. Shurin "The phenomenon of intercellular distant electromagnetic interactions in the system of two tissue cultures" (Number and priority date: No.122, February 15, 1966). The authors discovered a new way of transmitting biological information.

The essence of the discovery: in two vessels grew the culture of normal living cells. One culture was infected with the flu virus. Almost simultaneously, the cells in another vessel, which are only in optical contact with infected cells (the vessels came into contact with bottoms of quartz glass), reproduced a similar pathological process. When quartz glass was replaced by the usual, the situation changed: cells infected with the virus, died, and their neighbors normally shared and developed perfectly. The authors of the discovery believe that between the two fabrics cultures in the optical

range have electromagnetic interactions. They showed the conditions under which the mirror cytopathic effect develops developed ways to increase the sensitivity of healthy cells to the perception of electromagnetic radiation of the affected cells. Using quantum-metric equipment, it was found that the process of cell defeat, in particular, viruses, accompanies the characteristic kinetics of own electromagnetic radiation in the range of frequencies visible and ultraviolet area of the spectrum.

The discovery revealed a new information channel in biological systems, helped to develop a new approach to assessing the role of quantum phenomena in the functioning mechanisms of the cell's genetic program and information coding processes in specialized cellular systems, such as neurons. The correctness of the authors' experiments has been confirmed by many laboratories, including abroad. Confirmation was made at our department, on the model of ultraviolet radiation of people with the definition of chaos and order on the device of the academician G.N. Dulnev "Eniotron" [36].

From this point of view, the protection of health workers requires a special design of protective clothing of doctors, i.e. protection from electromagnetic radiation of the aquasystem of the corona patient COVID-19 person. Wave leeches significantly exceed the radiation of influenza and herpes serotype 2 viruses (from the literature data 800 and 440 Hz respectively). The radiation frequency of covid-19 coronavirus radiation from Internet sources is from 5.5 to 14 GC, which is lower significantly than that of a medical leech. And this is based on our assumption about the preventive role of SMP in health workers who come into contact with infected with the COVID-19 virus. In favor of our assumption is the fact that according to statistics among health workers most often fall ill nurses and surgeons, i.e. people who are most in close contact with patients COVID-19.

The possibility of transmitting weak radio signals from one aquatic environment to another is already a reality of our day. Today, the receipt of information copies of medicines - information's [37]. The technology uses the ability of chemicals and biological substances to produce ultraweak radiation that can be transmitted over long distances across lines of communication, including the Internet.

Such radiation is perceived by water, which is able to reproduce the same pharmacological effects as the chemical sample. In fact, this is the story of a new pharmaceutical reality, when infocemics, in the absence of any chemicals, exhibit a certain biological activity. In support of this direction we see such prominent names as immunologist Jacques Bonvenista, virologist Nobel laureate Luc Montagnier and other scientists.

To support this direction, an international group of enthusiasts - physicists, engineers, biologists and practitioners - has created a DST fund. As a result, an original technology called IC-medicals was created.

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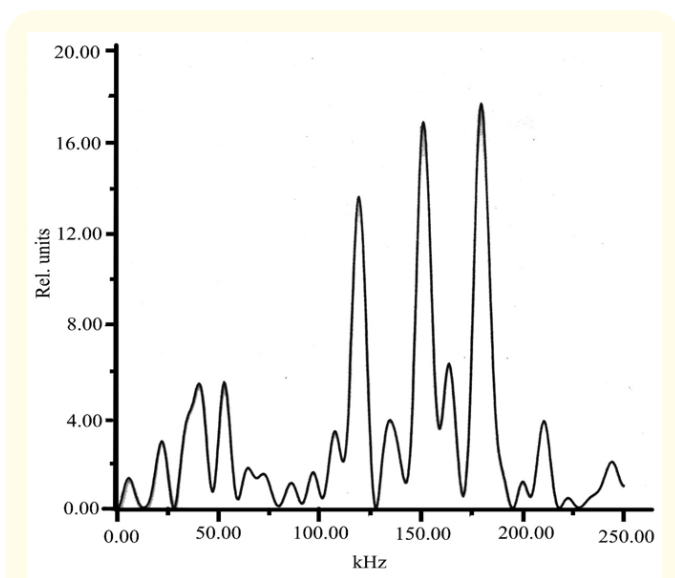


Figure 3: Recording the acoustic leech signal during the blood-sucking process after Fourier-conversion. Details of the experiment are laid out in the work [23].

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Since 2011, the effectiveness of the use of information copies of 60 drugs by the DST Foundation has been tested on patients with various diseases. More than 5,000 observations were made, the vast majority of which recorded positive results with almost no negative effects [37]. Let's not forget about the priority of the academican Treasurer V.P. as the final conclusion of this chapter.

Conclusion

In conclusion of the proposed publication, I would like to express the hope that the materials presented in the publication will save many more human lives, as the training of the SMP technique is now available to doctors of any narrow specialization in the Academy of Hirudotherapy. India is now the second most affected country in the world after the United States and faces a difficult situation of inadequate medical infrastructure, inadequate investment and social structures [27].

With the increasing number of COVID-19 patients in India, there is a growing number of reports that patients are seeking help from Ayurveda doctors. With such capital as Ayurveda, and its component part - leechtherapy (hirudotherapy) doctors in India and other countries could well use modern advances in the field of leech as one of the pathogenetic treatments of their population, using the technology of SMP.

Works are being made in which the difference in coVID-19 mortality from COVID-19 is deeply analyzed in different countries, taking into account the traditional diet of the peoples of these countries [38].

There is also a problem that does not yet appear in the foreground - the problem of excessive mortality of people who have

suffered COVID-19. This is the problem of exacerbation of chronic diseases in the older group of the population. Practical experience suggests that sliding into the “Immune Pit” (Reducing immunity in the sick) and is the cause of excess mortality.

Another problem is the neurotropicity of the COVID-19 virus. And since this property is related to the herpes virus, we will soon have to make sure that COVID-19, like the herpes virus, will be able to integrate into the human genome, creating conditions for the persistence of this virus for life.

I hope that my consultation on overcoming the consequences of COVID-19 was accepted by the consultants of 45 U.S. President Donald J. Trump and helped him, as evidenced by his thank-you letter in my name (the letter is attached at the end of the article). Let it be another argument in favor of the scientific greatness of Ayurveda, from the point of view of modern knowledge about hirudotherapy.

The scientific data presented in the article and analysis of their own research proves that hirudotherapy in the variant of the systemic method of hirudotherapy (SMH) is a reasoned pathogenetic method of treatment of COVID-19 (post-covid syndrome), as well as post-vaccination complications from vaccinations of any vaccine against coronavirus.

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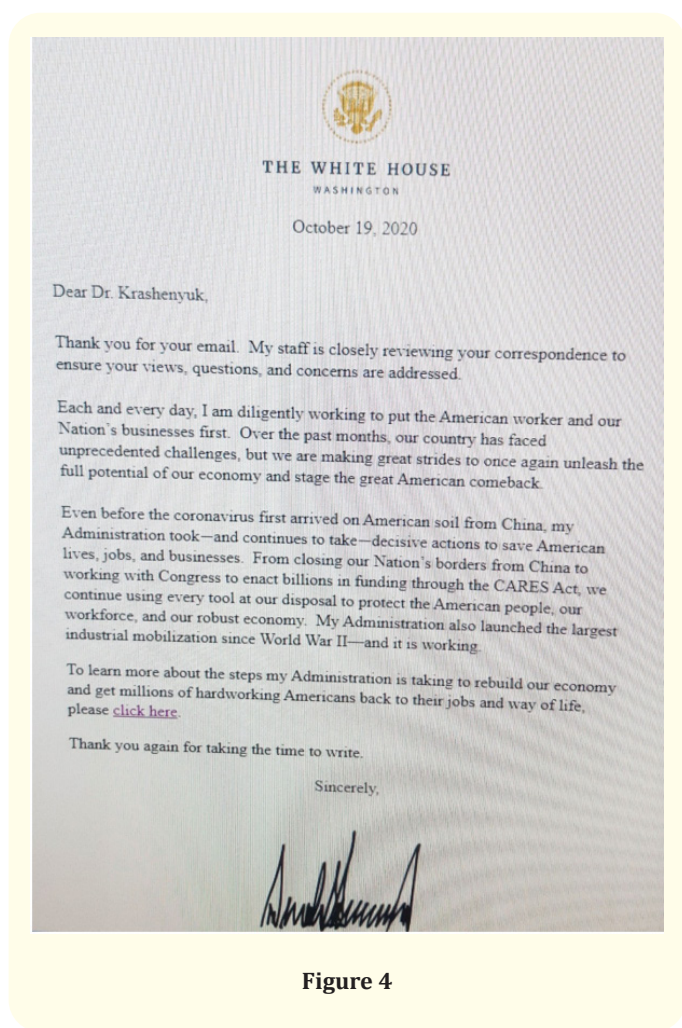


Figure 4

4. Lecture by Professor P.A. Vorobyev. “POST-COVIDE SYNDROME”.
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