Clinical Evaluation of the Noninvasive Hemogram Analyzer (AMP) device

1. General

BIOPROMIN prepared this clinical evaluation for the following product: Noninvasive Hemogram Analyzer device named AMP.

2. Purpose

The purpose of this clinical evaluation is to give a proof sample that the features of the product from BIOPROMIN are effective and the performance of this device is suitable. This clinical evaluation collects the existing objective evidences from the clinical trial and the objective literatures which prove the performance of AMP.

3. Identification of data

3.1. Description of the product.

A method of the device AMP working is based on correlation of heat generation and produced work in a system of internal circulation of the blood. The heat is generated as a result of chemical reaction of nitrogen, oxygen, hydrogen and carbon and also substances without nitrogen. The changes of temperatures determine an activation of chemical elements, first of all oxygen. This activation brings on a changing of correlation of nitrogenous compounds, hydrogenous compounds and solubility coefficient of oxygen. All of them correlate with changes of an oxygen solubility coefficient and a generation rate of CO2. They also are self-regulating and change a protein and lipid rate of cellular membrane.

These items determine an activity of phospholipid factor of thrombocytes. There is such factor practically in all blood cells. The course of these chemical conversions is under genetic control of hemapoiesis (potentiality of primitive blood cell differentiation is in the range of 49023 of a primitive blood cell division). This process depends on the rate of oxygen supply, the activity of phospholipid factor of thrombocytes, solubility coefficient of oxygen, pH medium and temperature.

The important thing of these processes is a functioning (*working*) of erythrocytes' hemoglobin. It depends on conversion of NH and COOH bonds. They are components of glycine and succinic acid (both are the parts of globin). The course of these reactions is cyclic. It is continuous process of substance transition: gas-liquid-crystalline substance. The rate of crystallization depends on activity of phospholipids, triglycerides and cholesterol. Their correlation depends on changes of solubility coefficient of oxygen. This coefficient also influences on phospholipid factor of thrombocytes.

The device AMP has 5 sensors, which should be placed in bioactive fields of a men's body (2 sensors - on the left and the right bifurcation of aorta, 2 sensors - in the left and the right axilla creases and 1 sensor - in the navel region – the region of fusion of aorta, descending vein and lymphatic duct).

There is no influence to a patient during examination. The device determines the influence of environment to a patient (the influence of atmosphere pressure, solar heat etc.) or rather the degree of this influence in correlation with heat generation and emission (an enthalpy and an entropy of energy). They direct a genetic code of cellular elements of blood and biochemical parameters of homeostasis generation.

The method in whole is widely described in monograph by A.Malykhin "Thermoregulation of an organism and vegetovascular paroxysms".

3.2 Noninvasive Hemogram Analyzer (AMP) operating theory

Human organism is an open three-dimensional biosensorsystem that perceives any changes in the atmosphere by photo, chemo-, baro- and osmoreceptors, processes the received information and transmits it through the mediator system to executive organs where acetylcholine, noradrenaline, serotonin and dophamine work as mediators. The latter determine the rate of transfer of an amount of substance from one area in the space to another one. This process is called mass transfer. A method was developed basing on kinematic laws of mass transfer and functioning of receptor and mediator and on molecular kinetic expotential relationship between response rate and temperature and transformation of temperature into radiation energy. This method is based on the connection of an organism and the environment by interaction of the enzymatic hormonal system and the hemopoietic system. It is grounded on the postulate brought in 1979 by Galzinge and Mauzuli about the relationship between physical parameters of the mediator molecules, such as dipole moment, molar refraction, and their exciting or retarding properties with respect to the course of biochemical reactions. Developing this postulate in our method, we made theoretical evaluation of dipole moment by the vector method with the use of internuclear distance of chemical elements, relative molar mass of a substance, Xe86 wave length and other structural data, namely linear dimensions of cardiac and somatic capillary vessels, erythrocyte diameter, body temperature, atmospheric pressure, gas composition of atmosphere, function of mass transfer and specific conductivity which is connected with the oxygen diffusion coefficient.

The principle of operation of the AMP noninvasive analyzer is based on processing of behavior of temperature indicators in representation points (bifurcation of the carotid artery: on the left and on the right, in axillary and abdominal areas). The principle is based on the relationship between variations in oxygen diffusion coefficient, pH-environment and appearance of paroxysmal conditions.

The behavior of the above listed indicators reflects the processes of conversion of chemical connections of elements of carbon, nitrogen, oxygen and hydrogen included into the gas composition of atmosphere and biochemical homeostasis of the organism.

All chemical reactions in the organism are of exothermic nature and determine the organism temperature interconnected with the specific conductivity which, in turn, is connected with the receptor function by the synapsis conduction.

The function of synapsis conduction depends on the combination of aminoacids of which the receptors are composed.

Retarding influence on the synapsis system is produced by glycine with the specific conductivity of 27.5, exciting influence is produced by thrombotonin (specific conductivity 41.5). Acetylcholine produces both exciting and retarding influence on the system (specific conductivity 52.5). Practically, the receptor-mediator function is an obligatory manifestation of any paroxysmal vegetal syndrome with crisis course caused by the changes of glucose and thrombotonin synthesis. Vegetal paroxysmal conditions result from the changes in the activity of glucagon and insulin which depend on conduction of mediator system determined by mass transfer. In general, interaction of arginine and glutaminic acid is a frequent manifestation of adaptation disorder. The principal factors here are concentration of substances and temperature which reflect the regulatory function of glycogen and insulin and functioning of non-specific integrative brain systems. Those systems determine thermal capacity and

thermal conductivity of blood, and the required hemogram, respiratory and cardiac rates by phase substance transitions.

Phase substance transitions are interconnected with blood circulation by peripheral blood composition regulating the required specific conductivity by changing nitrogen metabolism which is reflected by changes in glycogen, fat and protein metabolism. Circulation of blood in the gastrointestinal system and hypothalamic-pituitary axis is connected with the function of aminoacids: glutamate, arginine, aspartate, glycine. When interacting with each other, aminoacids use oxygen activation (temperature related) to provide synthesis of lactic acid, etc.

As it is demonstrated by the comparative analysis of clinical, biochemical and instrumental methods of examination, the final objective of vegetal regulation of homeostasis is the systematic organization of activity of the internal organs and non-specific regulatory brain systems achieved by optimization of the transport and gaseous metabolism function of the blood system and blood circulation, maintenance of quite definite partial oxygen stress in the circumference of each capillary vessel (35-40 mm Hg that corresponds to 65-75% of hemoglobin saturation with oxygen at normal pH and pCO2).

Partial oxygen stress in the circumference of each capillary vessel appears only at certain thermal capacity and thermal conductivity values which determine conduction and concentration of lactic acid. This systematic organization of the course of reactions results in regulation of PVT (pressure, volume and temperature) and osmotic pressure determined by the difference of concentrations of substances that can be soluble in liquids separated by a semipermeable membrane containing lipide-protein complexes that determine the speed of oxygen conduction and CO2 egestion by changing the conductivity of glycine, thrombotonin and dophamine which are the regulators of pH environment. These aminoacids are connected with blood circulation in the gastro-intestinal system and kidneys by changes in sodium-potassium metabolism.

The degree of manifestation of blood circulation disorders is connected with the disorders in the transport and gaseous metabolism function of erythrocytes and depends on the properties of globin and valency of ferrum (determined by oxidation-reduction processes in aminoacid – glycine), which depend on temperature indicators in active points.

Any deviations in oxygen delivery rate and CO2 formation are accompanied by changes in biophysical and morphometric characteristics of cardiac-respiratory system, gastro-intestinal system, liver, kidneys and by changes in functional condition of regulatory non-specific mechanisms of the nervous system. These deviations are accompanied by the changes in temperature indicators in active points, time of their stabilization and changes of activity of trombin-plasmin system (TPS) due to the changes in thrombocyte activation factor.

The thrombocyte activation factor is connected with the function of carnitine and palmitic acid determining the energy metabolism depending on oxygen delivery and with the changes of its physical properties (changes of diffusion coefficient and oxygen solubility) interconnected with thermal capacity and thermal conductivity, and with number of active ions on the erythrocyte surface.

The executive mechanism in the rate of oxygen delivery to the organism involves the activity of somatropic hormone, cardiac rate, respiratory rate, minute circulation volume, stroke volume, general peripheral vessel resistance, and arterial blood pressure. Each of these quantities is stipulated by phase substance transitions from gaseous to liquid and crystalline state on one hand; on the other hand these phase transitions are determined by the distribution of minute circulation volume in the blood circulation system of internal organs having certain enzymatic directionality and activity. There is direct relationship between minute circulation volume, stroke

volume and general peripheral vessel resistance realized in temperature indicators of active points. The values of these temperatures interconnect the values of heat generation and work. Changes of these indicators results, first of all, in changes of minute circulation volume and vital lung capacity. The resulting variety of chemical transformations of gaseous components depends on the constant values in reactions of three types:

- rate of reaction with charge transfer;
- rate of reaction with atom transfer;
- rate of reaction of dissociative recombination.

All these reactions are connected with the oxygen solubility coefficient and are possible only when the energy is extracted by heat emission which is finally perceived by the sensors of the AMP analyzer.

The final results of these reactions are various conversions of enzymatic groups. Enzymes of the first group of sub-class 1 catalyze oxidation of hydroxy groups to carbonyl groups, enzymes of sub-class 2 catalyze oxidation of carbonyl groups to carboxyl groups, enzymes of sub-class 3 catalyze oxidation of CH–CH group to C=C group, enzymes of sub-class 4 catalyze oxidation of CH–NH2 groups that usually results in formation of carbonyl groups and *NH 4* □ ion, enzymes of sub-class 5 catalyze oxidation of CH–NH groups, enzymes of sub-class 8 produce effect on donor groups containing sulphur, enzymes of sub-class 10 produce effect on diphenols and related donor groups.

Analysis of correlation dependences of content of sugar, urea and creatinine demonstrated that quantitative indicators are connected with time characteristics of cardiac cycle which are influenced by temperature indicators and which reflect the essence of retroactive effect of metabolic activity of organs on the activity of brain. This is reflected by the time of stabilization of temperature indicator in abdominal area with respect to the time of stabilization of temperature indicator in carotid area. With respect to the time of stabilization, the temperature indicators reflect the changes in oxygen transport rate which depends on the oxygen solubility coefficient. Changes in temperature indicators cause changes in oxygen solubility coefficient and cell composition of peripheral blood and changes in the course of oxidation-reduction processes accompanied by changes in trombin-plasmin system activity. It was demonstrated rather clearly that physical diffusion of oxygen is the principal driving force to deliver oxygen to arterial blood. At the stage when oxygen is transferred from capillary blood into a cell and from cytoplasm into cell organelle, more complicated oxygen transport mechanisms come into effect determining the development of certain paroxysmal disorders of homeostasis of vegetative nervous system (VNS).

We determined the relationship of the course of free radical oxidation and antioxidant protection with respect to the course of conversion of carbon, nitrogen, oxygen and hydrogen cohesive energy. We determined the relationship between the arterial pressure and metabolism determining the organism aptitude to insulin resistance. Insulin resistance determines disorders in tolerance to carbohydrates, increase of triglyceride concentration in combination with reduced concentration of chemical energy of anhydride bonds of adenesine triphosphoric acid (ATA) into electrical energy of intracellular-extracellular metabolism of sodium and potassium. Intracellularextracellular sodium-potassium metabolism is associated with the contractile force of cardiac muscle and muscles of vessels of internal organs which determine the influence of perfusion pressure on basal pressure of Oddi's sphincter.

The examined patients had metabolic disorders in close interconnection with structural and functional disorders in cardiac muscle. These metabolic disorders were connected with the function of the gastro-intestinal system and the value of basal pressure change. Increase of content of blood serum common lipids directly influenced the indicators of end-diastolic volume, endsystolic volume and stroke

volume. The direct correlative relationship was definitely higher for the patients having a combination of cholesterol-bonded substrate with lipoproteins of very low density (r = +0.35; +0.41; +0.36). Negative relationship was observed between the concentration of blood serum common lipids and ejection fraction (r = -0.55; -0.59). An increasing relationship was detected between the concentration of blood serum common cholesterol and stroke volume (r = +0.43; +0.48).

Changes in temperature conditions cause changes of diffusion, oxygen solubility coefficient and pH environment and thus control the speed of corresponding enzymatically produced coenzymes that regulate the activity of internal organs (cytochrome P450 which is a hemoprotein and a flavoprotein at the same time). Co-proteins are controlled by the sympatho-adrenal system (SAS), hypophysis-adrenal system (HAS), thrombin-plasmin system and immunological system (thymus, spleen, lymph nodes) connected by blood circulation and biophysical parameters of cardiac muscle.

Thus, we can make two conclusions:

1. Any atmospheric changes cause changes in activity of the thrombin-plasmin system (TPS) and are accompanied by certain (often subclinical) disorders of brain vegetative regulation.
2. The degree of evidence of vegetative disorders depends on asymmetry of indicators of examined points, functional condition of systems and structures included into limbicreticular complex and TPS accompanied by synthesis of cholesterol, triglycerides and lipoproteins of very low density.

These relationships are of universal nature and come out both in cases of stress impact, chemical and physical effects and in cases of tumors; traumas and lateralized epileptic syndromes. It should be emphasized that in emergence of clinical syndromes great role is played by the rms value of oxygen delivery rate (norm is 467 ml/s) that determines sufficiency or insufficiency of enthalpy energy to break the relationship of CO or NO. Changes of rms oxygen delivery rate are controlled by acetylcholine, adrenaline, noradrenaline and by changes in activity of erythrocytes and flavoproteins containing metalloproteins (Cu2+, Zn2+, Fe2+). Metalloproteins determine the course of reaction

$$H2O2 + HO2 \leftrightarrow H2O2 + O2$$

Change of reaction course to the right changes the activity of enzymes of glutathioneperoxidase (norm is 10.46 ± 0.27 mM/l); glutathionereductase (norm is 4.21 ± 0.14 mM/l) and reduced glutathione in erythrocytes (1.94 ± 0.04 mM/l).

The role of carbonic anhydrase is to facilitate balanced reaction:

$$CO_2 + H_2O \underset{\Leftrightarrow}{\overset{KA}{}} H_2CO_3$$

If the concentration of CO2 increases, the reaction shifts to the left, fat molecules are dehydrated, move closer to each other and do not let water-soluble substances pass through the membrane. Membrane polarization increases producing effect on quantitative indicators of SAS, HAS and thrombin-plasmin system.

Activation of SAS, HAS and thrombin-plasmin system is accompanied by changes in sodium and potassium molecules activation energy interconnected with the speed of reaction Δ r=Ead – Ear, where Ead – activation energy of direct reaction, Ear – activation energy of reverse reaction. These values are quantitatively related to thermal capacity and thermal conductivity.

Sodium-potassium-adenosinetriphosphatase regulates transmembrane ion interchange and is activated by potassium ions from the outer side of the membrane and by sodium ions from the inner side of the membrane. This enzyme requires magnesium ions as well and is repressed by calcium. We think that the mechanism which regulates the activity of sodiumpotassium- adenosinetriphosphatase is related to phase substance transitions and to the process of H_2CO_3 saline formations where sodium and potassium ions are captured. In any case it would be logical to assume that reduction of membrane permeability caused by H_2CO_3 (carbonic acid) will resist transition of Ca from cavities of endoplasmic system (EPS) into cytoplasm where this substance could activate myosinic adenosinetriphosphatase and stimulate subsequent ion interchange. It is known that muscle relaxation is accompanied by return of Ca++ into EPS cavities and its dissolution from the protoplasm. Such return of Ca++ is accomplished in presence of adenosinetriphosphatase which activates the sodium-potassium-adenosinetriphosphatase and ion pumps thus ensuring cell repolarization which goes after its depolarization during excitation. This is confirmed by time parameters of QT interval according to electrocardiogram data and by quantitative indicators of plasmin. The above reactions are controlled by changing the concentration of H_2CO_3 at the membrane level. The concentration of H_2CO_3 depends on the cell metabolism level and is under control of primary stem respiratory centers.

The study of important neurochemical mechanisms in real time scale became possible from the moment when those processes were investigated with the use of hardware-andsoftware package for noninvasive examination of regulatory homeostasis mechanisms. We determined the role of disorders of lactate-piruvate metabolism and the provocative role of lactate causing vegetative crisis for a number of patients, disorder of glutamate metabolism, insufficiency of dophamine brain systems, the role of hidden calcium insufficiency, the possible role of neuropeptide metabolism in connection with the behavior of temperature indicators in active points and condition of SAS, HAS and thrombin-plasmin system.

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3.3 Technical parameters and characteristics

The technical parameters are defined and written in the "Technical Conditions". This document describes exactly the existing parameters and features and gives exact method for checking them. The "Technical Conditions" are enclosed in Russian and English language to this Clinical Evaluation document (Annex 1).

3.4 Clinical Investigation Plan

Regarding the prescriptions this Plan contains the necessary parts such as:

- the clinical investigation objectives;
- the investigation design;
- type of investigation;
- investigation end points;
- ethical considerations;
- subject population;
- inclusion/exclusion criteria;
- sample size;
- treatment and treatment allocation;
- investigation variables;
- concomitant medications/treatments;
- duration of follow up;
- statistical analysis including investigation hypothesis or pass/fail criteria, sample size calculation, statistical analysis methods.

See the enclosed Annex 2 as an example.

3.5 Reports of the Clinical trials

Report No. 50 (Annex 3)

During the medical-performance testing the ergonomic, functional and other factors were evaluated, i.e. convenience, easy to use, conformity of the medical purpose product, etc.
On the basis of test results it was concluded that the device:

- provides the necessary reproduction of results of complete blood count indices being studied (quantity of erythrocytes, hemoglobin, leucocytes and achroacytes) at 95 % probability level in testing of healthy volunters;
- the device does not have negative influence on the health of examined persons;
- when measuring erythrocytes and hemoglobin by means of the device the parallel check of these indices using generally accepted laboratory procedures shall be performed.

The main conclusions were:

- The examined device is effective for use in medicine to obtain testing indices of complete blood count (quantity of erythrocytes, hemoglobin, leucocytes and achroacytes) with healthy volunteers without its drawing;
- The examined device conform to its medical purpose at evaluation of quantity of erythrocytes, hemoglobin, leucocytes and achroacytes with healthy volunteers;
- The examined device is safe in operation.

See the enclosed Annex 3.

The detailed Report is in the Annex 4.

The Summary of this report is the next:

SUMMARY

1. Basing on the results of comparative examination of the medical-purpose item "AMP Noninvasive Hemogram Analyzer as per Specification ТУ У 33.1-22716816-001:2006", UKTZED Code: 9018 19 90 10 manufactured by research and production complex "Biopromin" Ltd (Ukraine), it was demonstrated that the medical-purpose item under test ensures the required reproducibility of blood indicators (number of erythrocytes, hemoglobin, leucocytes, lymphocytes) at confidence level of 95 % during examination of healthy volunteers.

2. The test results demonstrated absence of adverse effect of the medical-purpose item "AMP Noninvasive Hemogram Analyzer as per Specification ТУ У 33.1-22716816-001:2006", UKTZED Code: 9018 19 90 10 manufactured by research and production complex "Biopromin" Ltd (Ukraine) on the health of patients.

3. The designers of the medical-purpose item "AMP Noninvasive Hemogram Analyzer as per Specification ТУ У 33.1-22716816-001:2006", UKTZED Code: 9018 19 90 10 manufactured by research and production complex "Biopromin" Ltd (Ukraine) should improve the configuration of measuring sensors to achieve a better contact with skin and to prevent thermal influence of the operator's and patient's hands.

4. Taking into account quite limited statistical sample group, threshold level of hypothesis acceptance when measuring erythrocytes and hemoglobin and the type of examination (examination of 60 healthy volunteers), the medical-purpose item "AMP Noninvasive Hemogram Analyzer as per Specification ТУ У 33.1-22716816-001:2006", UKTZED Code: 9018 19 90 10 manufactured by research and production complex "Biopromin" Ltd (Ukraine) is recommended for use in medical practice in Ukraine in parallel with conventional methods of blood analysis until statistical sample group reaches considerable level to enhance indications for use, namely: monitoring comprehensive blood analysis indicators in patients with secondary and primary disorders in the blood system.

It is a post-registration testing in Annex 5.

The Summary is the next of this trial:

SUMMARY

1. Basing on the results of comparative examination of the medical-purpose item "AMP Noninvasive Hemogram Analyzer as per Specification TY Y 33.1-22716816-001:2006", manufactured by Research and Production Complex "Biopromin" Ltd (Ukraine), it was demonstrated that the medical-purpose item under test ensures the required reproducibility of indicators of clinical blood analysis (number of erythrocytes, leucocytes, level of hemoglobin and ESR, number of stab and segmented neutrophiles, eosinophiles, lymphocytes and monocytes) and of biochemical blood analysis (number of K^+, Na^+, Mg^{2+} and Ca^{2+}; cholesterin, urea and creatinine) at confidence level of 95 % during examination of healthy volunteers from Arab population.

2. The test results demonstrated absence of adverse effect of the medical-purpose item "AMP Noninvasive Hemogram Analyzer as per Specification TY Y 33.1-22716816-001:2006", manufactured by Research and Production Complex "Biopromin" Ltd (Ukraine) on the health of patients.

3. Taking into account quite limited statistical sample group, certain difference when measuring the number of basophiles and the number of glucose in women, and the type of examination (examination of 16 healthy volunteers from Arab population), the medical-purpose item "AMP Noninvasive Hemogram Analyzer as per Specification TY Y 33.1-22716816-001:2006", manufactured by research and production complex "Biopromin" Ltd (Ukraine) is recommended for use in medical practice in parallel with conventional methods of blood analysis until statistical sample group reaches considerable level to enhance indications for use.

4. The designers of the medical-purpose item "AMP Noninvasive Hemogram Analyzer as per Specification TY Y 33.1-22716816-001:2006", manufactured by Research and Production Complex "Biopromin" Ltd (Ukraine) should improve the configuration of measuring sensors to achieve a better contact with skin and to prevent thermal influence of the operator's and patient's hands.

4. Conclusions

The BIOPROMIN such as manufacturer of device concludes the next:

- The reliability of features of the product from BIOPROMIN are proved by the results of the clinical trials;
- According to the available literature, materials, investigations we can declare that the product can be used safely, and the performance of the product fulfill the requirements, especially the essential requirements of MDD;
- The device fulfills the medical requirement also according to the literature and clinical data.
- The clinical trials are objective, reproducible and scientifically accepted.

Finally we can declare that the clinical trials of the AMP medical purpose product support accordingly the realization of the performance.

5. Reference literature

See the previous Chapters and the enclosed Annexes.

, 02. 05. 2008.

Director of RPC «Biopromin LTD»

Pulavskyi Anatolii

Patient A

Program USPIH

	Noninvasive hemogram analyzer AMP				
	Name: Sipos L-ne 2745				
	Sex:0	Age:54	Weight:86	PS:84	BF:18
	33,120		33,620		0
		33,180		171,4700	740
	[illegible]		35,860		
No	Characteristic			Norm	Value
Blood formula:					
1	Hemoglobin HGB. g/l			120-160	134,476
2	Erythrocytes RBC. x10E12/l 1mm3			3,4-5	4,703
3	Lymphocytes. %			19-37	28,033
4	Leukocytes WBC x10E9/l			3,2-10,2	7,217
5	Segmented neutrofiles. %			47-72	58,723
6	Erythrocyte sedimentation rate ESR. mm/h			2-20	17,216
7	Eosinophils. %			0,5-5,8	0,827
8	Monocytes. %			3-11	7,389
9	Stab neutrofiles. %			1-6	5,027
Electrolyte metabolism:					
10	Calcium (Ca) in plasma. mmol/l			2,25-3	2,440
11	Magnesium (Mg) in plasma. mmol/l			0,7-0,99	0,969
12	Potassium (K) in plasma. mmol/l			3,48-5,3	4,226
13	Sodium (Na) in plasma. mmol/l			130,5-156,6	141,949
The system of blood coagulation:					
14	The begining of fibrillation. min			0,5-2	00
15	The end of fibrillation. min			3-5	00
16	The thrombocytes. thousands.			180-320	260,830

by Malykhin A.V. screening

Patient A

Program USPIH

17	The haematocrite %.	35-49	37,895
The fermentative system:			
18	AST. mmol/l	0,1-0,45	0,447
19	ALT. mmol/l	0,1-0,68	**0,814**
20	AST. U/l	8-40	20,706
21	ALT. U/l	5-30	**45,971**
22	ALT/AST	0,8-1,2	**00**
23	The amylase. g/l*h	12-32	00
24	The total bilirubin. mkmol/l	8,6-20,5	**5,550**
25	The conjugated bilirubin. mkmol/l	2,2-6,1	2,365
26	The unconjugated bilirubin.	1,7-10,2	3,185
27	The total protein. g/l	60-85	71,771
46	The fibrinogen. g/l	2-3,5	00
47	The concentration of creatinine. mkmol/l	55-123	90,86
48	The dopamine B-hydroxylase. nanom/ml/min	28-32,5	**00**
49	The concentration of lactic acid. mmol/l	0,99-1,38	00
50	The concentration of urea. mmol/l	2,5-8,3	6,47
51	The concentration of glucose. mmol/l	3,9-6,2	00
52	The concentration of triglyceride. mmol/l	0,55-1,85	00
53	The cholesterol total. mmol/l	3,11-6,48	**7,07**

It is preliminary result, an automatic help for a doctor in charge:

The spectral wave-length of N2O absorption is changed (mkm). =3,651

The derangement of thyroid gland? It is necessary to get a consultation of endocrinologist. There is discirculatory encephalopathy.

There is the discirculatory encephalopathy. There is the derangement of lipid exchange.

Patient A

Program USPIH

There is the spinal osteochondrosis. There is the derangement of water-electrolytic metabolism. The Ca c plasma is changed (Ca of bone tissue).

The spectral wave-length of N2O absorption is changed. The blood flow of small pelvis organs is reduced. It is recommended the advices of gynecologist, proctologist and gastroenterologist.

There is the hypertension of lesser circulation.

The width of the third ventricle of cerebrum. mm=6,39

It is necessary to eliminate the pulmonic mechanism of homeostasis derangement(restrictive type of lungs function derangement).

It is recommended the advices of gynecologist. The other organs current of blood. %=4,5

The index Tiffno is reduced till: 73,8 (Test Tiffno. %)

H. Poliklinika Kft.

Klinikai Laboratórium
1134 Budapest 13.ker., Lehel u. 41. - Tel.:061-3504319
Osztályvezető főorvos: Dr. Tomcsányi Katalin

Patient A

Azonosító: 307
Naplószám: 200608050007
TAJ szám:
Születési dátum: Kor:
Megjegyzés:

Beküldő partner: Ambuláns
Beküldő:
Dátum: 2006.08.05. 11:08
Irányítószám:

Vizsgálat neve		Eredmény	Mért.egys.	Normáltartomány
TP	Összfehérje	73,5	g/L	66 - 87
Amyl	Serum alfa-amyláz	153	U/l	10 - 220
GOT	GOT	27	U/l	0 - 31
GPT	GPT (ALAT)	42	U/l	0 - 32
BUN	Urea-Nitrogén	6,3	mmol/l	1,7 - 8,3
T-BIL	Bilirubin összesen	5,9	umol/l	1,5 - 18
CREA	Kreatinin	87	umol/l	44 - 80
Se Ca	Serum Calcium	2,47	mmol/l	2,15 - 2,55
TG	Triglicerid	1,8	mmol/l	0 - 1,71
Se Na	Serum Nátrium	145	mmol/l	135 - 148
Se K	Serum Kálium	4,5	mmol/l	3,6 - 5,4
WBC	Fehérvérsejt szám	7,11	G/L	4 - 10
RBC	Vörösvértest szám	4,61	T/L	3,8 - 4,8
HGB	Haemoglobin	136	g/L	120 - 150
PCV	Haematokrit	0,41	L/L	0,37 - 0,42
MCV	MCV	88,9	fL	80 - 100
MCH	MCH	29,4	pg	28 - 34
MCHC	MCHC	331	g/L	320 - 360
Thr	Thrombocyta-szám	272	G/L	150 - 350
Se	Segment	60,7	%	45 - 70
Eo	Eosinofil	2,54	%	0 - 6
Ba	Basofil	1,07	%	0 - 1,5
Ly	Lymphocyta	27,9	%	20 - 40
Mo	Monocyta	7,8	%	0 - 10

Validáló orvos: Dr. Tomcsányi Katalin

Nonvéd Poliklinika Kft.
Általános Orvosi Laboratórium
1134 Budapest, Lehel u. 41.
ÁNTSZ engedély szám: 451-4/2006/1
Adószám: 12109730-1-41

Nyomtatás időpontja: 2006.08.07. 12:30:22 *Sipos Lászlóné*

Patient B

Program USPIH

	Noninvasive hemogram analyzer AMP				
	Name: Borek Virag 2760				
	Sex:0	Age:35	Weight:64	PS:64	BF:18
	33,560		34,020		0
		34,810		173,4540	740
	[illegible]		35,230		
No	Characteristic			Norm	Value
Blood formula:					
1	Hemoglobin HGB. g/l			120-160	130,101
2	Erythrocytes RBC. x10E12/l 1mm3			3,4-5	4,100
3	Lymphocytes. %			19-37	33,092
4	Leukocytes WBC x10E9/l			3,2-10,2	6,536
5	Segmented neutrofiles. %			47-72	56,997
6	Erythrocyte sedimentation rate ESR. mm/h			2-20	7,649
7	Eosinophils. %			0,5-5,8	3,070
8	Monocytes. %			3-11	5,946
9	Stab neutrofiles. %			1-6	**0,895**
Electrolyte metabolism:					
10	Calcium (Ca) in plasma. mmol/l			2,25-3	2,251
11	Magnesium (Mg) in plasma. mmol/l			0,7-0,99	0,802
12	Potassium (K) in plasma. mmol/l			3,48-5,3	4,751
13	Sodium (Na) in plasma. mmol/l			130,5-156,6	139,772
The system of blood coagulation:					
14	The begining of fibrillation. min			0,5-2	00
15	The end of fibrillation. min			3-5	00
16	The thrombocytes. thousands.			180-320	233,554
17	The haematocrite %.			35-49	39,305
The fermentative system:					
18	AST. mmol/l			0,1-0,45	0,273
19	ALT. mmol/l			0,1-0,68	0,236
20	AST. U/l			8-40	13,691
21	ALT. U/l			5-30	13,327
22	ALT/AST			0,8-1,2	00
23	The amylase. g/l*h			12-32	00

by Malykhin A.V. screening

Patient B

Program USPIH

24	The total bilirubin. mkmol/l	8,6-20,5	16,502
25	The conjugated bilirubin. mkmol/l	2,2-6,1	5,598
26	The unconjugated bilirubin.	1,7-10,2	**10,904**
27	The total protein. g/l	60-85	73,607
46	The fibrinogen. g/l	2-3,5	00
47	The concentration of creatinine. mkmol/l	55-123	92,43
48	The dopamine B-hydroxylase. nanom/ml/min	28-32,5	**00**
49	The concentration of lactic acid. mmol/l	0,99-1,38	00
50	The concentration of urea. mmol/l	2,5-8,3	4,90
51	The concentration of glucose. mmol/l	3,9-6,2	00
52	The concentration of triglyceride. mmol/l	0,55-1,85	00
53	The cholesterol total. mmol/l	3,11-6,48	**3,08**

It is preliminary result, an automatic help for a doctor in charge:

The tonic derangements are possible., Magnesium (Mg) in plasma. mmol/l=0,80 Calcium (Ca) in plasma. mmol/l=2,25

H. Poliklinika Kft.

Klinikai Laboratórium
1134 Budapest 13.ker., Lehel u. 41. - Tel.:061-3504319
Osztályvezetõ fõorvos: Dr. Tomcsányi Katalin

Patient B

Azonosító: **316**
Naplószám: 200608050016
TAJ szám:
Születési dátum: Kor:
Megjegyzés:

Beküldő partner: Ambuláns
Beküldő:
Dátum: 2006.08.05. 11:08
Irányítószám:

Vizsgálat neve		Eredmény	Mért.egys.	Normáltartomány
TP	Összfehérje	69,6	g/L	66 - 87
Amyl	Serum alfa-amyláz	128	U/l	10 - 220
GOT	GOT	16	U/l	0 - 31
GPT	GPT (ALAT)	15	U/l	0 - 32
BUN	Urea-Nitrogén	3,6	mmol/l	1,7 - 8,3
T-BIL	Bilirubin összesen	15,1	umol/l	1,5 - 18
CREA	**Kreatinin**	**83**	**umol/l**	**44 - 80**
Se Ca	Serum Calcium	2,43	mmol/l	2,15 - 2,55
CHOL	Serum Cholesterin	4,3	mmol/l	3,1 - 6
Se Na	Serum Nátrium	142	mmol/l	135 - 148
Se K	Serum Kálium	4,7	mmol/l	3,6 - 5,4
WBC	Fehérvérsejt szám	6,89	G/L	4 - 10
RBC	Vörösvértest szám	4,62	T/L	3,8 - 4,8
HGB	Haemoglobin	135	g/L	120 - 150
PCV	Haematokrit	0,392	L/L	0,37 - 0,42
MCV	MCV	84,9	fL	80 - 100
MCH	MCH	29,2	pg	28 - 34
MCHC	MCHC	344	g/L	320 - 360
Thr	Thrombocyta-szám	252	G/L	150 - 350
Se	Segment	60,3	%	45 - 70
Eo	Eosinofil	3,31	%	0 - 6
Ba	Basofil	0,889	%	0 - 1,5
Ly	Lymphocyta	28,4	%	20 - 40
Mo	Monocyta	7,09	%	0 - 10

Validáló orvos: Dr. Tomcsányi Katalin

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Általános Laboratóriumi diagnosztika
1134 Budapest, Lehel út 41.
ÁNTSZ eng. 54... 451-464/2006/1
Adószám: 12102739-1-41

mit B cp-x

yomtatás idõpontja: 2006.08.07. 12:30:17