

Materials of Conferences

**ANALYSIS OF INDICATORS THAT
REFLECT THE ACTIVITY OF THE SYSTEM
COAGULANT IN EFFECTS THE BODY
OF ELECTROMAGNETIC RADIATION
WITH THE POSITION
OF «GOLDEN MEAN»**

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«Golden Section», that is, division of the whole into parts 0,618 and 0,382, associated with the ideal norm, which should aim at providing a functional system homeostasis. An indicator of the steady state of the system over time is also her desire for «Generalized Golden Section» or «nodes» 0,500 0,500; 0,618 0,382; 0,682 0,318; 0,725 0,275; etc. In turn, the tendency of the system to the so-called «attractors repulsive» and «antinodes» 0,570 0,430; 0,654 0,346; 0,705 0,295; 0,741 0,259; 0,767 0,233; ..., indicates the presence of the unstable state of the functional system, as they are the characteristics of chaos.

The article analyzes the system coagulants exposed EHF EMR and magnetic fields of different modes, with the «golden section» and «of generalized golden sections». As indicators of a coagulant, the clotting time of blood and plasma recalcification time. Shown that the presence of «generalized golden sections» in the relationship between clotting time and recalcification time, indicates the desire of coagulants to the sustainable equilibrium in the case of EHF EMR exposure and the magnetic field with shielding schungite and irradiated EHF EMR with increasing exposure time (180 and 270 min).

The purpose of this study is to test with a «golden mean» and «generalized golden section» basic indicators of the coagulant activity of the system, when exposed to EHF EMR and magnetic fields of various regimes.

For experimental studies used Vistar rats of both sexes of the same age. The rats of the first experimental group were exposed to EMR UHF frequency 37 GHz and a power of less than 0,1 mW/cm² for exposure 30, 90 and 270 min. Second experimental group of rats exposed to a magnetic field frequency of 3, 5 and 8 Hz with an exposure 30, 90 and 270 min. At the same time some of the animals in the experimental groups was screened from the source of EHF EMR and magnetic fields extremadamente low-frequency layer shungite 5 cm to study the regulation of the activity of blood aggregation used the following parameters: clotting time and recalcification time. Performed comparison of these measures in health and disease, determine the pres-

ence or absence of the «golden ratio» and «generalized golden sections» in these parameters in the control and experimental groups.

An analysis of the influence of EHF EMR and magnetic fields on the parameters reflecting the activity of coagulants. The normal clotting time and recalcification time treated as 0,760 and 0,240, that is, do not form a «golden ratio» (0,618 and 0,382). The irradiation of laboratory animals EHF EMR and magnetic fields with schungite without schungite been some changes between these indicators.

All ratios clotting time and recalcification time obtained for the groups exposed EHF EMR and magnetic field with screening and without screening schungiteschungite differ from the classical «golden section», but some of them are close to the «Generalized Golden Section» or «nodes». Since the value of 0,688 obtained by irradiation with shielding EHF EMR schungite, close to the «node» 0,682, 0,730 and the value obtained by the irradiation of a magnetic field with shielding schungite, close to the «node» 0,725. The proximity to the «Generalized Golden Section» refers to the desire of coagulants to the sustainable equilibrium. In turn, the values obtained in the groups exposed to EHF EMR and magnetic field without shielding schungite (0,702 and 0,739, respectively) are close to the «attractor repulsion» and «antinodes» (0,705 and 0,741), indicating that the unstable state of the system and the deviation from the norm.

The irradiation of a magnetic field frequency of 3, 5 and 8 Hz, only the ratio 0,729, obtained for the group, exposed to a magnetic field with a frequency of 3 Hz, close to the «node» 0,725, which indicates a tendency of the system to a stable state of coagulants. All other values are far from the «generalized golden section», and the value of 0,739 obtained for the group exposed to the magnetic field of 8 Hz, indicates the proximity to the «antinode» 0,741, which characterizes the deviation from the norm and the existence of non-equilibrium state.

Changing attitudes clotting time and recalcification time were observed as a result of exposure to EHF EMR exposure time of 90, 180 and 270 min. This ratio is close to the «Generalized Golden Section» in the two cases. When exposed 180 minutes get 0,688, with an exposure of 270 min – 0,684. These values are close to the «node» 0,682, indicating that a steady state of coagulants. In turn, the exposure value obtained 90 min 0,704, which is close to the «antinode» 0,705 and pointing to the unstable state of the system. Values obtained by irradiation EHF EMR, much closer to the classical «golden section» than the values obtained when the magnetic field exposure.

The irradiation of magnetic field exposure time 90, 180 and 270 min relations clotting time and recalcification time not constitute a «Generalized Golden Section». Consequently, the system of coagulants in this case tends to a stable equilibrium state and is far from the norm. The value obtained for the exposure time 270 min, coincides with the «antinode» 0,741, which indicates the presence of active disease process.

Thus, the presence of «generalized golden sections» in the relationship between the clotting time of blood and recalcification time, points to the tendency of the system coagulants to sustainable equilibrium in the case of EHF EMR exposure and the magnetic field with shielding shungite and irradiated EHF EMR with increasing exposure time (180 and 270 min).

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**EFFECT OF CONCENTRATION
ULTRALOW 1,5-BENZODIAZEPINONA-2
ON THE PAIN THRESHOLD IN RATS
INTOXICATED WITH THEIR ORGANISM
CADMIUM CHLORIDE**

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Certain substances benzodiazepine are found to retain their specific effect in the range of ultralow concentrations (ULC) from 10–14 to 10–12 M without the side effects. Moreover, the magnitude and direction of their action depends from the dose of the substance as well as the functional state of the organism. For example, increasing the concentration of heavy metals in the body significantly alters its response to the effects of various pharmaceuticals. The aim of this work was to study the effect of 1,5-benzodiazepinon-2 (1,5-BDA) at the ULC on the pain threshold in rats against the background of cadmium chloride intoxication. The investigations were carried out on 70 white outbred male rats weighing between 230–250 grams. Control group of rats was injected with saline. Three groups of rats were injected during seven days intraperitoneally by cadmium chloride at a dose of 1 mg/kg, modulating accumulation of the metal in the organism tissues. Then these three groups and three groups of rats without intoxication were administered 0,2 ml of 1,5-BDA at concentrations 10–12, 10–13, 10–14 M. Analgesic effects were detected in the test «electrical stimulation», where the threshold of pain (TP) was determined. The results of the experiments were calculated statisti-

cally using Mann-Whitney U test. Under the action of 1,5-BDA at concentrations 10–12, 10–13, 10–14 M TP increased by 54, 48, 71 % ($p \leq 0,05$), respectively, compared with the control, that is evidence of the presence analgesic effect of 1,5-BDA at the ULC. The intoxication of the cadmium chloride resulted decreasing pain sensitivity (TP increased only by 45%), against the background of cadmium chloride intoxication the introduction 1,5-BDA increase even greater TP at all tested doses: by 169, 173 and 222% ($p \leq 0,01$) in comparison with the control. Also BP of these groups increased in comparison with the effect of the cadmium chloride by 124, 128 and 177% ($p \leq 0,01$) respectively. Thus, we have found that 1,5-BDA had analgesic effect at the ULC and dose-dependent analgesic effect was even more pronounced against the background of cadmium chloride intoxication.

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**HOW TO GIVE UP SMOKING ON YOUR
OWN PIECES OF ADVICE TO SMOKERS
AND SURROUNDING PEOPLE NEW
METHODS OF STRUGGLE AGAINST
SMOKING**

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Smoking is one of the major risk factors of cardiovascular and oncological diseases, it continues to cause irreparable harm to human health. The fact that smoking shortens life is undeniable, and it is now recognized by the majority of researchers.

Despite a lot of achievements in the fight against smoking, it is not so simple to overcome this habit. According to the data of the Institute of Cardiology of the Tomsk Scientific Centre of the Russian Academy of Medical Sciences, smoking prevalence for men constitutes 70% among women – 8%. These high figures point, on the one hand, to the cultural and social level and, on the other hand, the lack of effectiveness of existing ways to combat smoking.

This is partly due to the fact that anti-smoking techniques such as acupuncture and its varieties, psychotherapy, the use of drugs (unfortunately, not always accessible to the population) are not without side effects and often require a lot of time as well as repeated cumbersome courses of treatment.

The proposed way to combat smoking is addressed directly to a smoker; it is harmless and aimed at providing positive motivation, reinforcing the negative personal attitude of the person to smoking. It always clearly defines the position of the surrounding people.