

der albuminuric stage of DN ( $112,4 \pm 3,6$  pg/ml) and in the control group ( $40,9 \pm 6,9$  pg/ml).

**Resume.** An increase in serum level of MCP-1, TGF- $\beta_1$ , FGF, in a larger scale under proteinuric stage of disease, has been established under diabetic nephropathy.

The work was submitted to International Scientific Conference «Fundamental and applied research in medicine», France (Paris), 14-21, October, 2012, came to the editorial office on 18.10.2012.

#### LEVEL OF LEPTIN AND ADIPONECTIN AMONG PATIENTS WITH PODAGRA WITH METABOLIC SYNDROME

Goryainov I.I., Ershva O.B., Ivalkin V.E., Masalova E.A.

*Kursk state medical university,  
Kursk, e-mail: kafedra\_n1@bk.ru*

**The objective of this work** is to study an impact of adiponectin in blood serum of patients with podagra with metabolic syndrome.

**Methods and materials.** 58 men with chronic podagric arthritis in an inter stroke period, aged from 40 to 60 years (average of  $48,9 \pm 8,2$  years) have been studies; metabolic syndrome has been established among 28 of them (48,3 %). Diagnosis of podagra corresponded to classification criterions of EULAR 2010. Diagnostics of metabolic syndrome (MS) has been established according to characteristics, developed by experts of National health institute of USA (Adnet Treatment Pane IIII). Control group was formed of 24 healthy donors. Contents of leptin and adiponectin were estimated by method of immune-ferment analysis. Statistical processing of the received data was carried out with using of programme complex Statistica 8,0 for Windows.

**Results and discussions.** The research has shown that an increase in levels of leptin in blood serum up to  $14,2 \pm 1,2$  ng/ml ( $p < 0,05$ ), compared to the control group ( $4,9 \pm 0,54$  ng/ml) has been registered among all patients with podagra. We should outline, that contents of leptin among patients with podagra with MS exceeded that of patients without MS of  $32,8 \pm 2,2$  % ( $p < 0,05$ ).

A decrease in serum concentration of adiponectin ( $16,2 \pm 4,8$  mcl/ml) by  $1,6 \pm 0,2$ , compared to the control, was established among patients with podagra with MS, and by  $1,2 \pm 0,2$  ( $p < 0,05$ ) – compared to this index among patients with podagra without signs of MS.

**Resume.** Presence of MS among patients with podagra is attended by a reliably higher level of leptin in blood serum. Higher contents of adiponectin is registered among patients with podagra, compared to this index of patients who combine podagra and MS.

The work was submitted to International Scientific Conference «Fundamental and applied research in medicine», France (Paris), 14-21, October, 2012, came to the editorial office on 18.10.2012.

#### THE GROWTH FACTORS AND INTERLEUKINE-1 (IL-1) URINARY EXCRETION AT THE ARTHRITIC NEPHROPATHY

Ivakin V.E., Knyazeva L.E., Ershova O.B., Ponkratov V.E.

*The Kursk State Medical University,  
Kursk, e-mail: kafedra\_n1@bk.ru*

The main paper's **aim** has been the growth factors urinary excretion study: transforming growth factor  $\beta_1$  (TGF $\beta_1$ ), the vasculo-endothelium-derived growth factor – A (VEGF-A), and the interleukine –  $1\beta$  (IL- $1\beta$ ) at the patients with the gouty nephropathy.

**The Materials and Methods.** The 59 men with the gout, gouty with the tubulo-interstitial nephritis, at the age from 40 to 50 years (e.g. the average age has been made up  $42,2 \pm 5,8$  years or  $508,2 \pm 60,8$  months) have been involved under the medical observation. So, all the medically observed sick men have already been divided into 2 main groups, according to the glomerular filtration rate (GFR) values: I group ( $n = 30$ ) – GFR  $> 90$  ml/min/1,73 m<sup>2</sup> (e.g. the chronic kidney disease – CKD – the Stage 2 on K/DOQI, 2002); the II group ( $n = 29$ ) – GFR –  $60-89$  ml/min/1,73 m<sup>2</sup> (e.g. CKD – the 2 Stage). The podagra diagnosis has been met the EULAR, 2010 classification criteria. The gouty with the tubulo-interstitial nephritis diagnosis has been established, on the basis of the history, the clinical and laboratory studies. The control group has been consisted of the 20 healthy donors and the volunteers (e.g. men) at the age from 40 to 50 years (e.g. the average age has been made up  $41,8 \pm 4,6$  years or  $492,8 \pm 48,6$  months). Thus, the TGF- $\beta_1$ , VEGF-A, IL- $\beta_1$  urinary excretion determination at the patients with the gouty tubulo-interstitial nephritis has been carried out and determined by the immune – enzyme analysis method.

**The Results and Their Discussion.** The growth factors urinary excretion determination: TGF $\beta_1$  and VEGF-A at the patients with the gouty interstitial nephritis has been shown the following results. Significantly higher TGF $\beta_1$  urinary excretion has been determined at the patients with the CKD 2 Stage (e.g.  $30,4 \pm 0,3$  pg/ml,  $p < 0,05$ ), having exceeded the patients with the CKD 1 Stage and the control group in  $1,4 \pm 0,2$  (e.g.  $p < 0,05$ ) time and  $2,2 \pm 0,3$  (e.g.  $p < 0,05$ ), respectively. The VEGF-A urinary excretion increase with the CKD progression has been determined. The VEGF-A higher level has been established at the patients with the gouty tubulo-interstitial nephritis with the CKD 2 Stage (e.g.  $120,4 \pm 4,4$  pg/ml,  $p < 0,05$ ).

The IL- $1\beta$  urinary excretion higher level has been shown at the patients with the arthritic nephropathy with the CKD II Stage. The IL- $1\beta$  content in the urine in  $2,8 \pm 0,2$  (e.g.  $p < 0,05$ ) has been exceeded the reference value, and in  $1,4 \pm 0,2$  time –

the indicator at the patients with the CKD 1 Stage at the patients in this group.

**The Conclusions.** It is taken its place the TGFβ<sub>1</sub>, VEGF-A, and IL-1β urinary excretion increase with the CKD progression at the patients with the gouty tubulo-interstitial nephritis.

The work was submitted to International Scientific Conference «Fundamental and applied research in medicine», France (Paris), 14-21, October, 2012, came to the editorial office on 18.10.2012.

#### THE ANALYSIS OF THE LIVER TISSUE ROTARY PULSE TRAVELING AND MAGNETIC FIELDS

Isaeva N.M., Subbotina T.I., Iashin A.A.,  
Hrenov P.A.

*Tula State University, Tula Pedagogical University  
name L.N. Tolstoy, Tula, e-mail: mbd2@rambler.ru*

«Golden Section», that is, division into shares of a 0,618 and 0,382, seen in many publications as normal in the body. Deviation from it as indicating the presence of disease.

This article analyzes the morphological changes in the liver of mice exposed to magnetic fields from the standpoint of the «golden section». The experimental data suggest that the law of the «golden section» is applicable not only in normal conditions, but under severe pathological processes. This indicates the tendency of a biological substance to equilibrium in mature irreversible pathological process.

The purpose of the study. The aim of the study was to analyze the severity of the morphological changes in the liver of mice exposed to magnetic fields of different modes from the standpoint of the «golden section». Reviewed the results of the study of the morphological effects of the control actions extremadamente low-frequency, rotating magnetic fields (EMF) and impulse traveling magnetic fields (IBMP) to mammalian tissue.

**Materials and Methods.** To verify compliance with the law «golden mean» for a number of indicators or deviation from it was carried out in five groups of laboratory animals:

Group 1 – control group of intact mice;

Group 2 – the experimental group of mice that were exposed to a traveling magnetic field pulse (IBMP) with a pulse duration of 0,5 seconds;

Group 3 – the experimental group of mice that were exposed to a rotating magnetic field (EMF) with a frequency of 6 Hz, the direction of rotation of the field to the right, the magnetic induction 4 mT, combined with an alternating magnetic field (VMF) at 8 Hz, at a value 4 mT magnetic induction;

Group 4 – experimental group of mice that were exposed to an alternating magnetic field (VMF) at 8 Hz when the magnetic induction 4 mT;

Group 5 – the experimental group of mice that were exposed to EMF with a frequency of 6 Hz, the direction of rotation of the field to the right, the

magnetic induction 0,4 mT, combined with an alternating magnetic field (VMF) with a frequency of 8 Hz, the magnetic induction 0,4 mT.

**The results of research.** Analyze from the standpoint of the «golden section» relations between some morphometric parameters of liver tissue. Analysis were the following parameters: the size of the central vein, the area of the cytoplasm in the area of necrosis and the area of the central vein, the area of necrosis and the area of the central vein as indicators, reflecting the state of hemodynamics at the microcirculatory level in the liver tissue. The values given in Table 1, show that the «golden section» is most characteristic of the fifth group, which has the greatest pathological changes.

The ratio between the area of the cytoplasm in the area of necrosis and the area of the central vein satisfies the law of «golden» for the second (0,410 and 0,590), fourth (0,397 and 0,603) and fifth groups (0,368 and 0,632). The same result is obtained for the ratio between the area of necrosis and the area of the central vein. For the second group, the ratio is 0,389 and 0,611 for the fourth – 0,359 and 0,631, for the fifth – 0,349 and 0,651. The relation between the size of the central veins close to the «golden» numbers for the fifth group (0,595 and 0,605).

The work was submitted to International Scientific Conference «Innovative medical technologies», Russia (Moscow), 20-22, November, 2012, came to the editorial office on 30.10.2012.

#### ORGANIZATION FORMS OF PREVENTATIVE WORK IN STOMATOLOGY

<sup>1</sup>Kalininskaya A.A., <sup>2</sup>Sadikov M.K.,  
<sup>3</sup>Kunitsyna N.M.

*<sup>1</sup>FSI «Central Research Institute for Public Health»  
of the Federal Agency for Healthcare and Social  
Development, e-mail: Akalininskaya@yandex.ru;*

*<sup>3</sup>LLC «Agulla»;*

*<sup>3</sup>Clinic № 1, Belgorod*

Numerous studies that have been taken in Russia and abroad have proved convincingly that introduction of preventive methods into practice decreases levels of diseases' spread significantly.

Social questionings have shown that only 21,3% of the respondents had a partially correct opinion on methods and mean of oral cavity hygiene, and the rest 79,2% – incorrect. Majority of respondents (96,7%) have mentioned that before, while buying a toothpaste, they considered a lower price rather its characteristics. No one of the questioned used dental elixirs of gels.

65,0% of the questioned brushed their teeth regularly two times a day, however, only 81,3% of the total number of the questioned sent more than 1 minute brushing teeth, instead of recommended 2,5–3 minutes.