

***International Scientific and Practical  
Conference  
"WORLD SCIENCE"***

***№ 5(21), Vol.5, May 2017***

**Proceedings of the  
III International Scientific and Practical Conference  
" Scientific Issues of the Modernity"  
(April 27, 2017, Dubai, UAE)**

Copies may be made only from legally acquired originals.

A single copy of one article per issue may be downloaded for personal use (non-commercial research or private study). Downloading or printing multiple copies is not permitted. Electronic Storage or Usage Permission of the Publisher is required to store or use electronically any material contained in this work, including any chapter or part of a chapter. Permission of the Publisher is required for all other derivative works, including compilations and translations. Except as outlined above, no part of this work may be reproduced, stored in a retrieval system or transmitted in any form or by any means without prior written permission of the Publisher.

**Founder –**  
ROSTranse Trade F Z C  
company,  
Scientific and Educational  
Consulting Group  
"WORLD Science", Ajman,  
United Arab Emirates

**Publisher Office's address:**  
United Arab Emirates, Ajman

Amberjem Tower (E1)  
SM-Office-E1-1706A

E-mail: worldscience.uae@gmail.com

The authors are fully responsible for the facts mentioned in the articles. The opinions of the authors may not always coincide with the editorial boards point of view and impose no obligations on it.

<http://ws-conference.com/>

Tel. +971 56 498 67 38

## CONTENTS

## BIOLOGY

- Шинышера Г. Б., Есимов Б. К., Чилдибаев Ж. Б.**  
 АКТИВАЦИЯ ИССЛЕДОВАТЕЛЬСКОЙ ДЕЯТЕЛЬНОСТИ СТУДЕНТОВ ВО-ВРЕМЯ  
 УЧЕБНО-ПОЛЕВОЙ ПРАКТИКИ ПО ЗООЛОГИИ БЕСПОЗВОНОЧНЫХ..... 5
- Каленчук Т. В., Буглай В. А., Вечорко М. А., Ильючик Д. Н.**  
 ВЛИЯНИЕ РАЗЛИЧНЫХ ТИПОВ АУКСИНОВ НА РАЗВИТИЕ ПОБЕГОВ  
 RHODODENDRON HYBR. В КУЛЬТУРЕ IN VITRO И АДАПТАЦИЯ РАСТЕНИЙ-  
 РЕГЕНЕРАНТОВ В ЗАКРЫТОМ ГРУНТЕ..... 9
- Каленчук Т. В., Андрушойть Е. И., Грушевская Д. А., Хомич В. Э.**  
 ВЛИЯНИЕ БРАССИНОСТЕРОИДОВ НА МОРФОМЕТРИЧЕСКИЕ ПАРАМЕТРЫ  
 РОСТА И РАЗВИТИЯ КРУПНОЦВЕТКОВЫХ СОРТОВ КУЛЬТУРЫ  
 CHRYSANTHEMUM INDICUM (L.) В УСЛОВИЯХ ЗАКРЫТОГО ГРУНТА..... 13
- Каленчук Т. В., Андрушойть С. И., Жуков А. В., Серафимович Д. А.**  
 ВЛИЯНИЕ БИОСТИМУЛЯТОРОВ НА РОСТ И РАЗВИТИЕ  
 ПРЯНО-АРОМАТИЧЕСКОЙ КУЛЬТУРЫ БАЗИЛИКА..... 18

## MEDICINE

- Пахомова Д. К., Дундукова Р. С., Кузмина Д. Т., Горбунова А. В., Иманбаева А.**  
 РАСПРОСТРАНЕННОСТЬ НЕЙРОФИБРОМАТОЗА 1 ТИПА И ЗНАЧЕНИЕ  
 МЕРОПРИЯТИЙ ДЛЯ ЕГО РАННЕГО ВЫЯВЛЕНИЯ..... 22
- Dosybaeva G. N., Sadyrkhanova G. Zh., Dzhapparkulova A. B.**  
 EVALUATION OF RISK OF DEVELOPMENT OF ASTHENE-VEGETATIVE SYNDROME  
 IN WORKERS UNDER CONDITIONS OF EFFECTS OF PRODUCTION FACTORS..... 25
- Goroshko O. M., Korovenkova O. M., Palamar A. O.,  
 Zeleniuk V. H., Bogdan N. S., Rovinskyi O. O., Vasylynchuk O. Y.**  
 SIGNIFICANCE OF DISCIPLINE «INTRODUCTION TO PHARMACY» FOR TRAINING  
 OF MASTER DEGREE STUDENTS IN THE FIELD OF PHARMACY..... 26
- Kuzmina A. P., Lazarenko O. M.**  
 ROLE LABORATORY MARKERS OF ENDOTHELIAL DYSFUNCTION IN PATIENTS  
 WITH HYPERTENSION IN CONJUNCTION WITH GOUT..... 29
- Utelbayeva Z. T., Kim O. R., Jarikbayeva L. T., Tazhibayeva B. E.**  
 CLINICAL ANALYSIS OF THE RESULTS OF CORRECTION OF MYOPIA..... 31
- Vuchev D., Popova-Daskalova G., Anichina K.**  
 MONITORING OF PATIENTS WITH HYDATID DISEASE AFTER TREATMENT..... 32
- Zhaisakova D. E., Kaltaeva M. B.**  
 THE STUDY OF THE GENETIC CHARACTERISTICS OF SYNDROMIC AND  
 NONSYNDROMIC FORMS OF SENSORINEURAL HEARING LOSS..... 35
- Долматова И. А., Исмаилова С. К., Бердишева А. А., Утельбаева З. Т.,  
 Канатбекова А. К., Утжанова Ж. Е., Жайыққызы А., Бертілеуова Б. К.**  
 ЗНАЧЕНИЕ НЕКОТОРЫХ БИОХИМИЧЕСКИХ ПОКАЗАТЕЛЕЙ СЫВОРОТКИ  
 КРОВИ В ДИФФЕРЕНЦИАЛЬНОЙ ДИАГНОСТИКЕ ОПУХОЛЕЙ ОРБИТЫ..... 38
- Коржавов Ш. О., Шамсутдинов С. Б.,  
 Рахмонов Ш. Ф., Салохиддинов М. С., Рашидов Б. Б.**  
 РАЗВИТИЕ МИКРОЦИРКУЛЯТОРНОГО РУСЛА АФФЕКТОРОВ КОЖИ В  
 ПОСТНАТАЛЬНОМ ОНТОГЕНЕЗЕ..... 41

## ROLE LABORATORY MARKERS OF ENDOTHELIAL DYSFUNCTION IN PATIENTS WITH HYPERTENSION IN CONJUNCTION WITH GOUT

MD Kuzmina A. P.,  
aspirant Lazarenko O. M.

Ukraine, Krivoy Rog, Dnipropetrovsk Medical Academy of Health Ministry of Ukraine,  
Department of Therapy, Cardiology and Family Medicine

**Abstract.** The article presents the results of a prevalence of hypertension (HT) among patients with gout and the role of laboratory markers of endothelial dysfunction in this group of patients. We examined 50 male patients with gout. HT was registered in 84% of patients, moreover the gout was preceded by HT in 52% of cases. The increase in the number of patients with chronic gout is due to the increase in the degree of HT. Significantly greater number of affected joints as well as an incidence of subcutaneous tophi and nephrolithiasis have been reported in patients with HT. In addition, these patients have poor adherence to antihypertensive treatment, as only 42% of patients with HT receive treatment. Significantly higher levels of C-reactive protein (CRP), ristocetin-induced platelet aggregation (RIPA), intima-media thickness (IMT) have been reported in patients with HT combined with gout in comparison with patients without gout, reflecting a significant breach of endothelial function. The increase in the number of cardiovascular cases in patients with gout leads to the increase of CRP, RIPA, IMT, it causes doctor's need to monitor these indicators.

**Keywords:** hypertension, gout, endothelial dysfunction, laboratory markers, antihypertensive therapy.

**Introduction.** HT is one of the most common diseases in the world. The prevalence of gout among patients with HT is about 30-40% [2]. It is believed that the defeat of the cardiovascular system occurs approximately in 50% of patients in the first 6-10 years after the debut of the gout [8]. Early development of inflammatory, metabolic disorders and endothelial dysfunction in patients with HT combined with gout in the early stages of the disease can lead to the development of atherosclerosis and coronary artery disease in these patients [7].

The main cause of death of patients with gout – cardiovascular complications such as HT – 74%, coronary artery disease – 17%, myocardial infarction – 14%, heart failure – 11%; stroke – 10% [1].

The actual problem is the use of reasonable pathogenesis of antihypertensive therapy in patients with HT combined with gout that will provide adequate control of blood pressure during the day. From a practical point of view an appointment of combination of two or more drugs is needed to control most patients' blood pressure [6].

Therefore, **the aim of the study** was to examine the prevalence of HT in patients with gout and the role of laboratory markers of endothelial dysfunction in these patients.

**Methods.** We examined 50 male patients, whose average age was 54.5±5.6 years. Diagnosis of HT is set according to the criteria of the European Society of Cardiology and the European Society of Hypertension. The diagnosis of gout has been verified in accordance with the recommendations of the American College of Rheumatology and the European League Against Rheumatism 2015. Determination of CRP solid phase enzyme-linked immunoabsorbent assay (ELISA) was performed using reagents firm Dako (Denmark). Clinical and biochemical blood tests were performed using standardized methods. Determining the frequency of kidney damage in patients with gout was conducted on the results of the ultrasound of the kidneys. Evaluation of structural changes of the bone and surrounding tissue was performed using X-ray and ultrasonic methods. State of the common carotid artery (CCA) was estimated by the value of the intima-media thickness (IMT). In the control group included 30 healthy individuals representative of age and gender structure. Statistical analysis was performed using the application package STATISTICA 6.1.

**Results.** HT was registered in 84% of patients, moreover the gout was preceded by the HT in 52% of cases, the gout was previously diagnosed than HT in 48% of patients. First degree of HT was diagnosed in 10% of patients, 2 – in 30%, 3 – in 60%. The increase in the number of patients with chronic gout leads to the increase in the degree of HT. Average systolic blood pressure was 148.2±12.0 (125 to 190) mm Hg, diastolic blood pressure – 97.3±10.0 (75 to 120) mm Hg. Depending on the presence or absence of HT patients were divided into two groups: I – patients with HT (84%), II

– patients without HT (16%). It was found that significantly greater number of affected joints as well as the incidence of subcutaneous tophi and nephrolithiasis have been reported in patients with HT.

In average duration of the gout was 6 years old. The average number of affected joints – 5. In the first 5 years of disease the medical aid was requested by 36% of patients, 64% of patients asked for it later. Average serum urate level indicator was 8.2 mg/dL. CRP ranged between 3.0-18.6 mg/L. There was a range of different severity disease (40% of patients had tophi). The frequency of flare (past 12 months) – 5-26. Acute gouty arthritis was found in 4% of patients, chronic gouty arthritis – in 96% of patients. It has been studied a renal function in patients with gout. 26% of patients had nephrolithiasis, 14% – interstitial nephritis, 14% – chronic pyelonephritis, 20% – changes were detected.

It was found a direct correlation between systolic blood pressure and age ( $r=0.16$ ,  $p<0.05$ ), the number of affected joints ( $r=0.37$ ,  $p<0.05$ ), disease duration ( $r=0.38$ ,  $p<0.05$ ). It was established statistically significant difference of concentration of uric acid in patients with HT and without it  $8.5\pm 1.2$  mg/dL and  $7.8\pm 1.6$  mg/dL, respectively ( $p<0.05$ ).

The increasing of concentration of CRP more than 8.0 mg/L was observed in 32% of patients, it is combined with high hypercoagulable potential in 16%, determined by RIPA. It was established correlation between levels of CRP and clinical signs of the disease, the frequency of HT ( $r=0.33$ ;  $p<0.01$ ), metabolic syndrome ( $r=0.29$ ;  $p<0.01$ ), the presence of subcutaneous tophi ( $r=0.24$ ,  $p<0.05$ ), symptom «punched-out» ( $r=0.22$ ;  $p<0.05$ ). A direct correlation between CRP and RIPA with IMT ( $r=0.37$ ;  $p<0.05$ ) and ( $r=0.22$ ;  $p<0.05$ ), respectively. In addition, recent indicators correlated with certain risk factors for cardiovascular cases such as systolic blood pressure, total cholesterol, low-density lipoprotein cholesterol, triglycerides.

According to the study, patient's knowledge with gout about the availability of HT in a medical history was high – about 73% of patients. However, adherence to antihypertensive therapy was low, as only 42% of patients with HT were treated. According to the sociological survey of general practitioners ( $n=30$ ) on the treatment strategy of patients with HT combined with gout it is often appointed main groups of antihypertensive drugs with proven first line hypouricemic action (losartan, amlodipine), if necessary – statins. This therapeutic tactics is not contrary to the recommendations of the European League Against Rheumatism (2016), which stated that when the HT it should be preferred losartan and calcium antagonists, with hyperlipidemia – statins and, if possible, it should be avoided thiazide diuretics.

**Conclusion.** HT is a common disease in patients with gout, moreover the gout was preceded by HT. In addition, the course of gout with HT is heavier than those without HT. IMT significantly correlates with RIPA and with the level of CRP. The increase in CRP, RIPA, IMT leads to increase the risk of cardiovascular events in patients with gout, which causes doctor's need to monitor these indicators.

## REFERENCES

1. Clarson LE, Chandratre P, Hider SL. Increased cardiovascular mortality associated with gout: a systematic review and meta-analysis. *European Journal of Preventive Cardiology*. 2015;22(3):335-43.
2. Feig DI. Hyperuricemia and hypertension. *Advances in Chronic Kidney Disease*. 2012;19:377-385.
3. Neogi T, Jansen T, Dalbeth N. Gout Classification Criteria. *An American College of Rheumatology/European League Against Rheumatism Collaborative Initiative Arthritis Rheumatology*. 2015;67(10):2557-2568.
4. Richette P, Doherty M, Pascual E. 2016 updated EULAR evidence-based recommendations for the management of gout. *Annals of the Rheumatic Diseases*. 2016. Available from: <http://ard.bmj.com/content/early/2016/07/25/annrheumdis-2016-209707.full.pdf+html>.
5. Roddy E, Choi H. Epidemiology of Gout. *Rheumatic Disease Clinics of North America*. 2014;40(2):155-75.
6. Sattui ES, Gaffo LA. Treatment of hyperuricemia in gout: current therapeutic options, latest developments and clinical implications. *Therapeutic Advances in Musculoskeletal Disease*. 2016;8(4):145-59.
7. Stamp LK, Chapman PT. Gout and its comorbidities: implications for therapy. *Rheumatology*. 2013;52:34-44.
8. Van Durme C, Van Echteld IA et al. Cardiovascular risk factors and comorbidities in patients with hyperuricemia and/or gout: a systematic review of the literature. *J Rheumatol Suppl*. 2014;92:9-14.