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Hyperurechemia and Arterial Mutual Risk Factors for Hypertension

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Abstract:
The results of a number of studies indicate that HY is a predictor of the development of cardiovascular events and death in patients with hypertension and congestive heart failure, and, apparently, can be considered as an independent risk factor for cardiovascular complications.
According to a number of authors, the frequency of hypertension in patients with GU ranges from 36 to 58%, and in combination with metabolic syndrome increases to 72%.

Keywords: hyperurekemia, arterial hypertension, risk factors, cardiovascular pathology.

Introduction

The relevance of the problem of GU reflects the current wave of scientific publications related to it – we are talking about thousands of information materials per month[4,9]. The articles are devoted not only to the problems of hyperuricemia itself, but also to its impact on various aspects of internal diseases, in particular, cardiovascular complications provoked by the state[2,7,11]. "Today, it is extremely important for a rheumatologist, cardiologist, endocrinologist, therapist to know from which figures of uricemia it is necessary to begin the prevention of possible complications: the multidisciplinary approach in this matter is more than obvious! GU is closely associated with type 1 and type 2 diabetes mellitus (type 1 and type 2 diabetes mellitus) and metabolic syndrome (MS) in general [1,6,8].

At one time, we proposed to consider GI as one of the important signs of metabolic syndrome, which, unfortunately, was not done, although this important point largely determines the course of a number of diseases," the speaker wrote.

Today, the genetic background of GU is well known. In the largest genome-wide study of GWAS (Genome Wide Association Studies) with the participation of 147 thousand people, 183 loci affecting purine metabolism were identified [5,7,10]. The mechanisms of development of GU are associated with metabolic disorders and decreased excretion of MC. Interestingly, compared to the period from 1998 to 2011, the number of genes responsible for the exchange of MC, which were discovered by researchers in the next 8 years up to 2019, has more than tripled. This list includes genes responsible for glucose transport (GLUT9), as well as those programming the transport and metabolism of MK

– URAT1, ABCG2 (ATP-binding cassette transporter), SLC22A1 (polyspecific cationic transporter) and others [3,8,12].

The association of the prevalence of hyperuricemia with the place of residence is not in favor of urban residents, who are more likely to suffer from hyperuricemia, which, apparently, is again associated with a wider prevalence of other CVD risk factors: dyslipidemia, obesity and metabolic syndrome [2,5,10]. Using a model of multiple logistic regression, the relationship of hyperuricemia with cardiometabolic risk factors, the significant importance of factors such as obesity, the use of diuretics and lipid spectrum disorders (where triglycerides make the main contribution) was shown.

Professor Zhernakova noted that interesting data were obtained during the implementation of an observational program to assess epidemiological data on the determination of uric acid levels in patients with hypertension in combination with metabolic syndrome, diabetes mellitus and joint pain. The study included more than 9617 patients (56.6% men and 43.4% women). The criteria for inclusion in the study were age 30-80 years, cholesterol levels over 4.5 mmol/l, hypertension in combination with metabolic syndrome or diabetes mellitus, arthralgia. 33% of the patients included in the study had a combination of hypertension and diabetes mellitus, half of the patients had a combination of hypertension and metabolic syndrome, and more than 70% had hypertension and arthralgia. Hyperuricemia was distributed evenly among these patients, but it was most often observed in patients with hypertension and diabetes (69.6%), more often even than in patients with hypertension and arthralgia (64.2%), with hypertension and metabolic syndrome (61%) [6,9]. These data once again emphasize the importance of hyperuricemia as a cardiometabolic risk factor.

Another study was devoted to the study of real clinical practice for measuring uric acid levels in primary outpatient care.

The Purpose of the Study

The aim of the study was to study the problem of hyperuricemia as a risk factor for hypertension. To study the regional features of the prevalence of the main risk factors and the structure of comorbid pathology in patients with hypertension and hypertension. Materials and methods of research. 106 patients with hypertension and hypertension were included in the study. The inclusion was carried out with informed consent. Exclusion criteria: age of the patient over 75 years, acute or chronic exogenous intoxication, refusal of the patient from the study.

The Results of the Study

The results obtained in the course of the study showed the existence of correlations of HD with obesity, impaired lipoprotein metabolism (increased levels of OH, LDL, hypertriglyceridemia), as well as hypertension and damage to target organs. In patients with gout and BSU, the prognostic value of hypertension becomes especially unfavorable due to the high frequency of concomitant metabolic disorders.

In our study, a violation of lipoprotein metabolism was detected in 93% of patients with gout and 90% with BGU, and a combination of hypertriglyceridemia and GU in individuals with abdominal obesity with gout in 45%, with BGU in 22% of patients.

The relationship between urate dysmetabolism and obesity, primarily abdominal, is confirmed by a number of population studies indicating a significant incidence of BSU in overweight and obese people [7]. It is known that in such patients, the probability of damage to target organs is especially high (LVH, hypercreatininemia, microalbuminemia, an increase in the thickness of the intima media of the carotid arteries) [3].

Analysis of the data from our study indicates a combination of hyperuricemia with a more pronounced increase in blood pressure. In Bologna, gout and BSU were dominated by II st. (53 and 57%) and I st. AH (37 and 30%) with a predominance of irregular nutrition. insufficient convergence at night and the night hypothesis ("non-dippers" and "night pickers"). A number of studies have shown that in patients with HD, changes in the daily blood pressure profile were characterized by a tendency to decrease the degree of nocturnal decrease in DBP and an inversion of the circadian rhythm of DBP, as well as an increase in nocturnal blood pressure variability [2, 5, 11].

In connection with the above, the correction of metabolic disorders of MC against the background of hypertension should be considered among the priority measures of primary and secondary prevention, including, first of all, the impact on lifestyle features – restriction of foods containing a large number of purine bases, refusal to take alcohol and the appointment of adequate antihyperuricemic and antihypertensive therapy in patients with gout, and with asymptomatic hyperuricemia.

Conclusion

Thus, a reliable relationship between hyperuricemia and hypertension has now been established. At the same time, there is not enough data to recommend treatment for asymptomatic hyperuricemia. A clearer understanding of the biological role of uric acid and its relation to cardiovascular diseases is also needed. Although uric acid has an effect on pro-inflammatory vascular cells and adipocytes, it can also function as an antioxidant. It is widely discussed that uric acid may have a variety of effects in the development of cardiovascular diseases that have not yet been fully deciphered. The medical community is eagerly awaiting the results of these studies.

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