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POS1139

COMPARISON OF THE FREQUENCY OF DETECTION OF EARLY SIGNS OF ATHEROSCLEROSIS IN PATIENTS WITH CALCIUM PYROPHOSPHATE CRYSTAL DEPOSITION DISEASE AND OSTEOARTHRITIS

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Background: Crystal-induced inflammation can significantly increase cardiovascular risk (CVR) and cause early development of atherosclerosis [1]. However, no studies have been performed in patients with calcium pyrophosphate crystal deposition disease (CPPD).

Objectives: To compare the presence of atherosclerosis early signs (increased thickness of the intima-media complex (CMT)) in patients with CPPD and osteoarthritis (OA).

Methods: A cross-sectional study included 48 patients, aged 18 to 65 years, 26 patients with crystal-verified diagnosis of CPPD (McCarty criteria) (6 (23%) men and 20 (77%) women) and 22 patients with OA (7 (32%) men and 15 (68%) women). Exclusion criteria are the presence of other rheumatic diseases with symptoms of arthritis, diabetes mellitus, coronary heart disease (CHD), prior myocardial infarction, stroke or myocardial revascularization surgery, estimated glomerular filtration rate (eGFR) <60 ml/min/1.73 m², high and very high CVR on the SCORE scale. The examination of the patients included the history taking, assessment of anthropometric parameters and the following laboratory tests: determination of serum creatinine level (eGFR according to the MDRD formula), total cholesterol (TC), high density lipoprotein cholesterol (HDL cholesterol) and low density lipoprotein cholesterol (LDL cholesterol), C-reactive protein (CRP). Doppler ultrasound of the carotid arteries with an assessment of the thickness of the intima media complex (CMT) was made for all patients - CMT up to 0.9 mm was taken as the norm, CMT > 0.9 mm and <1.3 mm as increased, and CMT >1.3 mm was regarded as an atherosclerotic plaque. Statistica 12.0 package was used for statistical data processing.

Results: The groups were completely comparable by gender, age and all laboratory parameters (see Table 1), an increase in CRP >5 mg/l was more often detected in patients with CPPD - 31% vs 14% patients with OA (p=0.16).

Table 1. Clinical characteristics of patients included in the study.

Parameters	CPPD (n=26)	OA (n=22)	p value (reliable at p<0,05)
Age, years M±SD	55.9±5.9	52.4±8.3	0.14
Gender, men/women, n (%)	6 (23)/20 (77)	7 (32)/15 (68)	0.50
Smoking, n (%)	5 (19)	6 (27)	0.50
Systolic blood pressure, mmHg, M±SD	134±20	127±15	0.19
Arterial hypertension, n (%)	13 (50)	10 (45)	0.75
Family history of CVD, n %	6 (23)	7 (32)	0.50
TC, mmol/L, M±SD	5.4±1.3	5.3±1.3	0.95
TC >5.0 mmol/L, n (%)	17 (65)	10 (45)	0.17
HDL, mmol/L M±SD	1.7±0.5	1.4±0.5	0.10
LDL, mmol/L, M±SD	2.9±1.3	3.4±1.4	0.33
Creatinine, µmol/L, M±SD	73.2±13.8	78.9±11.5	0.16
CRP, mg/l, Me [25-75th percentiles]	1.1 [0.6; 6.4]	1.2 [0.3; 2.8]	0.60
CRP ≥5 mg/l, n (%)	8 (31)	3 (14)	0.16

Mean CMT values on the right (0.76±0.22 mm vs 0.70±0.18 mm) and on the left (0.75±0.18 mm vs 0.70±0.17 mm) did not significantly differ in CPPD and OA (p=0.34 and 0.32, respectively), the maximum CMT values on the right (0.67±0.16 mm vs 0.67±0.16 mm) and on the left (0.67±0.14 mm vs 0.66±0.16 mm) with CPPD and OA were also comparable (p=0.95 and 0.77, respectively). However, an increase in CMT > 0.9 mm was found in 13 (50%) patients with CPPD and only 5 (23%) with OA (p=0.02). No increase in CMT >1.3 mm was found in patients of both groups.

Conclusion: Early signs of atherosclerosis are detected in 50% of patients with CPPD without clinical signs of atherosclerosis and with low or moderate CVR

according to SCORE, significantly more often than in patients with OA (23%), which can be reflection of chronic crystal-induced inflammation.

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POS1140

RISK FACTORS FOR THE DEVELOPMENT OF DIABETES MELLITUS IN PATIENTS WITH GOUT ACCORDING TO A 6-YEAR PROSPECTIVE FOLLOW-UP STUDY

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Background: Gout is often associated with diabetes mellitus (DM), but the role of serum uric acid (sUA) and urate-lowering drugs in its development in patients with gout remains controversial [1].

Objectives: To study risk factors for DM in patients with gout based on the results of long-term prospective follow-up study.

Methods: The prospective study included 444 patients with a crystal-verified diagnosis of gout, aged ≥18 years, 49 (11%) women, 395 (89%) men. Patients were followed up at the V.A. Nasonova Research Institute of Rheumatology from 2010 to January 2021, the median follow-up was 6.1 [2.8; 7.8] years. The exclusion criteria were the presence of other rheumatic diseases with symptoms of arthritis, DM. DM was diagnosed on the 1998 WHO criteria. The following parameters were considered as risk factors: gender, family history for diabetes mellitus, body mass index (BMI) >25 kg/m² and > 30 kg/m², waist volume ≥88 cm for women and ≥102 cm for men, alcohol consumption > 20 units per week, chronic kidney disease (CKD), intake of diuretics and glucocorticoids, and serum total cholesterol >5 mmol/l, triglycerides >2.25 mmol/l, serum C-reactive protein (CRP) level > 5 mg/l, as well as clinical manifestations of gout: subcutaneous tophi, polyarthritis (simultaneous involvement of ≥5 joints), intake of urate-lowering drugs, sUA (> 480 µmol/L, > 420 µmol/L, > 360 µmol/L, > 300 µmol/L). Statistica 12.0 package was used for statistical data processing.

Results: A total of 444 patients were included, the mean age was 51.0±12.9 years, the median follow-up was 6.1 [2.8; 7.8] years. In dynamics: 35 (8%) patients died, 6 (1%) patients were not available, 403 patients were examined (44 (11%) - women and 359 (89%) - men). 290 (72%) patients received urate-lowering therapy (263 (65%) patients used allopurinol, 27 (7%) - febuxostat). The target sUA <360 µmol/L was reached by 165 (41%) patients and <300 µmol/L - by 92 (23%) patients. All patients with sUA <300 µmol/L received urate-lowering therapy, 62 (67%) patients used allopurinol, 17 (18%) - febuxostat, 13 (14%) - uricosuric drugs. Diabetes mellitus was developed in 106 (26%) patients. The factors influencing the risk of developing diabetes were - the presence of diabetes in family history (odds ratio (OR) 2.27, 95% confidence interval (CI) 1.37; 3.76); BMI > 30 kg / m² (OR 1.79, 95% CI 1.14; 2.80), diuretics (OR 2.32, 95% CI 1.36; 3.96) and sUA > 300 µmol / l (OR 2.89, 95% CI 1.50, 5.56).

Conclusion: The risk of developing DM in patients with gout is associated with sUA > 300 µmol/l, which may be one of the probable reasons for choosing this as a target level. Large prospective studies are needed to confirm the antidiabetic effect of urate-lowering drugs.

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