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Evaluation Of Indicators of Instrumental Methods Of Cardiovascular Pathology Research In Patients With Psoriatic Arthritis

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Abstract. According to modern researchers, one of the most common comorbid diseases in patients with psoriatic arthritis (PsA) is cardiovascular disease (CVD). The incidence of CVD in PsA can be as high as 78%. In general, it was found that in PsA patients, coronary heart disease (CHD) and arterial hypertension (AH) occupy a special place, because they are objectively traceable markers of cardiovascular pathology **(**CVP) in PsA in real clinical practice.

Key words: psoriatic arthritis, arterial hypertension, coronary heart disease, instrumental methods of research.

Introduction. Psoriatic arthritis (PsA) is a chronic inflammatory disease affecting the joints, skin and nails. Over the past few decades, significant advances have been made in the understanding and treatment of PsA [1,3].
However, new evidence suggests that cardiovascular pathology may represent an important but often neglected aspect of this condition. PsA is increasingly recognized as a systemic inflammatory disease that extends beyond the musculoskeletal system. Recent studies have revealed a complex relationship between PsA and cardiovascular pathology [2,4,7].
Studies have consistently shown that patients with PsA have a higher prevalence of various cardiovascular risk factors and comorbidities such as arterial hypertension, dyslipidemia, obesity, insulin resistance, and metabolic syndrome compared to the general population [4,5,6].

Purpose of the study: evaluation of indicators of instrumental methods of cardiovascular pathology in patients with psoriatic arthritis.

Material and methods of the study. The study involved 125 individuals who signed an informed written consent. All patients depending on the presence of cardiovascular diseases (CVD) and PsA were randomized into three groups. Group I combined 62 patients with PsA complicated by CVD, group II included 32 patients with psoriatic arthritis (PsA) who did not have concomitant CVD. As an additional comparative (III) group, we included patients with clear signs of CVD without PsA.
All patients in all study groups underwent clinical, laboratory and instrumental methods of investigation. All patients underwent instrumental methods of examination, such as echocardiography, electrocardiography and duplex scanning of carotid arteries.

Results of the study. Such functional methods as electrocardiography (ECG), echocardiography (EchoCG) and carotid artery duplex study were used for complex assessment of cardiovascular system (CVS) in the examined patients. ECG was performed in 12 conventional leads, with standard recording speed - 25 mm/sec and amplitude - 10 mm/mv (Table 1).

Table 1
ECG evaluation in I, II and III study groups (n=125)

Parameters of ECG changes	I		II		III		Total	
	n	%	n	%	n	%	n	%
The presence of left ventricular	32	51,7	-	-	16	51,6	48	38,4

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hypertrophy								
Presence of metabolic, dystrophic and ischemic disorders	27	43,5	-	-	14	45,2	41	32,8
Presence of rhythm and conduction disorders	3	4,8	-	-	1	3,2	4	3,2
Total	62	100	-	-	31	100	93	74,4

In group I, 32 (51.7%) patients had left ventricular hypertrophy (LVH), 27 (43.5%) patients had metabolic, dystrophic and ischemic disorders, and 3 (4.8%) patients had rhythm and conduction disorders. In group III of the study 16 (51,6%) patients were found to have LVH, 14 (45,2%) patients had metabolic, dystrophic and ischemic disorders, and 1 (3,2%) patient had rhythm and conduction disorders (coefficient of differences for all parameters p>0,05). Based on the above data, cardiovascular abnormalities on ECG in groups I and III were identified. No signs of ECG abnormalities were detected in group II of the study.

Functional EchoCG study was performed in all studied groups (I, II, III and in the control group) to analyze and evaluate morphofunctional and structural-functional indices of the heart (Table 2).

Table 2

EchoCG evaluation in I, II and III study groups (n=125)

Parameters of EchoCG changes	**I**		**II**		**III**		**Total**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Presence of LVH	32	51,7	-	-	16	51,6	48	38,4
Left ventricular systolic dilatation (LVSD)	2	3,2	-	-	2	6,5	4	3,2
Left ventricular diastolic dilatation (LVDD)	13	20,9	-	-	11	35,5	24	19,2
Presence of rhythm and conduction disorders	3	4,8	-	-	1	3,2	4	3,2
Total	50	80,7	-	-	30	96,7	80	64

In group I, 32 (51.7%) patients were found to have LVH, 2 (3.2%) patients had SDLD, 13 (20.9%) patients had LVSD, and 3 (4.8%) patients had rhythm and conduction disturbances. In group III of the study 16 (51,6%) patients were found to have LVH, 2 (6,5%) patients had LVSD, 11 (35,5%) patients had LVDD and 1 (3,2%) patient had rhythm and conduction disturbances (coefficient of differences for all parameters p>0,05). Based on the above data, cardiovascular abnormalities were identified on EchoCG in groups I and III. In group II of the study no signs of abnormalities on EchoCG were detected.

Atherosclerosis (AS) in the common carotid arteries (CCA), the thickness of the thickness of the intima-media complex (TIMC) was measured and the presence of atherosclerotic plaque (ATP) was detected by duplex examination of the carotid arteries in all study groups in M- and V-mode (Table 3)

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Table 3
Evaluation of carotid artery duplex study in I, II and III study groups (n=125)

Parameters of duplex examination CCA	I		II		III		Всего	
	n	%	n	%	n	%	n	%
TIMC≥0,9 mm	8	12,9	17	53,1	5	16,1	25	20
TIMC 0,9-1,3 mm	44	70,9	15	46,9	23	74,2	59	47,2
TIMC ≤1,3 mm	10	16,2	-	-	3	9,7	13	10,4
Average TIMC	1,1±0,3		0,8±0,2		1,1±0,2		1,0±0,2	
Availability of ATP	10	16,2	-	-	3	9,7	13	10,4
Total	54	87,1	15	46,9	26	81,2	95	76

In group I of the study, 8 (12.9%) patients had TIMC within normal limits, 44 (70.9%) patients had TIMC between 0.9 and 1.3 and 10 (16.2%) patients had TIMC more than 1.3 mm, 10 (16.2%) patients had ATP. The mean TIMC in group I was 1.1±0.3. In group II of the study, 17 (53.1%) patients had TIMC within the normal range, and 15 (46.9%) patients had TIMC between 0.9 and 1.3. Patients with TIMC greater than 1.3 mm and with the presence of ATP were not observed in study group II. The mean TIMC in group II was 0.8±0.2. In study group III, 5 (16.1%) patients had TIMC within normal range, 23 (74.2%) patients had TIMC between 0.9 and 1.3 and 3 (9.7%) patients had TIMC more than 1.3 mm and 3 (9.7%) patients had presence of ATP. The mean TIMC in group I was 1.1±0.2. The mean TIMC in all groups was equal to 1.0±0.2. In 25 (20%) patients TIMC was within the normal range, in 59 (47,2%) patients TIMC was from 0.9 to 1.3 and in 13 (10,4%) patients TIMC was more than 1.3 mm, in 13 (10,4%) patients presence of ATP was observed (coefficient of differences for all parameters p>0,05). Analyzing the above data we can determine the frequency of TIMC thickening and the presence of ATP in groups I and III of the study, in contrast to group II.

Conclusion. Thus, such functional methods as ECG, EchoCG and carotid artery duplex examination were used for complex assessment of the cardiovascular system in the examined patients. ECG revealed cardiovascular abnormalities in groups I and III. No signs of abnormalities were detected on ECG in group II of the study. EchoCG showed cardiovascular abnormalities in groups I and III. No signs of pathologies were detected in group II of the study. Analyzing duplex study of carotid arteries it is possible to determine frequent occurrence of TCIM thickening and presence of ATB in I and III study groups, in contrast to II group (difference coefficient for all parameters p>0,05).

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