

SCENAR IN INSTABILE ANGINA

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Follow-up study included 24 patients after Q-wave acute myocardial infarction (AMI) without thrombolysis. All the patients were admitted from the emergency care hospital to the cardiological center 3-4 weeks after the infarction for follow-up care, rehabilitation and decision on further surgery. Patients were diagnosed with early postinfarction angina as they had typical angina episodes that were effectively managed by nitroglycerin, and certain ECG changes.

Random sampling divided the patients into 2 groups. The patients had 2-3 angina episodes a day. In gender and age the groups didn't differ statistically. Patients from the Group 1 received standard treatment that included aspirin, clopidogrel, beta 2-adrenoreceptors, ACE inhibitors, nitrates and statins, and lasted 3 weeks. Patients from Group 2 besides the standard treatment also received SCENAR-therapy. SCENAR course included 8-9 sessions administered every other day. Treatment techniques: alternation every second session in the IDM – '3 pathways, 6 points', 'collar zone', 'forehead, adrenal glands'. At the end of each session stimulation in the SDM of the area with the complaints or heart projection. We also analyzed the indices of the oxidative stress in the blood plasma before and after the treatment course.

Results of study and therapy are given in the Table 1. They show that adding SCENAR into the treatment greatly decreases the amount of angina episodes a day, and after the treatment 82% of patients are discharged from the cardiological center with no angina episodes at all, while in the control group the amount is 31%.

The dosage of nitroglycerin on discharge greatly decreases, if compared with the dosage when the treatment started and in the control group. Main hemodynamic parameters greatly decreased, if compared with the parameters at the beginning of the treatment, but didn't differ in the Group 1 and 2 on discharge. Only 'double product', which demonstrates oxygen consumption of heart, was significantly lower in the patients that received SCENAR therapy.

Table 1

Main hemodynamic parameters and some clinical data of patients with early postinfarction angina depending on the treatment administered (M±m)

Parameters, measuring unit	Group 1 n=13		Group 2 n=11 (SCENAR)	
	before treatment	after treatment	before treatment	after treatment
Amount of angina episodes a day	2.54±0.35	0.92±0.15 P ₁ < 0.001	2.45±0.37	0.18±0.07 P ₂ < 0.001 P ₃ < 0.01
Amount and % of patients with no				

angina episodes on discharge		4 (31%)		9 (82%) *
Nitroglycerin, tab/day.	3.08±0.66	1.23±0.25 P ₁ < 0.001	3.7±0.56	0.27±0.14 P ₂ < 0.001 P ₃ < 0.01
BP syst., mmHg, % of changes	129.1±3.9	115.9±3.9 (-10.2) P ₁ < 0.05	135.0±4.7	118.5±5.8 (-12.2) P ₂ < 0.05
BP diast., mmHg, % of changes	90.0±3.5	78.5±5.1 (-12.8) P ₁ < 0.05	84.1±3.2	73.6±2.5 (-12.5) P ₂ < 0.05
HR, heartbeats per min, % of changes	75.2±4.3	66.1±2.7 (-12.1) P ₁ < 0.05	84.1±4.2	73.6±4.0 (-12.5) P ₂ < 0.05
MBP, mmHg, % of changes	106.4±3.5	94.2±4.3 (-11.5) P ₁ < 0.05	105.5±4.4	94.5±3.6 (-12.4) P ₂ < 0.05
Double product, усл. ед., % of changes	97.1±3.4	76.6±2.4 (-21.1) P ₁ < 0.001	113.5±4.2	87.2±4.0 (-23.2) P ₂ < 0.001 P ₃ < 0.05

Note: P1 - significance of differences in Group 1 after the treatment, P2 - significance of differences in Group 2 after the treatment, P3 - significance of differences between Group 1 and 2 after the treatment; * - $\alpha < 0,01$ - significance of differences between Group 2 and 1 after the treatment (Mann Whitney test). In brackets – parameter change in percent relative to its group before the treatment.

Table 2 shows intensity of LPO of blood plasma, activity of catalase and ceruloplasmin in patients with early postinfarction angina depending on the treatment administered.

Table 2

Intensity of LPO of blood plasma, activity of catalase and ceruloplasmin in patients with early postinfarction angina depending on the treatment administered (M±m)

Parameters, measuring unit	Healthy (n=33)	Group 1 n=13		Group 2 n=11 (SCENAR)	
		before treatment	after treatment	before treatment	after treatment
Conjugated dienes, nmol/mL	16.6 ± 1,4	24.5 ± 2.9 (+47.6) P1 < 0.001	26.4 ± 2.1 (+59) P2 < 0.001	21.4 ± 2.8 (+28.9) P4 < 0.01	16.6 ± 2.1 (0) P7 < 0.01
Malonic dialdehyde, nmol/mL	33.4 ± 3.0	37.0 ± 2.7 (+10.8)	47.1 ± 2.8 (+41) P2 < 0.001 P3 < 0.05	34.9 ± 2.1 (+4.5)	28.0 ± 2.5 (-16.2) P6 < 0.05 P7 < 0.001
Schiff bases, arbitrary unit/mL	1.80 ± 0.19	1.58 ± 0.17 (-12.2)	1.58 ± 0.15 (-12.2)	2.51 ± 0.19 (+39.4) P4 < 0.05	1.82 ± 0.16 (+1.1) P6 < 0.05
Catalase,	15.6 ± 1.8	23.6 ± 2.1	23.1 ± 1.9	18.1 ± 1.9	13.9 ± 1.4

nmol H ₂ O ₂ / m		(+51) P1 < 0.001	(+47.8) P2 < 0.001	(-16.1)	(-5.7) P6 < 0.05 P7 < 0.001
Ceruloplasmin, μmol/L	1.10 ±0.14	0.97 ±0.15 (-11.8)	1.66 ±0.14 (+50.9) P ₂ < 0.01 P ₃ < 0.001	1.00 ±0.16 (-9.1)	0.97 ±0.17 (-11.8) P ₇ < 0.01

In brackets – parameter change in percentage relative to its group before the treatment.

Note: P1 – significance of differences between Group 1 before treatment and healthy people, P2 - significance of differences between Group 1 after treatment and healthy people, P3 - significance of differences in Group 1 before and after the treatment;

P4 - significance of differences between Group 2 before treatment and healthy people, P5 - significance of differences between Group 2 after treatment and healthy people, P6 - significance of differences in Group 2 before and after the treatment

P7 - significance of differences between Group 2 and 1 after the treatment;

In brackets – index change in percent relative to the healthy group.

Table 2 shows that at the beginning of the treatment blood parameters of patients from both groups manifest significant oxidative stress shown by the increase of CD, MDA and SB. On discharge patients from the control group had subsequent increase of CD and MDA indices, while in the SCENAR-group no such increase observed. Extremely high level of SB in the Group 2 at the beginning of the therapy on discharge was equal to the indices of healthy people. .

Analysis of catalase and ceruloplasmin activity in patients from Group 1 shows that after the treatment manifestations of oxidative stress were not arrested. That signs constantly high level of catalase activity and great increase of ceruloplasmin activity. No such manifestations observed in patients from the SCENAR-group.

The obtained results show that some patients after Q-wave acute myocardial infarction admitted to the cardiological center 3-4 weeks after the infarction were diagnosed with early postinfarction angina with different amount of pain episodes a day and manifestations of oxidative stress in the blood plasma. Standard therapy is ineffective in managing oxidative stress and less effective by clinical parameters, while complemented SCENAR treatment gives positive results.