

## Dynamics of heart rate turbulence changes and risk factors following myocardial infarction treated with primary PTCA

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**Background:** The significance of heart rate turbulence (HRT) as a prognostic determinant after myocardial infarction (MI) is well known. The impact of the changes of HRT parameters following MI is not clear.

**Aim:** The aim of this study was to assess the connection between the established coronary artery disease (CAD) risk factors and the dynamics of HRT changes after MI.

**Material and methods:** The study population consisted of 85 pts with acute MI treated with successful primary PTCA in whom the prevalence of risk factors of CAD was recorded. On the third day after primary PTCA and following 12 months 24-hour Holter monitoring was performed in all pts. The HRT parameters (TO and TS) calculated from both Holter recordings were compared for each patient.

**Results:** During one-year follow up there were no new coronary events and all pts were asymptomatic. After 12 months in 51 pts (group 1) the increase of TS (from  $8.51 \pm 5.93$  to  $10.87 \pm 6.76$ ,  $p < 0.01$ ) and the decrease of TO (from  $-1.96 \pm 1.84$  to  $-4.21 \pm 2.98$ ,  $p < 0.01$ ) was recorded. Remaining 34 pts (group 2) presented with the decrease of TS (from  $7.41 \pm 4.23$  to  $3.22 \pm 2.21$ ) and increase of TO (from  $-1.47 \pm 1.84$  to  $-0.24 \pm 1.22$ ). The comparison between both groups in regard to the presence of risk factors is shown in the Table.

Risk factor	Group 1	Group 2	p
Smoking	39.2%	90.3%	< 0.001
Hyperlipidemia	70.6%	87.1%	< 0.05
Diabetes	3.9%	48.3%	< 0.001
Arterial hypertension	39.2%	51.6%	< 0.01
CRP > 6 mg/dl	25.5%	87.1%	< 0.001

Among low-risk, asymptomatic patients treated with primary PTCA those in whom the HRT changed for worse (increase of TO and decrease of TS) during one year postinfarction period more often had the risk factors connected with autonomic and/or endothelial dysfunction.

**Conclusions:** 1. Following 12 months after successful primary PTCA the significant changes of HRT parameters are present. 2. One year after MI the increase of TS and decrease of TO was observed mainly in pts with unfavourable risk factors profile. 3. In postinfarction pts with multiple risk factors HRT parameters should be monitored because of the tendency for changing towards prognostically unfavourable values.