

QUANTITATIVE PERFUSION SPECT: CORRELATION BETWEEN CHANGES OF EJECTION FRACTION AND SEVERITY OF PERFUSION ABNORMALITIES IN PATIENTS WITH MYOCARDIAL INFARCTION

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AIM: The purpose of this study was to evaluate and correlate changes of post-stress (EFps) and rest ejection fraction (EFr) and perfusion scores in patients (pts) with previous myocardial infarction (MI).

MATERIAL AND METHODS: We studied 17 pts, 12 male and 5 female, mean age 55 years, using two-day protocol. Stress tests were either exercise (13/17), or dipyridamole (4/17). Acquisitions were started 45 min after i.v. application of 925 MBq ^{99m}Tc -MIBI. Quantification of gSPECT was performed with 4D-MSPECT.

RESULTS: Myocardial perfusion in all pts was quantified by 17-segment analysis. Moderate abnormal summed difference score (SDS: 8.9 ± 2.5) was found. Post stress EFps was significantly lower than EFr ($64.5 \pm 10.7\%$ vs. $68.9 \pm 12.3\%$, $p < 0.05$, respectively). There was no difference found between end-diastolic volumes (EDVps: 106.7 ± 20.5 ml vs. EDVr: 102 ± 18.3 ml, $p > 0.05$, respectively). End-systolic volume (ESV) significantly increased in post-stress period in comparison to rest study (39.4 ± 7.3 ml vs. 34.0 ± 6.2 ml, $p < 0.05$, respectively). In addition good negative correlation was found ($r = -0.68$), between difference EFps-EFr and total perfusion scores, as well as with SDS score ($r = -0.62$, $p < 0.05$, respectively).

CONCLUSION: Our preliminary results suggested that in pts with previous MI and reversible perfusion defects decreased EFps is probably due to an increase in ESVps and is also in correlation with severity of perfusion pattern.