WHICH INDEXES OF MICROCIRCULATORY RESISTANCE AFTER PRIMARY PERCUTANEOUS CORONARY INTERVENTION ARE LARGER DECREASED BY INTRACORONARY NICORANDIL? NORMAL INDEX OF MICROCIRCULATORY RESISTANCE LEVEL?

i2 Poster Contributions
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Background: Although microvascular dysfunction following percutaneous coronary intervention (PCI) can be evaluated with the baseline index of microcirculatory resistance (IMR), no method of the treatment has been established. We investigated which IMR after primary PCI are larger decreased by intracoronary nicorandil (Nic), a hybrid K-ATP channel opener and nitric oxide donor.

Methods: Forty first STEMI patients underwent IMR measurement immediately after primary PCI as baseline, and 10 minutes after intracoronary Nic of 2mg. The patients were stratified into tertiles of baseline IMR (Low, Intermediate and High group).

Results: In the 40 patients, baseline IMR after primary PCI was 26.5 (18.1 - 48.3) U, with a mean value of 35.7 U. Following intracoronary Nic, IMR was significantly decreased to 16.8 (13.5 - 21.9) U, with a mean value of 19.8 U (p<0.0001). In the patients with intermediate IMR (baseline IMR 21 ~<37) and those with high IMR (baseline IMR ≥37), intracoronary Nic decreased IMR significantly (intermediate IMR group: 25.9 [23.5 - 28.7] U to 15.9 [14.5 - 18.4] U, p=0.0002; high IMR group: 67.1 [43.1 - 82.9] U to 29.0 [20.6 - 40.8] U, p=0.0001). However, in the low IMR group (baseline IMR <21), no significant change in IMR due to intracoronary Nic was observed (13.5 [8.4 - 18.4] U to 11.5 [9.2 - 15.4] U, p=0.2510).

Conclusion: Intracoronary Nic after primary PCI can significantly improve IMR in patients with IMR≥21U and the normal IMR level after primary PCI can be considered less than 21U.

Figure: Changes in IMR in patients stratified into tertiles of baseline IMR.