DISTAL PROTECTION CAN PRESERVE INDEX OF MICROCIRCULATORY RESISTANCE IN PATIENTS WITH ST-SEGMENT ELEVATION ANTERIOR WALL MYOCARDIAL INFARCTION

i2 Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 9:30 a.m.-10:30 a.m.

Session Title: DES I and Acute Coronary Syndromes
Abstract Category: PCI - Acute MI
Presentation Number: 2501-490

Authors: Noritoshi Ito, Shinsuke Nanto, Yasuji Doi, Hirotaka Sawano, Daisaku Masuda, Shizuya Yamashita, Mai Hatano, Daisuke Tonomura, Yuma Kurozumi, Tomoaki Natsukawa, Yusuke Ito, Kazuyuki Oka, Jiro Ooba, Taizo Hasegawa, Makoto Kobayashi, Hiroshi Ichiyang, Koji Akashi, Koichi Otsuya, Shoji Kaibe, Ken-ichiro Okada, Yasuyuki Hayashi, Tatsuro Kai, Toru Hayashi, Osaka Saiseikai Senri Hospital, Suita, Japan, Osaka University Graduate School of Medicine, Suita, Japan

Background: In a previous study, a novel index of microcirculatory resistance (IMR) appears to be a better predictor of microvascular dysfunction and recovery of left ventricular function after ST-segment elevation myocardial infarction (STEMI). Although coronary microvascular dysfunction following percutaneous coronary intervention (PCI) in patients with STEMI can be evaluated with IMR, no method of the treatment has been established. A distal protection device (DP) may protect the microcirculation from embolic debris.

Methods: Thirty-six consecutive patients with anterior STEMI were randomized into two groups of primary PCI with or without DP: stenting without DP (non-DP group, n=17) and with DP (DP group, n=19). DP was conducted with FILTRAP™ (NIPRO, Japan). Following final coronary angiography after successful PCI, IMR was measured using PressureWire™ Certus (St. Jude Medical, USA) at maximal hyperemia.

Results: The averaged IMR values of the 36 patients with STEMI after primary PCI was 31.6U. The IMR values in the DP group were significantly lower than those of the non-DP group (37.2±23.2U v.s. 26.6±25.8U, p<0.05).

Conclusion: The utilization of DP for patients with STEMI during primary PCI could significantly preserve the IMR values after the procedure suggesting the effectiveness of its preservation of myocardial microcirculation as an adjunctive therapy to PCI.

Figure: Comparisons by the determination of the index of microcirculatory resistance