COMPARISON OF INFLAMMATORY MARKERS FOR PREDICTION OF NEOINTIMAL HYPERPLASIA PROLIFERATION AFTER DRUG-ELUTING STENT IMPLANTATION

i2 Poster Contributions
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Background: Inflammation plays a pivotal role in the proliferation of neointimal hyperplasia (NIH) after stent implantation. So inflammatory response might reflect NIH proliferation. We compared the relationship between inflammatory markers and proliferation of NIH after DES implantation.

Methods: We performed PCI with a single DES in 42 consecutive stable angina patients (26 men; 59.7±10.1 years of age). The plasma hs-CRP, IL-6 and MMP-9 values were serially measured before the PCI and at 24, 72 hours after the PCI. The difference (Δ) of each inflammatory markers between baseline and each stages after intervention was calculated. Patients were grouped into quartiles according to inflammatory marker and Δ inflammatory marker values at each stage. An angiography and IVUS study were performed at pre and post PCI and 9 months after the PCI in all patients.

Results: No relationship was found between preprocedural hs-CRP value and NIH proliferation (P=0.228). However, a significant positive correlation was noted between the Δ hs-CRP level and NIH volume at 24 hr (r=0.435, P<0.05). There was also trend for positive correlation between the Δ hs-CRP level and NIH volume at 72 hr (r=0.277, P=.076). The NIH volumes were 2.7 (6.4) mm³ in the first and 20.1 (25.1) mm³ (P<0.05) in the fourth quartiles of hs-CRP value at 24 hr after PCI. Moreover, the NIH volumes were 3.3 (8.6) mm³ in the first and 20.9 (26.4) mm³ (P<0.05) in the fourth quartiles of Δ hs-CRP level at 24 hr after PCI. Although preprocedural IL-6 value and IL-6 value at 72 hr after PCI were correlated with NIH proliferation (r=0.337, P<0.05, r=0.435, P<0.05, respectively), the Δ IL-6 at any stage was not correlated with NIH proliferation. Neither preprocedural MMP-9 nor the Δ MMP-9 at any stage were not correlated with NIH proliferation.

Conclusions: Among three inflammatory markers, the inflammatory response after PCI, measured hs-CRP values, but not preprocedural hs-CRP value, predict NIH proliferation after DES implantation.