— 53 —

Predictors of IVUS (longitudinal view) findings of compromised sidebranching vessels during PCI in bifurcation lesions

Department of Internal Medicine, College of Medicine, Pusan National University
Joon Hoon Jeong ,Yong Hyun Park, Sung Gook Song, Jeong Su Kim, Jae Hoon Choi, Tae Kun Lee, June Hong Kim, Kook-Jin Chun, Taek Jong Hong, Yung Woo Shin

Background: Side branch compromise during percutaneous transluminal coronary angioplasty(PTCA) is well-recognized complication. We assessed the intravascular ultrasound(IVUS) predictors and result of major side branch compromise following percutaneous coronary intervention(PCI). Method:Data from coronary angiogram & IVUS study (GalaxyTM IVUS imaging system) of 29 patients with bifurcation lesion among 50 patients from January 2003 to May 2003 were retrospectively analyzed. IVUS images using AtlantisTM SR plus catheter, high definition 40Mhz,were obtained before PCI. After the aquisition of IVUS image, we reconstructed longitudinal image in a plane that could show the parent and branch vessel simultaneously. Reconstructed Longitudinal IVUS images of 30 bifurcating sites (sidebranch size > 1.5 mm) covered by intracoronary stents were analyzed. Sidebranch type, take-off angle, parent-branch junctional angle (defined by an acute angle at the junction point in reconstructed longitudinal IVUS image) and branch ostial involvement of disease were evaluated. Result: Six out of 30 (20%) stent-covered sidebranches were compromised (80.0 ± 8.2 %) by coronary angiogram, But, non-compromised sidebranch (80%) were 12.0 ± 15.5% ($p < 0.01$). Take-off angle of compromised sidebranch were 60.0 ± 12..2 degree which were small than non-compromise sidebranch (81.0 ± 10.7 degree). But, not statistically significant. Parent-branch junctional angle was significantly small in compromise branch than non-compromised (20.0 vs 80 degree, $p < 0.01$). Angiographically take-off angle were different from that of IVUS and no significant predictor of compromised sidebranch. Four out of 30 (13%) sidebranches were ostial involvement and all lesions were compromised after PCI. Conclusion: These findings indicate that the IVUS, especially longitudinal reconstruction view, was superior diagnostic tool than conventional coronary angiogram in predictors of compromised sidebranch during PCI. Also, parent-branch junctional angle in IVUS was major predictor of compromised sidebranch.

— 54 —

Human in-stent restenosis tissue consists of an abundant extracellular matrix without cell proliferation.

Seonam University College of Medicine, The Heart Center of Chonnam National University Hospital, The department of Foreinsic Medicine of Chonnam National University Hospital
Ok Young Park1, Youngkeun Ahn, Jung Ha Kim, Young Joon Hong, Ji-Hyun Lim, Hyung Wook Park, Han Gyun Kim, Ju Han Kim, Weon Kim, Myung Ho Jeong, Jong Tae Park, Jeong Gwan Cho, Jong Chun Park, Jung Chaee Kang

BACKGROUND: In-stent restenosis (ISR) is a shortcoming of percutaneous coronary revascularization. There is only limited data on the cellular and extracellular composition changes after stent deployment. The goal of this study was to examine the cellular and extracellular composition of human coronary in-stent restenosis tissue. **METHODS:** ISR tissue retrieved by means of directional coronary atherectomy from 6 coronary lesions (5 LAD, 1 RCA) was subjected to histomorphological analyses and immunocytochemistry. Cell proliferation was assessed with immunocytochemistry for proliferation cell nuclear antigen (PCNA). **RESULTS:** The ISR atherectomy specimens consisted of smooth muscle cells, with inflammatory cell (mac rophage)s and organizing thrombus. Specimens had rich extracellular matrix consist of interstitial collagen and proteoglycan. But cell proliferation wasnot found in 6 specimens at all (Table 1). **CONCLUSION:**ISR lesions contained an abundant proteoglycan matrix and a paucity of proliferating cells. Future therapeutic strategies for ISR should include targeting extracellular matrix production.

Table 1. In-stent restenosis tissue obtained from 6 patients

	Age/Sex	Dx	Interval	Myxoid	ECM grade	Inflammatory cell	Trombus	PCNA index
1	52/M	AMI	7.5 Month	0%	5	-,-,-/+	-	0
2	61/M	UAP	12 Month	50%	2	-/+	-	0
3	48/F	AMI	7Month	50%	1	-/+	+	0
4	43/M	AMI	11.3Month	10%	3	-	-	0
5	61/M	UAP	6.5Month	80%	3	+	-	0
6	59/M	UAP	5.4Month	15%	4	-/+	-	0

ECM Grade; 1: PG as a dominant component, 2: PG > collagen, 3: PGcollagen, 4: PG < collagen, 5: collagen as a dominant component