

## Evaluation of Neointimal Tissue Characterization in Bare-Metal Stent Restenosis Using Integrated Backscatter Intravascular Ultrasound

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**Background:** Integrated backscatter intravascular ultrasound (IB-IVUS) enables to investigate on-line tissue characteristics of coronary plaque during PCI. The aim of this study is to evaluate neointimal hyperplasia in bare-metal stent (BMS) restenosis using IB-IVUS. **Methods:** From November 2007 to September 2009, we have analyzed 6 months follow-up angiography in 166 lesions (TLR: 17.5%). We could obtain IB-IVUS data from 24 lesions, including all TLR lesions (n=18). We compared neointimal tissue component with coronary plaque component at proximal reference site. We also compared neointimal tissue component between TLR lesions and non-TLR lesions. **Results:** The pattern of in-stent restenosis was mostly diffuse proliferative. IB-IVUS analysis showed that neointimal tissue was mainly composed of fibrosis (70%), which exhibited homogeneous tissue characteristics throughout the stent. At the site of minimum lumen area, neointima contained more fibrosis and less lipid component compared with proximal reference site. There were no significant differences in neointimal components between TLR lesions and non-TLR lesions. Out of 18 TLR lesions, 11 lesions (61%) underwent statin treatment for 6 months. However, there were no significant differences of neointimal components between statin group and non-statin group. **Conclusions:** IB-IVUS analysis revealed that neointimal tissue was mainly composed of fibrosis, which exhibited homogeneous tissue characteristics throughout the stent. There was no significant histological effect of statin treatment on neointimal hyperplasia at 6-month follow-up.