Results of Intravascular Ultrasound Analysis of the Debulking and Stenting in Restenosis Elimination (DESIRE) Study

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Background: The DESIRE (DEbulking and Stenting In Restenosis Elimination) study is a randomized multicenter study (22 sites) to clarify the efficacy of the debulking using directional coronary atherectomy prior to stenting on long-term outcomes evaluated by intravascular ultrasound.

Methods: Totally 501 patients (pts) were enrolled and randomized to debulking prior to stenting arm (DCA/S: 251 pts) and stenting alone arm (SA: 250 pts). 7Fr AtheroCath-GTO and 7Fr-G were used in the DCA/S group, and stent implantation was performed with the ACS Multilink stent in both groups. Intravascular ultrasound (IVUS) was used for the assessment of an optimal debulking prior to stenting. IVUS images were obtained using motorized pull back (0.5mm/sec). To date, complete serial (pre-, post-intervention and 6-month follow-up) IVUS studies have been analyzed in 119 patients (DCA/S: 69, SA: 50). IVUS measurements, including vessel area, stent area, lumen area, and neointimal area inside the stent, were compared between the DCA/S and the SA arms.

Results: There were no significant differences in baseline patient/lesion characteristics between the two arms. Average tissue weight removed in DCA/S arm was 26.4±16.3mg. Acute lumen area gain and minimal lumen area at post-intervention were significantly larger in the DCA/S group (6.96 ± 2.15 vs. 5.82 ± 1.84 mm^2, P <0.05 and 8.54 ± 1.84 vs 7.41 ± 1.97 mm^2, p<0.005, respectively). At 6-month follow-up, neointimal areas inside the stent were similar in the two arms (3.25 ± 2.41 vs 3.89 ± 2.12 mm^2, p=0.12). Consequently, the DCA/S arm showed a significantly larger minimal lumen area than the SA arm (6.12 ± 2.66 vs 4.90 ± 2.37 mm^2, p<0.005) at 6-month. Final IVUS results of total pts enrolled in this study will be presented.

Conclusions: IVUS results of the DESIRE trial suggested that the DCA/S arm obtained a larger acute lumen area than the SA arm. Late lumen area loss was similar in both arms. Follow-up lumen area in the DCA/S was larger than SA arm.