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Short and mid-term outcomes of OCT guided PCI in patients with ACS : a retrospective comparison with intravascular ultrasound and angiography

Purpose: Role of FD-OCT guidance for acute coronary syndrome (ACS) has not been validated yet.

Methods: In this study, we retrospectively studied 350 consecutive ACS patients who underwent primary PCI (age 69.6 ± 12.2 years, 262 men) during 2011 to 2013. According to the method of PCI guidance, patients were classified into 3 categories, OCT (n = 143), intravascular ultrasound (IVUS: n = 66), and angiography groups (n = 141). The method of PCI guidance was selected by each operator's decision. Clinical background, safety issue, procedural success, in-hospital and 10-month mortality were compared among 3 groups.

Results: OCT group less frequently had advanced renal dysfunction (eGFR < 30 ml/min/1.73 m²) (OCT, IVUS, angiography group, 6.3, 22.7, and 9.2%, respectively, $P < 0.005$), and cardiogenic shock status (7.7, 24.2, and 7.8%, respectively, $P < 0.001$). The procedural success defined as TIMI 3 flow was tended to be higher in OCT group than other 2 groups (94.4, 90.9, and 93.6%, respectively, $P=0.63$). The incidence of procedure-related complications and non-fatal clinical adverse events were low and similar among 3 groups. In-hospital mortality rate was significantly lower (4.2, 12.1, and 6.4%, respectively, $P < 0.0001$), and 10-month mortality was tended to be lower (6.3, 15.2, and 7.8%, respectively $p < 0.09$) in patients guided with OCT group than IVUS group.

Conclusion: In a single center cohort, OCT-guided PCI was feasible in ACS patients without severe renal dysfunction and cardiogenic shock. OCT guidance may be effective in treating such subgroup of ACS patients.