Elective Percutaneous Coronary Interventions and Transcatheter Aortic Valve Implantation

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Background:
The presence of coronary artery disease (CAD) negatively impact procedural outcomes and long-term survival after transcatheter aortic valve implantation (TAVI).The management of obstructive CAD before TAVI is not yet well established. Both the appropriate revascularization strategy and the timing of interventions are a matter for controversy. We assess the safety and effectiveness of performing elective percutaneous coronary interventions (PCI) before TAVI.

Methods:
Patients with severe symptomatic aortic stenosis (AS) (n=249) that underwent TAVI were divided into two groups: patients that underwent PCI before TAVI and patients that underwent TAVI with no coronary intervention. Procedural endpoints, device success and adverse events were considered according to the Valve Academic Research Consortium (VARC) definitions.

Results:
65 patients underwent PCI before TAVI and 184 patients underwent TAVI alone. Mean age was 83.8±5.5 in the PCI+TAVI group compared to 82.9±5.4 in the TAVI alone group. The mean duration of follow-up was 17 months (range: 6-36 months). Mean duration from PCI to TAVI was 66.1±48 days. Rates of 30-day stroke, major bleeding, major vascular complications and myocardial infarction did not differ between the groups. The VARC-defined combined safety endpoint did not differ between groups (7.7% VS 6.5%% for patient treated with PCI+TAVI vs. TAVI alone respectively, p=0.78). All-cause mortality at 30-days was 1.5 % for patients treated with PCI+TAVI compared to 2.7% for patients treated with PAVI alone. All-cause 6-month mortality was 3.1% in the PCI+TAVI group compared to 8.2% in the TAVI alone group (p=0.25). Overall mortality during the follow-up period was lower in the PCI+TAVI group (HR=0.33; p=0.045, Cox regression).

Conclusions:
Performing PCI before TAVI in elderly patients with significant CAD and severe AS is feasible and safe. This combined approach did not increase the per-procedural risk or the mid-term all-cause mortality.