Incidence and outcomes of direct stenting compared to conventional stenting in the current era

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Background. Direct stenting (DS) was proposed as an alternative strategy to conventional stenting (CS) with balloon pre-dilatation. The feasibility of this technic was already proved. However, previous studies reported conflicting results on clinical outcomes. Therefore we aim to evaluate the incidence and clinical outcomes of patients treated with DS in the modern era.

Methods. Clinical and procedural records, and angiographic studies were reviewed. In-hospital clinical follow-up were obtained.

Results. Between January 2010 and March 2010, 307 patients underwent percutaneous coronary intervention (PCI). The mean age was 64±12 years with a predominance of male (69%). They had hypertension in 64%, dyslipidemia in 72%, diabetes in 29% and were suffering from chronic renal failure in 15% of cases. Coronary artery disease was known in 36% of patients, 24% had a previous PCI and 15% have already had a myocardial infarction (MI). Clinical presentation was acute coronary syndrome in 84% of patients. The mean left ventricular ejection fraction was 55±13%. Pre-treatment with dual antiplatelet therapy was present in 98% of cases. Heparine and bivalirudine were used in 70% and 30% of cases respectively. The average number of treated vessels was 3±1.5 and the mean stent diameter and length were 3.0±0.5 and 20±7mm respectively. The median fluoroscopy time and contrast volume were 11 min [8-17] and 175 ml [145-250], respectively. Drug eluted stents (DES) were used in in 47% of cases. The overall rate of angiographic complication was low (1.4%). The in-hospital MACE (death, MI and stroke) rate was 4.2% and stent thrombosis occurred in 0.3%. DS only, CS only or both DS-CS were performed in 25% (n=75), 58% (n=177) and 16% (n=50) of patients, respectively. The DS group had less DES (29% vs. 56%; p <.001) less post-dilatation (68% vs. 81%; p<.001) but had a larger stent diameter (3.1 ± 0.5 vs. 2.9 ± 0.5 ; p<.001) and shorter stent length (19.4 ± 7.1 vs. 21.2 ± 7.5 ; p= 0.007). DS only patients were younger (60±11 vs. 66±11; p<0.001), had a lower prevalence of hypertension (48% vs. 69%; p=0.002), diabetes (18% vs. 35%; p=0.009) and prior MI (8% vs. 19%; p=0.036), but presented more often in STEMI (44% vs. 17%; p<0.001). However no significant difference was noted regarding the rate of in-hospital MACE (5.3% vs. 3.4%; p=0.490).

Conclusion. DS approach was mainly performed in younger patients who presented with ACS. It was performed in more than one third of cases. This approach was not associated with a high rate of angiographic or acute clinical events.

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