CLINICAL EFFECTS OF ROUTINE HIGH-PRESSURE POSTDILATATION OF DRUG-ELUTING STENTS

i2 Poster Contributions
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Authors: Vincenzo Pasceri, Diego Irini, Francesco Pelliccia, Christian Pristipino, Adriana Roncella, Antonio Varveri, Giulio Speciale, San Filippo Neri Hospital, Rome, Italy

Background: Optimal expansion and apposition of drug-eluting stents may reduce risk of thrombosis and restenosis during the follow-up. Although IVUS-guided stent implantation may help avoiding these issues, IVUS cannot be used in all PCI. It has been suggested that high-pressure postdilatation using non compliant balloons may achieve better stent expansion and improve clinical outcomes, but this hypothesis has not been prospectively tested.

Methods: Since July 2008 we adopted a strategy of routine postdilatation with non compliant balloons (with nominal balloon diameter ≥ stent diameter and inflation pressure ≥ 14 atm) in all cases of DES implantation, while previously postdilatation was performed for suboptimal angiographic results (selective postdilatation group). Only acute ST-elevation myocardial infarction, vein grafts interventions and IVUS-guided procedures were excluded.

Results: The first 250 consecutive cases with routine postdilatation (age 63±8, 80% males, 100% with postdilatation) were compared with 250 patients who received DES in the year before performed previously (age 63±8, 80% males, postdilatation used in 28%) with a one-year clinical follow-up. The two groups were similar for main risk factors, incidence of diabetes (28% vs. 27%), vessel size (3.1±0.7 vs. 3.1±0.7 mm) and lesion length (37±23 vs. 35±23 mm). At one-year, incidence of MACE was 7% in the routine postdilatation vs. 13% in the selective postdilatation group (P=0.03), incidence of target vessel revascularization (TVR) was 6% vs. 11% respectively (P=0.05) and incidence of myocardial infarction/death 3% vs. 4%. Incidence of stent thrombosis (definite+probable) was 1.2% vs. 0% (P=0.32).

Conclusions: These results suggest that a strategy of routine postdilatation with a non compliant balloon may improve outcomes after DES implantation. This strategy could be tested in a randomised prospective trial.