Percutaneous coronary intervention of unprotected left main stenosis in high risk patients:

Acute and long-term outcome

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To date no prospective trials have been undertaken to compare the relative merits and risks of percutaneous coronary intervention (PCI) and coronary artery bypass grafting for the treatment of unprotected left main stenosis (ULMS). However, the interest of PCI is growing with recent advances in stenting and debulking techniques because more reliable lumen expansion might be obtained and better long term outcome has been reported particularly in patients (pts) with good ventricle.

We report our experience of PCI of ULMS in 40 high risk patients (pts) defined as those with poor left ventricular function, age > 80 years, unstable ischemic syndrome or poor bypass candidate. Mean age was 64 ± 11 years, 13 were > 70 years old and 3 were > 80 years, 29 were male. Seventeen (42.5%) pts had LVEF <40%, 14 (35%) were poor CABG candidate. Indication of the procedure was stable angina in 28 (70%) pts., unstable angina in 5 (12.5%) pts., acute myocardial infarction 1 (2.5%) pts, silent ischemia in 6 (15%) pts. Stenosis location was at the ostium in 6 pts, in body in 1 pt and at the bifurcation in 33 pts. One pt. had instent restenosis of previously implanted stent in the left main-left circumflex artery ostium, 33 (82.5%) pts had multivessel disease. All pts underwent stenting, 6 (15%) after cutting balloon dilatation. 20 (50%) after rotablation and 5 (12.5%) after directional coronary atherectomy. Thirty seven (92.5%) pts underwent complete revascularization in one session, 4 had T-stenting, none had IABP assistance, none received GP b/ a inhibitors, IVUS was used in 9 (22.5%) pts. Procedual success was 100% and clinical success was 97.5%. None developed major in-hospital complications of Q-wave M1, CABG; but one patient who underwent stenting to treat an acute infarction died after 6 days because of hemorrhagic stroke. Other major complications included ventricular fibrillation in 1 pt who had an acute infarction, pericardial tamponade in 1 pt because of guide wire perforation, spiral dissection in 1 pt, while none showed slow/no-flow phenomenon. Thirty-nine (97.5%) were discharged alive at 4 ± 2 days. At a mean follow-up of 15 ± 10 months, 5 pts had repeat PCI [2(5%) TLR and 3 (7.5%) non-TLR], 9 crossed over to CABG [7(17.5%) TLR and 2 (5%) non-TLR], none developed Q-wave or non-Q-wave infarction, and 3 died, of whom 1 was cardiac, 1 noncardiac and 1 of unknown cause. Angiographic follow-up performed in 29 (73%) pts. showed restenosis (DS<50%) in 8 (28%) pts. Mean reference vessel diameter was 3.80 ± 0.40 mm, MLD pre-procedure 0.98 ± 0.42 mm, post-procedure 3.72 ± 0.44 mm and at follow-up 2.77 ± 1.07 mm. Statistical analysis did not identify any single or multiple factors predictive of short and long-term outcome, probably because of the small number of the pts. Subgroup analysis in pts. with ULMS at the bifurcation site suggested that rota-stenting might be preferred when DCA was difficult or not advisable to be performed; i.e: in the presence of significant calcification, extreme angulation, long lesion > 20 mm extending from the LM to any or both branches, or instent restenosis of previously implanted stent on the LM when there is a need to cross the stent.