Comparison of demographic and procedural characteristics of patients with elective percutaneous coronary interventions according to the presence of in-stent restenosis: biannual results from the University Hospital Merkur

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Background: In-stent restenosis (ISR) is an important clinical problem. Underlying cause of ISR can be variable and is believed to be different from the pathophysiology of atherosclerosis in the native vessels.[1] Such different mechanisms could, at least in part, be explained by different demographic characteristics of ISR and non-ISR patients. They could also lead to different approaches to percutaneous coronary interventions (PCI) in those two groups.

Patients and Methods: We conducted this retrospective analysis, of our interventional data, in order to find such differences. In years 2014 and 2015 there were 657 elective PCI procedures (41 ISR and 616 non ISR interventions) in our institution.

Results: We found no significant differences in major demographic characteristics in ISR vs. non-ISR patients (**Table 1**). Analysis of procedural characteristics (**Table 2**) showed that we were probably more aggressive with predilatation in ISR (number of balloons used 1.53±0.59 vs. 1.34±0.77; p=0.03). We were less keen to implant a stent in ISR patients (21.9% vs. 82.3%; p<0.001) but when implanted one it was more frequently a drug eluting stent (100% vs. 36.9%; p<0.001). We used more drug eluting balloons for ISR (65.8% vs. 3.7%; p<0.001). No other significant differences in procedural characteristics examined were found.

TABLE 1. Demographic characteristics of patients according to the presence of in-stent restenosis.

Characteristic	ISR (n=41)	Non ISR (n=616)	p-value
Age (mean±SD)	65.9±7.9	64.3±9.7	0.38
Male sex (n/%)	31/77.5	434/70.4	0.48
Hypertension (n/%)	40/97.5	587/95.3	0.52
Hyperlipidaemia (n/%)	41/100	566/91.8	0.06
Smoking (n/%)	9/21.9	177/28.7	0.56
Diabetes (n/%)	11/26.8	208/33.7	0.92
Previous MI (n/%)	22/53.6	284/46.1	0.89
Previous PCI (n/%)	41/100	193/31.3	<0.001*
Previous CABG (n/%)	1/2.4	19/3.0	0.25

ISR = in-stent restenosis; MI = myocardial infarction; PCI = percutaneous coronary intervention; CABG = coronary artery bypass graft; n = number; SD = standard deviation. Mann Whitney test was used for continuous and chi-square for nominal variables. *p<0.05

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Conclusion: There were no significant demographic differences in ISR vs. non-ISR patients treated in our institution. Procedural differences that were found reflect, at least in some part, well known recommendations for ISR interventions. On the other hand, they also probably reflect specific organizational and financial issues of our catheterization laboratory.

TABLE 2. Procedural characetristic.

Characteristic	ISR (n=41)	Non ISR (n=616)	p-value
LAD//Cx//RCA//Graft//LMCA (n)	15//5//19//1//1	187/161/258/1/9	0.47
Predilatation (n/%)	41/100	557/90.4	0.14
Number of balloons – predilatation (mean±SD)	1.53±0.59	1.34±0.77	0.03*
Stent implantation (n/%)	9/21.9	507/82.3	<0.001*
Number of implanted stents (mean± SD)	1.0±0.31	1.12±0.51	0.31
DES penetration (n/%)	9/100	219/36.9	<0,001*
DEB application (n/%)	27/65.8	23/3.7	<0.001*
Postdilatation (n/%)	1/2.4	62/10.0	0.10
Fluoro time in min (mean±SD)	8.04±4.51	10.09±9.24	0.69
Contrast in ml (mean±SD)	159.41±67.26	165.15±77.49	0.76

ISR = in-stent restenosis; LAD = left anterior descending; Cx = circumflex; RCA = right coronary artery; LMCA = left-main coronary artery; DES = drug-eluting stent; DEB = drug-eluting balloon; n = number; SD = standard deviation. Mann Whitney test was used for continuous and chi-square for nominal variables. *p<0.05

LITERATURE

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