Incidence of in-stent restenosis over 13 years - a study based on a national registry

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BACKGROUNG

- In-stent restenosis (ISR) is one drawback of coronary angioplasty with stent implantation.
- Although the current use of stents has reduced the rate of restenosis, neointimal still persists, therefore it has not been completely eliminated.

PURPOSE

We investigated the incidence of in-stent restenosis, its clinical presentation and treatment from a national registry.

METHODS

From all patients (pts) undergoing percutaneous coronary intervention (PCI) inserted in national registry from **2002 to 2014**,
we **selected those who had previous history of PCI (n=15326)**

ISR was **defined** as **diameter stenosis ≥ 50%** in stent segment, **being selected the interventions** in which, **at least, 1 IRS lesion was treated**.

n=3069

- **2002-2003** (group 1, n=179, 5.8%) **– Bare metal stent era**
- **2004-2008** (group 2,n=816, 26.6%) **– 1st generation DES era**
- **2009-2014** (group 3, n=2074, 67.6%) **– 2nd generation DES era**.

- For each group we compared clinical features and treatment

RESULTS

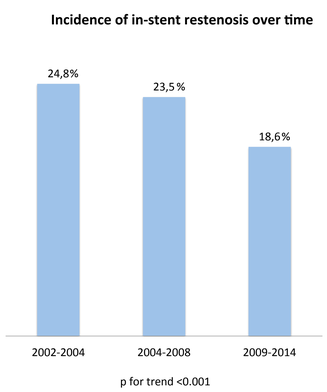


Table I - Patient's demographic and clinical features.

	2002-2004	2004-2008	2009-2014	p value
Demographic Characteristics				
Age (years)	62±11	64±11	65±11	0.01
Men (%)	74	75,7	78,6	0.120
BMI (m2/kg)	26.91±3.64	27.36±3.72	27.63±4.03	0.022
Cardiovascular Risk Factors				
Hypertension (%)	63.7	75.6	78.4	<0.001
Dyslipidemia (%)	61.5	68.5	73.9	<0.001
Diabetes (%)	31.3	33.5	38.5	0.04
Smoking (%)	14	16.9	18.4	0.09
Past Medical History				
Myocardial Infarction (%)	39,7	56,9	61,1	<0.001
CABG (%)	23,5	14,8	12,3	<0.001
Heart failure (%)	0.0	1,5	4.5	<0.001
Stroke (%)	5.0	6.0	5.6	0.85
Renal dysfunction	7.3	9.6	8.5	0.53

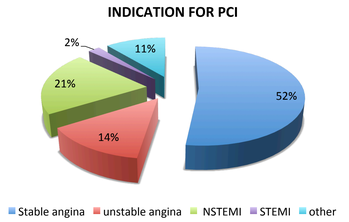
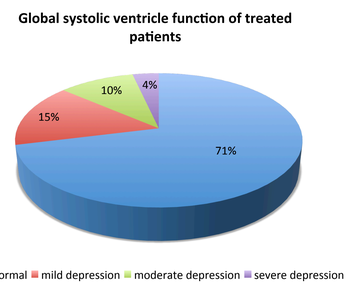


Table II – Indication for PCI, over time.

	2002-2004	2004-2008	2009-2014	p value
Stable angina (%)	25.7	44.2	41.1	<0.001
unstable angina(%)	1.1	1.8	3.7	<0.001
NSTEMI (%)	18.4	9.6	18.8	<0.001
STEMI (%)	0.6	1.5	1.9	<0.001



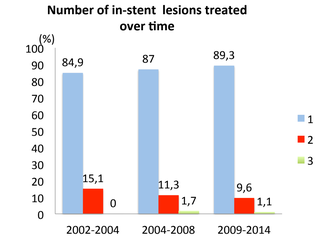
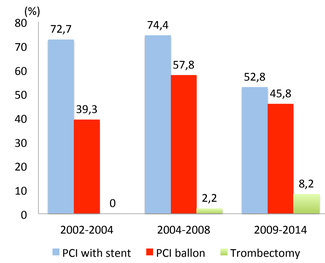
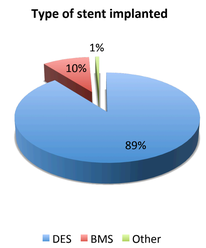


Table III – Type of vessels and complexity of lesions treated, over time.

Vessels treated with ISR	2002-2004	2004-2008	2009-2014	p value
TC (%)	1.5	2.0	1.3	<0.001
DA (%)	34.5	39.8	42.4	<0.001
Cx (%)	18.9	22.1	20.7	<0.001
CD (%)	36.9	32.2	33.3	<0.001
Bypass (%)	8.3	3.9	2.3	<0.001
Type of IRS lesions treated	**2002-2004**	**2004-2008**	**2009-2014**	**Total**	**p value**
Type A lesion (%)	50.5	37.7	4.6	16.6	<0.001
Type B lesion (%)	37.4	45.2	57.5	52.9	<0.001
Type C lesion (%)	12.1	17.1	37.9	30.6	<0.001
Bifurcation lesion (%)	5.9	10.2	7.0	7.8	0.010





CONCLUSIONS

- In spite of increasing in risk profile of patients over time, it was observed a reduction of incidence of in-stent restenosis and also for multiple in-stent restenosis lesions.
- An increasing number of interventions avoiding second stent implantation, was observed.
- It's retrospective study, based on a national registry with inherent bias of filling /missing data.

The authors have nothing to declare.