Development of 1- and 5-year outcomes between 2006 and 2018 in patients with uncomplicated ST-elevation myocardial infarctions and successful percutaneous coronary intervention

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Introduction: While modern P2Y12-inhibitors and drug eluting stents (DES) have changed therapeutic options in patients with ST-elevation mycoardial infarctions (STEMI) during the last decade, there is few data on their impact in real world registries. Aim of the present study was to analyze changes in mortality and major adverse cardiac and cererobrovascular event rates (MACCE: death, reinfarction,stroke) during the last 13 years in patients with uncomplicated STEMI after successful percutaneous coronary intervention (PCI).

Methods: All consecutive STEMI-patients, admitted between 2006 and 2018 and successfully treated with PCI (TIMI flow ≥2) in a large German heart center entered analysis. To reduce confounding pts. with STEMI complicated by heart failure and pts. >70 yrs. of age were excluded.

Results: A STEMI-cohort of 5016 pts. was analysed, with a mean age of 55.9±8 yrs., 19% females, 16% diabetics and 59% smokers. At the beginning of the study period (2006) no patient was treated with ticagrelor/prasugrel and only 5% had a DES implanted. In 2018 92% were treated with prasugrel or ticagrelor and 96% with a DES. The reduction in 1-year-mortality during the study period was not significant: 2006-11: 3.4%, 2012-19: 3.1%, p=0.4, however the reduction in 1-year-MACCE was: 2006-11: 8.3%, 2012-18: 5.7%, p<0.01. This could mainly be attributed to a reduction in reinfarctions: 2006-11: 4.9%, 2012-18: 2.8%, p<0.01. Subgroup analysis revealed that with the exception of diabetics all subgroups showed a significant decline in MACCE-rates during the study period . It was more pronounced in women, non-smokers and patients with a high socioeconomic status (SES) (Table). Analysis of 5-year-data revealed a significant reduction in both 5-year-mortality (2006-09: 9.1%, 2010-13: 6.8%, p<0.01) and 5-year-MACCE-rates: 2006-09: 19.3%, 2010-13: 14.5%, p<0.01.

Conclusions: This analysis of registry data over a study period of 13 years reveals, that for patients with uncomplicated STEMI and successful PCI a significantly better 1- and 5-year-outcome could be achieved during the last years. This improvement of prognosis was more pronounced in specific subgroups, such as women, non-diabetics and patients with higher SES.

	Men	Women	Smokers	Non-smokers	Diabetics	Non-diabetics	Low SES	High SES
MACCE 2006-2011 (%)	7.9	10.3	7,2	10.1	11.9	7.7	9.4	8.5
MACCE 2012-2018 (%)	5.6	5.9	5.1	6.4	10.0	4.8	6.4	4.9
HR	0.71	0.59	0.69	0.62	0.84	0.62	0.68	0.57
95% CI	0.55-0.91	0.36-0.94	0.51-0.95	0.48-0.81	0.5-1.3	0.5-0.8	0.46-1.0	0.32-1.0
P	<0.01	0.03	0,02	<0.01	0.3	<0.01	0.049	0.049