

# ASS, beta blocker and ACE inhibitors as initial Therapy for acute myocardial infarction: Results from the Berlin Myocardial Infarction Registry



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**Purpose:** Early reperfusion therapy improves the prognosis of patients with acute myocardial infarction. The same is true for the treatment of these patients with ASS, beta blocker and ACE inhibitors. These drugs improve the prognosis of patients suffered from AMI and should be used as soon as possible in the early phase of AMI in the absence of contraindications. However, data of beneficial effects of these drugs are derived from clinical trials, investigating the effects of one drug alone and not of the combination of all three agents. These data are mainly derived from the pre reperfusion era. The purpose of our study was to compare the influence of the combination of all three drugs (ccm), given in the early phase of AMI(<48h) in hospital mortality (HM) in patients suffering from AMI, with patients who did not.

**Methods:** In the years 1999 and 2000 the data from 3436 pts. suffering from AMI, were prospectively collected from 25 hospitals in Berlin. These data include the pts characteristics, time intervalls, pre hospital treatment, as well as in hospital treatment (<48 h and 48h - discharge). This data were collected in the database of the Berlin Myocardial Infarction Registry (BHIR). The data from patients receiving a complete co-medication of ASS, BB and ACEI (ccm) within 48h of AMI were compared with data of pts. who did not.

**Results:** Data regarding the treatment of AMI pts. were complete in 81% (2781/3436) pts. RT was performed in 1741 pts (59%). HM was significantly lower in pts with RT compared to pts without (RT 8.6% / no RT 19.3% OR 0.4 CI 0.32;0.49 p= 0,005) (Figure1).

	complete Comedication	no complete Comedication	
age	65 +/- 13	67 +/- 14	p<0.05
female	32%	39%	p<0.05
hypertension	67%	56%	p<0.05
hypercholester.	42%	35%	p<0.05
diabetes	28%	28%	n.s.
CHF	19%	24%	p<0.05
shock	4%	10%	p<0.05
ant. Wall MI	47%	46%	n.s.

Table 1: patients characteristics of pts with complete and not complete comedication

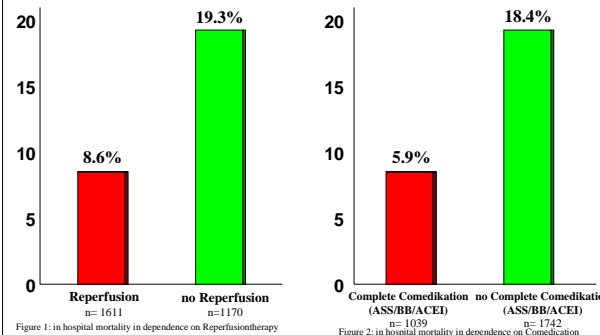


Figure 1: in hospital mortality in dependence on Reperfusiontherapy

Figure 2: in hospital mortality in dependence on Comedication

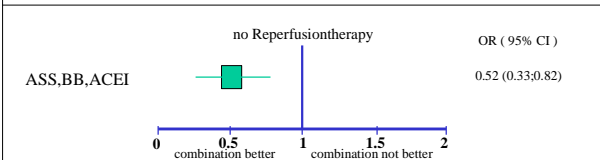


Figure 3: multivariate analysis of the effect of ccm in pts without reperfusion therapy

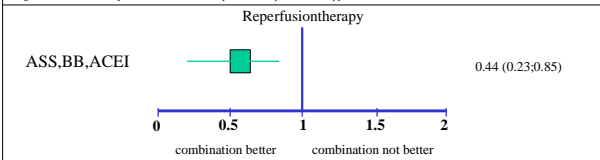


Figure 4: multivariate analysis of the effect of ccm in pts with reperfusion therapy

From 2781 pts 92% were initially treated with ASS, 68% with BB's and 50% with ACEI's. 38% (1039/2781) of pts. were treated with the complete combination of all drugs (ccm). Contraindications against one of these drugs were present in 14% of all pts. In hospital mortality in ccm pts. was 5.9% (61/1039). The in hospital mortality was 18,4% in pts. without ccm. These unadjusted differences were statistically significant (OR 0,31 CI 0,23;0,41) (Figure 2).

The pts characteristics as well as the mode of therapy in both groups were different (Table 1), due to this present study does not represent a randomized trial but a registry. To eliminate the influence of confounding factors of mortality a multivariate analyses was performed. After adjustment for these confounding factors the differences remain. The positive effect of CCM remained present regardless of the performance of a RT (no RT OR 0.52 CI 0.33;0.82 / RT OR 0.44 CI 0.23;0.85)(Figure 3 + 4).

**Conclusion:** Reperfusion therapy improves in hospital mortality in AMI. The initial therapy with ASS, BB and ACEI also improves the in hospital mortality significantly. This improvement is independent of reperfusion therapy. The data of the present study emphasizes the importance of combining ASS, BB and ACEI. The combination of all three drugs is still used in only one third of pts. It remains much improvement regarding the consequent combination of all three drugs can be achieved.