

## Underuse of Early $\beta$ -Blocker Therapy for Myocardial Infarction

Krumholz HM, Radford MJ, Wang Y, Chen J, Marciniak T. Early beta-blocker therapy for acute myocardial infarction in elderly patients. *Ann Intern Med* 1999;131:648-54.

### Study Overview

**Objective.** To determine how often  $\beta$  blockers are used as early treatment of acute myocardial infarction (AMI) in older patients, to identify predictors of early  $\beta$ -blocker use, and to determine the association between early  $\beta$ -blocker use and in-hospital mortality.

**Design.** Retrospective observational study using data extracted from hospital medical records.

**Setting and participants.** Medicare patients 65 years of age or older who had no contraindications to  $\beta$ -blocker therapy and who received hospital care for AMI in 1 of the 4414 non-government, acute care hospitals in the United States during an 8-month sample period in 1994 or 1995. Patients were excluded if they had repeated hospitalizations or a terminal illness, died during the first day of hospitalization, or were transferred from other acute care facilities. This project used data collected as part of the Cooperative Cardiovascular Project, an initiative of the Health Care Financing Administration to improve the quality of care for Medicare beneficiaries [1].

**Main outcome measures.** Use of intravenous and oral (but not topical)  $\beta$  blockers on the first or second day of the hospital stay for AMI, and in-hospital mortality.

**Main results.** Early  $\beta$ -blocker therapy was administered to 28,256 (49%) of 58,165 patients hospitalized for AMI in whom such therapy was not contraindicated. The patients who received  $\beta$ -blocker therapy had a lower in-hospital mortality rate than patients who did not receive  $\beta$  blockers (odds ratio [OR] = 0.81; 95% confidence interval [CI] = 0.75 to 0.87), even after adjusting for baseline differences in patient demographic, clinical, and treatment characteristics between the 2 groups. Patients with the highest risk for in-hospital death were those least likely to receive therapy.

### Conclusion

A significant proportion of AMI patients without either absolute or relative contraindications to early  $\beta$ -blocker therapy do not receive that therapy.

### Commentary

Underutilization of  $\beta$ -blocker therapy as secondary prevention following discharge from hospital stays for AMI has received considerable attention in the medical literature [2,3]. Much less attention has been given to in-hospital use of  $\beta$  blockers despite evidence from clinical trials showing that such treatment improves survival and authoritative guidelines strongly endorsing the practice [4,5]. Although limited by its reliance on retrospective medical chart review, the current study suggests that early  $\beta$  blockers have been very much underutilized and that further attention needs to be given to the immediate in-hospital care of AMI patients.

### Applications for Clinical Practice

In light of this study's finding, in-hospital processes of care for patients with AMI should be carefully reevaluated, with particular attention to developing strategies to increase the appropriate use of early  $\beta$ -blocker therapy.

### References

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