

Beta-Blockers Administration does not Eliminate the Effects of Anxiety on Complication Rate after Acute Myocardial Infarction.

? Mohannad E. Abu Ruz, MS, RN

? Terry A. Lennie, PhD, RN

? Debra K. Moser, DNSc, RN, FAAN

? College of Nursing, University of Kentucky, Lexington, Kentucky.

BACKGROUND: Anxiety is common after acute myocardial infarction (AMI) and has been shown to increase the number of complications and in-hospital length of stay (LOS). Anxiety-induced activation of sympathetic nervous system (SNS) is hypothesized to be an underlying factor for increased complication rate. Little is known about whether administration of beta (β)-blockers eliminates the negative effects of anxiety on complication rate and LOS. **OBJECTIVE:** To compare number of complications and LOS among patients with different levels of anxiety who received β -blockers during hospitalization. It was hypothesized that the administration of β -blocker would eliminate the effect of anxiety on rate of complication and LOS.

METHOD: A total of 322 AMI patients (61 ± 13 yrs, 67% male, 88% Caucasian, 70% married, and 30% with previous AMI) participated in this study within 48 hours of admission to the hospital. Only patients who received metoprolol were included in the analysis as there was an insufficient number (<13%) of patients who did not receive (β)-blockers to make meaningful comparisons. Patients completed the Brief Symptom Inventory to assess anxiety level. After discharge, medical records were reviewed to determine use of β -blockers, type and number of complications, and LOS. Patients were divided into two groups based on published norm references: non-anxious ($n = 163$) and anxious ($n = 159$). **RESULTS:** Anxious patients had a greater number of complications ($1.43 \pm .15$ vs. $0.73 \pm .09$, $p=.01$) and longer LOS ($7 \pm .49$ vs. $5.7 \pm .36$ days, $p<0.05$) than non-anxious patients. To test whether dose of β -blocker made a difference, the interaction between daily dose and anxiety was tested. There was no interaction between metoprolol dose and anxiety, nor was there a main effect for metoprolol dose. The majority of patients (96%) were treated with metoprolol in doses less than 200 mg daily. **CONCLUSION:** Consistent with other studies, patients with higher anxiety levels had a more complications and longer LOS. The administration of β -blockers did not eliminate this relationship. These data mostly suggest that either the dose of β -blocker used was not sufficient or mechanisms other than SNS activation are also responsible for the association between anxiety and complications.