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

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Risk of All-Cause Mortality in Diabetic Patients Taking β -Blockers

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Abstract

Objective

To assess the relationship between use of β -blockers and all-cause mortality in patients with and without diabetes.

Patients and Methods

Using data from the US National Health and Nutrition Examination Survey 1999-2010, we conducted a prospective cohort study. The study participants were followed-up from the survey participation date until December 31, 2011. We used a Cox proportional hazards model for all-cause mortality analysis. The multivariate-adjusted hazard ratios (HRs) of the participants taking β -blockers were compared with those of the participants not taking β -blockers.

Results

This study included 2840 diabetic participants and 14,684 nondiabetic participants. Compared with diabetic participants not taking a β -blocker, all-cause mortality was significantly higher in diabetic participants taking any β -blocker (HR, 1.49; 95% CI, 1.09-2.04; $P=.01$), taking a β_1 -selective β -blocker (HR, 1.60; 95% CI, 1.13-2.24; $P=.007$), or taking a specific β -blocker (bisoprolol, metoprolol, and carvedilol) (HR, 1.55; 95% CI, 1.09-2.21; $P=.01$). In addition, all-cause mortality in diabetic participants with coronary heart disease (CHD) was significantly higher in those taking beta-blockers, compared with those not taking beta-blockers (HR, 1.64; 95% CI, 1.08-2.48; $P=.02$), whereas that in non-diabetic participants with CHD was significantly lower in those taking beta-blockers (HR, 0.68; 95% CI, 0.50-0.94; $P=.02$). A propensity score-matched Cox proportional hazards model yielded similar results.

Conclusion

Use of β -blockers may be associated with an increased risk of mortality for patients with diabetes and among the subset who have CHD.

Abbreviations and Acronyms:

BMI (body mass index), CHD (coronary heart disease), CHF (congestive heart failure), COPD (chronic obstructive pulmonary disease), HbA1c (hemoglobin A1c), HR (hazard ratio), MEC (mobile examination center), NCHS (National Center for Health Statistics), NHANES (National Health and Nutrition Examination Survey)

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