Beta-blocker use not associated with lower risk of cardiovascular events

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Among patients with either coronary artery disease (CAD) risk factors only, known prior heart attack, or known CAD without heart attack, the use of beta-blockers was not associated with a lower risk of a composite of cardiovascular events that included cardiovascular death, nonfatal heart attack or nonfatal stroke, according to a study in the October 3 issue of *JAMA*.

"Treatment with beta-blockers remains the standard of care for patients with coronary artery disease, especially when they have had a myocardial infarction [MI; heart attack]. The evidence is derived from relatively old post-MI studies, most of which antedate modern reperfusion or medical therapy, and from heart failure trials, but has been widely extrapolated to patients with CAD and even to patients at high risk for but without established CAD. It is not known if these extrapolations are justified. Moreover, the long-term efficacy of these agents in patients treated with contemporary medical therapies is not known, even in patients with prior MI," according to background information in the article.

Sripal Bangalore, M.D., M.H.A., of the NYU School of Medicine, New York, and colleagues conducted a study to evaluate the association between beta-blocker use and long-term cardiovascular outcomes. The observational study included data from patients in the Reduction of Atherothrombosis for Continued Health (REACH) registry. From this registry, 44,708 patients met the study inclusion criteria of whom 14,043 patients (31 percent) had prior MI, 12,012 patients (27 percent) had documented CAD but without MI, and 18,653 patients (42 percent) had

CAD risk factors only. The last follow-up data collection was April 2009. The primary outcome for this study was a composite of cardiovascular death, nonfatal MI, or nonfatal stroke. The secondary outcome was the primary outcome plus hospitalization for atherothrombotic events or a revascularization procedure. The overall median (midpoint) follow-up was 44 months. Among the 44,708 patients in the study, 21,860 were included in the propensity score-matched analysis.

The researchers found that in the prior MI group, the event rates were not significantly different among those with beta-blocker use (489 [16.93 percent]) vs. those without beta-blocker use (532 [18.60 percent]) for the primary outcome, or the secondary outcome (30.96 percent vs. 33.12 percent, respectively). In the CAD without MI cohort, the event rates were not different in those with beta-blocker use (391 [12.94 percent]) vs. those without p-blocker use (405 [13.55 percent]) for the primary outcome, for cardiovascular death, for stroke, and for MI. The event rates were higher in those with beta-blocker use (1,101 [30.59 percent] vs. those without beta-blocker use (1,002 [27.84 percent]) for the secondary outcome and for hospitalization in the propensity score-matched model.

In the risk factors alone group, the event rates were higher in those with beta-blocker use (467 [14.22 percent] vs. those without beta-blocker use (403 [12.11 percent]) for the primary outcome, for the secondary outcome (870 [22.01 percent] vs. 797 [20.17 percent], respectively) but not for MI or stroke. In the propensity score-matched model, there were similar event rates for cardiovascular death and for hospitalization.

The researchers also found that among patients with recent MI (one year or less), beta-blocker use was associated with a lower incidence of the secondary outcome.

"Among patients enrolled in the international REACH registry, beta-blocker use was not associated with a lower event rate of cardiovascular events at 44-month follow-up, even among patients with prior history of MI. Further research is warranted to identify subgroups that benefit from beta-blocker therapy and the optimal duration of beta-blocker therapy," the authors conclude.

More information: *JAMA*. 2012;308[13]:1340-1349.