

RESEARCH NEWS



Beta blockers are associated with increased risk of cardiovascular events after surgery

Jacqui Wise

London

A large Danish study, published in *JAMA Internal Medicine*, has found that treatment with beta blockers was associated with a statistically significant increase in the rate of major adverse cardiovascular events and death within 30 days of non-cardiac surgery.¹

The use of beta blockers during non-cardiac surgery is currently being re-evaluated because of concerns over the validity of some previous studies. Guidelines in the United States and Europe recommend continuing beta blocker use perioperatively in patients already treated with them, although the data supporting this strategy are sparse.

Researchers identified all non-cardiac surgical procedures performed in Denmark from 2005 to 2011 in patients aged at least 20. Some 55 320 patients with uncomplicated hypertension who were treated with at least two antihypertensive drugs underwent non-cardiac surgery in this time. The baseline clinical characteristics were generally similar among the 14 644 patients treated with beta blockers and the 40 676 patients treated with other antihypertensive drugs, although slightly more women received beta blockers than men (64.9% v 57.1%).

The incidence of major adverse cardiovascular events within 30 days was 1.32% in patients treated with beta blockers and 0.84% in patients not treated with beta blockers ($P<0.001$). The 30 day mortality rate was 1.93% in patients treated with beta blockers and 1.32% in patients treated with other drugs ($P<0.001$).

Beta blocker use was associated with a higher risk of a major cardiovascular event and all cause mortality, regardless of whether it was combined with renin-angiotensin system

inhibitors, calcium antagonists, or thiazides. The risk of major adverse cardiovascular events associated with beta blocker use was especially pronounced in patients aged at least 70, in men, and in patients undergoing acute surgery.

Limitations of the study included the observational design, the possible misclassification of some patients as hypertensive, and an incomplete exclusion of patients with complicated hypertension.

However, the authors concluded, "This association was seen irrespective of the antihypertensive drug combination and was consistent across subgroups. This observation may suggest that perioperative management of patients with hypertension should receive specific attention in clinical practice and future guidelines, but additional randomized clinical trials on this question may be warranted."



1 Jørgensen M, Hlatky M, Køber L, et al. β -blocker associated risks in patients with uncomplicated hypertension undergoing noncardiac surgery. *JAMA Intern Med* Oct 2015, doi:10.1001/jamainternmed.2015.5346.

Cite this as: *BMJ* 2015;351:h5349

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