

THE RISK OF DEVELOPING DEPRESSION IN ASSOCIATION WITH USE OF BETA-BLOCKERS OR OTHER ANTIHYPERTENSIVE DRUGS

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Introduction

Use of antihypertensive drugs, and in particular use of beta-blockers, has been associated with an increased risk of depression. However, most of the evidence comes from studies which have been done many years ago, while some more recent studies did not find much evidence for such an association. There is also a controversy whether the depression risk depends on physic-chemical properties of beta-blockers, and whether depression may be the consequence of the cardiovascular indication, the lowering of the blood pressure, or a direct effect of these drugs on the central nervous system.

Objective

It was the aim of the study to analyze the association between use of beta-blockers, other antihypertensive drugs and the risk of developing depression.

Methods

We conducted a case-control study using the UK-based Clinical Practice Research Datalink (CPRD). We identified cases aged ≤ 80 years with an incident diagnosis of depression, followed by use of antidepressant drugs between 2000 and 2009, and we matched these cases to one control patient on age, sex, general practice, calendar time, and years of previous history in the database. Using conditional logistic regression analyses, we explored the association of cardiovascular drugs by numerous characteristics and comorbidities on the risk of developing depression. We explored in detail the use of beta-blockers, stratified by timing of use, by duration of use and by indication to present odds ratios (ORs) with 95% confidence intervals (CIs), adjusted for potential confounders.

Results

We identified a higher relative risk of depression for patients with beta-blocker use (OR 1.67 95% CI 1.59-1.76), especially for lipophilic beta-blockers without cardioselectivity, compared to non-users. A recent beginning of beta-blocker use (< 180 days) augmented the risk to 2.62 (95% CI 2.38-2.88), a recent beginning of lipophilic beta-blocker use even increase the risk to 3.38 (95% CI 3.00-3.80). We further investigated the impact of cardioselectivity and of the intrinsic sympathomimetic activity on the risk of incident depression. Other cardiovascular drugs were also associated with a small but statistically significantly increased risk for depression, e.g. ACE-inhibitors (OR 1.36 95%CI 1.17-1.58), AT2-antagonists (OR 1.31 95%CI 1.12-1.53) or diuretics (OR 1.36 95%CI 1.27-1.47).

Conclusion

In this case-control study we found an increasing risk of developing depression associated with use of antihypertensive drugs, especially lipophilic beta-blockers.