Reviewer's report

Title: Correlations between prescription of anti-hypertensive medication and mortality due to stroke

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Reviewer: Norrina Allen

Reviewer's report:

This study was an ecological analysis examining the association between changes in the use of antihypertensive medications and stroke mortality rates in three Hungarian counties. The authors suggest that increases in the use of high-ceiling diuretics and reduced mortality rates while decreases in the use of calcium channel blockers increased mortality rates. While the study question is interesting and of great public health importance, the lack of methodological details and statistical results makes it impossible to clearly evaluate the study. In addition, the conclusions reached by the investigators seems to be an overstatement given the apparent methods and result; as an ecologic study it is impossible to identify a causal relationship. At best, this study can demonstrate an association.

Major Compulsory Revisions

Some of the methodological questions include:

1) Why examine only these three counties? The authors stated that these were chosen based on significant differences in changes in mortality, does that mean then that the other counties had no changes? Wouldn’t including all counties have provided more power? Even if the mortality rates didn’t change then you would expect that anti-hypertensive use had not changed either. By choosing only these three the sample appears biased. How does these counties compare with the country as a whole

2) Much more description of the analyses is needed and should be reflected in the results.

3) Are there other changes in the population or healthcare system that might also have impacted mortality rates. These potential confounders should be addressed.

4) It is important not to overstate the results, at most all that can be said is that there is an association, not necessarily causal, between medication use and stroke mortality rates.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests