Reviewer’s report

Title: Reduced vascular risk in type 2 diabetes by biguanide relative to sulfonylurea: study in Japanese Hospital Database

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Reviewer: Konstantinos Makrilakis

Reviewer’s report:

Makito Tanabe et al. have compared the vascular risk of biguanide therapy vs. sulfonylureas (SUs) in Japanese type 2 diabetic patients, with or without history of CVD, examining retrospectively hospital databases.

The main findings of this study are that CVD risk for patients treated initially with biguanides was lower than those treated with SUs, after a period of about 2 years.

The manuscript is well written, but extensive and could be shortened. It adds to the current knowledge regarding CVD risk conferred by the various classes of antihyperglycaemic medications.

Some comments need attention:

1. Major Compulsory Revisions

In the Discussion section, it should be mentioned that the period of observation (2 years) is relatively small to observe CVD end-points.

Also, it should be stated that the fact that the CVD risk was found to be lower with biguanides than SUs, does not indicate if risk was lowered with biguanides or increased with SUs.

The manuscript is quite big, has a lot of tables and could be shortened. Table 1 and Figure 4 for example could be omitted, without jeopardizing the information given in the manuscript.

It is also peculiar that the minimum HbA1c level on nearly all drug classes was so low (4.6-5.1%) when people started antihyperglycaemic treatment.

2. Minor Essential Revisions

Some grammatical errors should be corrected:

On page 3, line 17-18: “If MI occurs in a patient with DM, the prevalence of mortality can increase up to 4.6-fold compared ...” should be corrected to: “If MI occurs in a patient with DM, the risk of future mortality can increase up to 4.6-fold compared ...”

On page 8, line 2, “independency” should be changed to “independence”.

On page 9, lines 8-9, “.. but rates of treatment with such drugs were statistically no difference between SU and other OHAs in both studies ...” should be changed to “.. but rates of treatment with such drugs were statistically not
different between SU and other OHAs in both studies …”

3. Discretionary Revisions
The title should better be changed to "Reduced vascular risk in type 2 diabetes by biguanide relative to sulfonylurea: study in a Japanese Hospital Database".

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests