**Reviewer’s report**

**Title:** Investigating the Risk of Bone Fractures in Elderly Patients with Type 2 Diabetes Mellitus: a retrospective study

**Version:** 0  **Date:** 29 May 2019

**Reviewer:** Paulina Dumnicka

**Reviewer's report:**

The manuscript describes the results of a retrospective analysis of factors associated with fractures (requiring hospital treatment) among over 2000 elderly (>65 years of age) patients with type 2 diabetes mellitus. The main finding is that treatment with thiazolidine drugs is associated with increased odds for fractures among both men and women.

The study is clinically relevant. In general, the manuscript is well written.

However, I miss some important information regarding the collection of data, and I believe that some findings of the study should be discussed more in depth.

I understood the authors included inpatients admitted to all departments of the study hospital. Please specify more clearly, how the data about hypoglycemic treatment were collected. Did you record only the data on drugs administered during the hospital stay / at admission? If so, what about the patients hospitalized twice or more times during the study period? Moreover, this should be discussed as a limitation of the study, as in such case, there are no data on long-term treatment before admission.

A high proportion of patients (one third) did not use any hypoglycemic drugs - why? Please discuss the issue.

Is that possible to include the details about the fractures (percentage of hip fractures, other locations)?

The finding of lower GFR values associated with less fractures should be investigated with more care. I suggest performing the analysis including GFR as a continuous variable, or more categories of GFR as the predictor variable. Probably similar analysis should be also done with HbA1c. It would be interesting to know the ranges of GFR and HbA1c values among patients with and without fractures.

Minor issues:

page 6, lines 143, 144: The statement "HbA1c (≥7.0 %), age (≥75 years), eGFR (<60 mL/min/1.73 m2), and BMI (≥25 kg/m2) increased the odds ratios of bone fractures [11,20]." is
somewhat misleading in the results, as it does not describe the findings of the study presented in Table 3. If I understand the authors correctly, this statements justifies the categorization of HbA1c, age, GFR and BMI values. Please clarify the paragraph containing the statement.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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