Reviewer's report

Title: Reasons of general practitioners for non-treatment of younger and older patients with newly diagnosed type 2 diabetes mellitus in the United Kingdom: A survey study

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Reviewer: Petra Denig

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After reading the revision and the response to the previous comments, I still think that the timing of determinants and outcomes in this study is either not clearly defined or incorrect. The authors seem to evade this matter by arguing that baseline measurements would not capture the patient situation at the time of the decision but their choice to look at the most recent situation introduces a clear time bias, since older patients also had a longer duration of diabetes at the time of the survey.

Major points

1: This has now been clarified but there still remains unclarity which data are presented (and their relevance). It is stated in the Methods that “Laboratory measurements and vital signs were abstracted at the time closest to diagnosis (HbA1c and fasting blood glucose)” but it seems that only HbA1c and FBG at baseline were collected (or presented). Suggest to skip the “vital signs”. This implies that for all other lab measures and vital signs only the most recent outcomes were collected. Suggest to enter “vital signs” to “the most recent laboratory measures (HbA1c, fasting blood glucose, lipid levels, serum creatinine, estimated glomerular filtration rate, height, weight, and blood pressure).”

More importantly, when presenting results like “Compared with younger patients, older patients had a longer duration of type 2 diabetes mellitus, a lower body mass index, and higher prevalence of cardiovascular conditions and microvascular complications (especially renal disease) and were taking a greater number of medications (all p<0.001; Table 1).”, this all seems to relate to the most recent observations. So, knowing that the group of older patients also had a longer duration of diabetes at that time (see Table 1), what is the point of presenting these differences? They do not explain why physicians decided not to treat the patients in the first 6 months after diagnosis, and are thus confusing (see also next point 2). It seems obvious that older patients with a longer diabetes duration have more complications and take more drugs.

Also in the results, the beginning of discussion (even mentioned twice in the first paragraph?), and in the final conclusion, the most recent HbA1c levels are presented in relationship with reasons for not initiating treatment in the 6 months after diagnosis. In this case, the most recent HbA1c level could/should be
considered as an outcome (and not a determinant) of the decision not to treat. The statement: “Interestingly, GPs selected reasons within this category for 29% of their patients who had an HbA1c #7%.” and related statements in discussion and conclusion are misleading. I would rather say: “In patients whose HbA1c was well controlled at the time of the survey, the reason for not initiating early treatment was often that they had only mild hyperglycaemia, whereas for less well controlled patients other reasons were more prominent.” Or better: why not present the reasons for strata of HbA1c levels at baseline?

2: This issue has not been solved. I agree that including only baseline data would also not provide a complete picture. However, the condition may have occurred not only after the diabetes diagnosis but –more importantly- after the decision to treat the condition. Since it was the purpose to understand why physicians decide not to treat newly diagnosed patients within 6 months, diagnoses that were made after this period should be excluded to be able to make statements as presented in the Discussion (that ‘Older patients in this study were more likely to have preexisting microvascular and cardiovascular conditions, which appeared to impact the GPs’ decisions on treatment’). If dates of diagnoses were collected, this could be corrected in the analysis. Otherwise, these kind of statements should be deleted.

3: Solved by providing more information.

4: Improved by the revision of the classification/interpretation of the reasons.

Minor essential points:
5. Revised as suggested.
7. Revised.
8. Revised.

9. In Methods it is stated that “the GPs provided an HbA1c threshold value for initiating antihyperglycaemic therapy for their untreated patients.” Which suggests that it was a question asking for a threshold in general. From the response, I understand that this question was asked for each (“this patient”) individual patient (or only for those which were at the time of the survey still not treated?). Please, clarify/specify this in the Methods.

10. The authors also present results regarding thresholds at the time of the survey. They report that “The proportion of patients with their most recent HbA1c measurement above their GP-reported HbA1c threshold was significantly higher (p=0.002) in the younger patients (14.3%) compared to the older patients (10.4%).” This suggests that although early treatment initiation after diagnosis is higher in younger patients, older patients are less affected by clinical inertia. This may be worth discussing?

Discretionary Revisions
11. Revised (but do see earlier comment –major point 1- regarding first
paragraph of discussion and conclusion).
12. Revised.
13. Clarified.

**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.