Reviewer's report

Title: Screening South Asians for type 2 diabetes and prediabetes: a comparison of oral glucose tolerance test and haemoglobin A1c and characterization of individuals diagnosed

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Reviewer: Bernd Kowall

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For South Asians living in the Netherlands, the authors address the question to what extent HbA1c and OGTT based diagnoses of diabetes identify the same subjects of having the disease. They state that the overlap is only partial, and that subjects identified as having diabetes or prediabetes by HbA1c or by OGTT only do not show a different profile of metabolic risk factors.

Major comments

1. The authors should explain in some more detail why their study in South Asians is important (for example, ethnic differences in HbA1c).

2. In table 2, the HbA1c group includes OGTT based diagnoses of T2DM (and of OGTT based prediabetes, respectively). I suggest comparing three groups: diagnosis by HbA1c only, diagnosis by OGTT only, and diagnosis by both criteria. Of course, the power to find differences in metabolic factors is poor when comparing three small groups with a diagnosis of T2DM – but this is clearly a disadvantage of the study. Please adjust the comparisons for age and sex – the p-values given in table 2 refer to the comparison of crude data.

3. In identifying persons with prediabetes, the degree of overlap by the two criteria strongly depends on the exact criteria. For HbA1c, 6.0 – 6.4% and 5.7 – 6.4% have been suggested; for impaired fasting glucose, there is 110 – 125 mg/dl (WHO) and 100- 125 mg/dl (ADA). For both criteria, the authors chose the wider intervals which led to the inclusion of subjects with glucose levels which are only slightly above normoglycaemia. It would be interesting to see the results for the narrower intervals.

4. For OGTT based prediabetes, the authors should also differentiate between IFG and IGT, and look whether the overlap of HbA1c with IFG and IGT, respectively, is different.

5. The authors give sensitivities, specificities, and positive predictive values for the identification of OGTT based diagnoses by HbA1c. In a way, this suggests that the OGTT is a gold standard for the diagnoses of (pre)diabetes. The authors should discuss that the best criterion for the diagnoses of diabetes might be the one that goes together with the best prognosis of complications.

Minor comments

1. In table 1, HbA1c based prediabetes is defined by 6.0 # HbA1c < 6.5 %. I
guess this is a mistake (5.7 as lower limit instead).
2. Table 2: Please state to which comparisons p-values refer.
3. The AROCs in figure 2 can be omitted. AROCs always look nice, but here they do not give any information in addition to the diagnostic criteria mentioned in the results part.

**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.