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: Samiul Mostafa

Reviewer’s report:

Major Compulsory Revisions

1) Table 2. What about the group who have positive HbA1c and OGTT. Do they have the worst cardio-metabolic profile? Or is power a problem here?

On a second point, I note the actual numbers of people with diabetes by either method are mentioned for first time in the manuscript. In the abstract and manuscript the % format is written only. This is a weakness of the study. Please add the actual numbers to the manuscript and abstract.

2) As this paper focuses on diagnosis of Diabetes there should more detail about the assays used, specifically your HPLC – was it appropriate for diagnostic use (see reference 5), what was the inter- and intra- Coefficients of Variation of the HbA1c analyser? Which haemoglobinopathies could it detect - bearing in mind people of South Asians may possess these? Where glucose samples handled according to international guidelines – e.g. placed on ice immediately, processed within 30 minutes etc – if not these should be mentioned as limitations.

3) Abstract conclusion:
‘A combined rather than a single test strategy should perhaps be considered among South Asians’

This is not particularly justified by this paper – it can be seen at most as future research only. Please omit this sentence or rephrase to ‘Future research should investigate if…….’ This is already correctly written in the main text, but should be changed in the abstract as well.

Minor Essential Revisions

Main manuscript

Background

1) ‘A recent study has shown that a substantial benefit can potentially be realised by specifically targeting South Asians for active screening and prevention’.

You need to specifically explain to the reader what is this ‘substantial benefit’ than can be realised? It is that you identify people with diabetes earlier?

2) ‘The effectiveness of such a screening’
There’s a grammar mistake or word missing here.

3) There is no list of abbreviations – these are usually after the abstract. There are some abbreviations after the tables and figures but these should be there for the main text as well.

4) ‘Because HbA1c can be determined in a single fasting blood sample.’
   a) HbA1c can be performed in either a fasting or non-fasting blood sample.
   b) Secondly, be careful about writing ‘in a single sample’ in this paper, as for diagnosis of Type 2 diabetes using HbA1c you need a second positive test on a separate day to confirm diagnosis in all asymptomatic individuals. If the authors are quoting local guidelines or disagree with my understanding, they should provide a reference to their statement.

5) ‘However, studies in several populations showed that screening based on the HbA1c may lead to the identification of fewer new cases of DM’
   Most studies show this but not all – e.g. Reference 6 in the manuscript shows either can happen, and Mostafa SA Diabetic Medicine 2010, 72, 762-9 show the opposite.
   Please add the phrase ‘most studies’

6) It would be useful to mention to the reader in the introduction that HbA1c is an accepted criterion for Type 2 diabetes at the level of greater than or equal 6.5% in non-pregnant adults, to distinguish its non-use for type 1 diabetes, pregnancy and in children.

Methods

7) ‘The two large migration waves, around 1975 and 1980, of Hindustani-Surinamese to the Netherlands’. Were your participants first or second generation migrants? Also can your results be generalised to all Hindustani-Surinamese migrants to Netherlands? i.e. how representative is your population of these individuals?

8) ‘The OGTT diagnosis of DM was therefore defined as FPG#26 mg/dl’.
   If I’m correct, this should be 126mg/dl!

9) HbA1c units are expressed in mmol/mol and %. Some countries have adopted using mmol/mol but most others haven’t. Personally I would recommend just using % for now, as some readers will not understand this (or put the % first, followed by mmol/mol). However I acknowledge the authors attempts to use current information here. The editorial team may want a specific format here.

10) ‘We identified the optimal HbA1c threshold for DM by interpolation from the AUC; it was the point closest to the upper left-hand corner, which maximized sensitivity and specificity’. Was this performed manually or was a specific test used to do this (e.g. Youden Index) which is more accurate?
Results
11) The AUC for diabetes and in particular for prediabetes are extremely good compared to other studies which report the overlap between people detected from using the two tests is very weak. It’s worth mentioning this in the discussion.

Discussion
12) There is the title ‘Discussion’, then subheadings of ‘main findings’ and later ‘Discussion of the main findings’. I don’t think you need the subheadings here. However the editors may advise better here.

13) Figure 1 is too detailed e.g. response per age group and gender. Perhaps simplification is required.

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

Quality of written English: Needs some language corrections before being published

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'