Reviewer's report

Title: Fasting insulin sensitivity indices are not better than routine clinical variables at predicting insulin sensitivity among Black Africans: A clamp study in sub-Saharan Africans

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Reviewer: Richard G Ijzerman

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The authors analysed the association of common fasting insulin sensitivity indices, and non-laboratory surrogates (BMI, waist circumference and waist-to-height ratio) with clamp derived insulin sensitivity in 87 non-diabetic Cameroonianians. They found that the association of fasting insulin sensitivity indices with clamp-derived insulin sensitivity was relatively weak, and not better than the association of non-laboratory surrogates with clamp-derived insulin sensitivity.

Validation of fasting insulin sensitivity indices in sub-Saharan Africans is relevant. However, several major issues should be discussed.

The authors should discuss the differences between the results of the present study and previous studies (Alvarez et al. and Pisprasert et al.; reference 6 and 7 in the present manuscript)? In these previous studies, the association between fasting insulin sensitivity indices and clamp-derived insulin sensitivity was investigated in Afro-Americans. What is the added value of the present study?

The authors suggest that the fasting indices are not useful for sub-Saharan Africans. Although I tend to agree, I think a comparison with Caucasian populations is important to appreciate the relevance of this finding. In previous studies, a group of Caucasians was also included (ref 6 and 7). This allowed for a direct comparison. This comparison is unfortunately not possible in the present study. How does the association in the present study in sub-Saharan Africans compare to that in Caucasians (in previous studies in the literature)?

I would suggest to focus the analyses on the association of fasting insulin sensitivity indices and non-laboratory surrogates with clamp-derived insulin sensitivity. Providing figures and tables of all the other associations does not answer the research question. These data could be provided in the online supplement.

It has been suggested that incorporation of the fasting free fatty acid (FFA) concentration improves the association of QUICKI with insulin sensitivity. Do the authors have FFA levels available?

Why did the authors exclude patients smoking more than 20 cigarettes per day?
Level of interest: An article of importance in its field

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