Reviewer’s report

Title: Elevation of small, dense low density lipoprotein cholesterol—a possible antecedent of atherogenic lipoprotein phenotype in type 2 diabetes patients in Jos, North-Central Nigeria.

Version: 0 Date: 31 Jul 2017

Reviewer: Klaus Parhofer

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This is a study which evaluates lipid metabolism in a group of 176 diabetic patients and 154 controls in Central Nigeria. Fasting lipid parameters and LDL-subtype distribution was measured. It is shown that diabetic patients in Nigeria also have a typical dyslipidemia. In addition, the authors show that more diabetic patients fulfill criteria for diabetic dyslipidemia if the predominance of small-dense LDL is used to define this condition than if the classical lipid parameters are used. The authors draw the conclusion that LDL-subtype distribution should be included into routine assessment.

This study is interesting because it provides data from a part of the world were information on diabetes is sparse. However, the manuscript raises several aspects that need to be addressed.

1. The recommendation to measure small-dense LDL is far-fetched. There is no data showing that using small-dense LDL as a criterion to start lipid lowering therapy translates into better risk reduction than using LDL-cholesterol concentration. Therefore, most (if not all) guidelines do not recommend to measure small-dense LDL outside clinical studies and recommend using either non-HDL-cholesterol or LDL-cholesterol to guide treatment. In addition, the cutoff value used for small-dense LDL is derived from a Japanese study which may or may not make sense in the population under study.

2. It would be more important to describe the diabetic cohort in more detail. How many patients have metabolic syndrome? How are they treated? What is the HbA1c? etc.

3. The result section should be restructured. Currently there is no clear flow. First there is a comparison between diabetic and non-diabetic, then, comparisons between male and female and then again comparison between diabetic and non-diabetic and so on. It makes more sense to first describe the diabetic patients as whole group and compare them to controls. In a second step subgroups (according to gender, age, etc.) can be evaluated. If there are differences between males and females in both groups (diabetic patients and controls) then this should be taken into account during analyses (either include gender into the model or at least compare diabetic males to control males and diabetic females to control females).
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

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?
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No

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