Reviewer's report

Title: Colonic Epithelial Telomere Length and Oxidative DNA Damage in Type 2 Diabetes.

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Reviewer: Joao Passos

Reviewer's report:

This is an interesting paper since it attempts to establish a connection between type 2 diabetes mellitus (T2DM), oxidative DNA damage and telomere attrition in colonic epithelium.

The work presented in this manuscript fails to show any differences in oxidative DNA damage and telomere length in colonic epithelium between control subjects and type 2 diabetes patients.

I recognise the value of the study in terms of its rationale and the fact that various factors have been taken into account to limit confounding factors. However, I feel that additional experiments could have been done to determine if there is a role for telomeres and oxidative stress in colonic epithelium from type 2 diabetes patients.

Low number of analysed subjects could be the reason why no statistically significant differences have been found in the first place (only 10 subjects with type 2 diabetes). Even though post hoc analysis suggested the study would have 80% power to detect 2.66MESF difference, it could well be that the small difference found in telomere length would become significant if more subjects (n=50) were analysed and has biologic significance.

Discretionary Revisions
I found striking the differences in telomere length and oxidative DNA damage between the current and previous study from the same group, where telomere length and oxidative damage were measured in monocytes, naïve and memory T cells between control and T2DM. It would be interesting if the authors commented on the differences in telomere length and oxidative DNA damage between these different cell types.

Major Compulsory Revisions:
The authors should acknowledge more clearly in the discussion the limitation of using such small sample size. Also, the authors should propose a hypothesis of why colonic epithelium cells should be less prone to oxidative stress and telomere shortening than other cell types (eg. monocytes). Also, the authors should mention more clearly the literature showing the impact of age on telomere shortening and oxidative stress in colon.
Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests