Reviewer's report

Title: Longitudinal study of dental caries incidence associated with Streptococcus mutans and Streptococcus sobrinus in patients with intellectual disabilities

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Reviewer: Cristiane Y Koga-Ito

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The present study aimed to detect S. mutans and S. sobrinus among Japanese patients with ID using a PCR method, and then compared their presence with the incidence of dental caries over a 1-year period. The subject of the study is interesting, however some methodological doubts exist.

Major compulsory revisions

Authors reported that “Several investigators have also developed polymerase chain reaction (PCR) methods and reported them to be more sensitive for detection as compared to conventional culture techniques”. Specific PCR assays are able to detect the presence of the bacteria but do not give information about the bacterial load or cell viability. Previous published studies indicate that high caries risk is positively correlated to high counts of cariogenic bacteria. Do the authors believe that the absence of bacterial counts can be considered a limitation of the study? Please, discuss.

The authors observed that “Four (21.1%) of the subjects with S. mutans alone, 9 (34.6%) with S. sobrinus alone, and 54 (55.7%) with both had increases in caries increment, while none of the subjects possessing neither organism showed an increase in increment.”. Caries is a very complex and multifactorial disease. At what extent, do the authors believe that other predisposing factors, besides streptococci presence, interfered in the caries incidence outcome? For instance, what was the influence of diet and biofilm control in this outcome? Please, discuss and consider including information about the other predisposing factors (i.e. dietary data, severity of the disability and difficulties in dental brushing, sugar-containing medication intake, salivary flow, oral breathing, use of orthodontic devices). The other variables seem to be very important and should be considered, in particular, considering that this is a longitudinal study that evaluated the patient after 1 year from baseline.

In the discussion section, the authors reinforced the importance of choosing a suitable technique for caries prevention based on the risk among patients with ID. At what extent the findings of this study can be applied in the clinical practice? Do the authors propose a microbiological marker to high caries risk (the presence of both S. mutans and S. sobrinus)?

Considering that the age range was very wide (6 to 30 yrs-old), DFT can be
deeply influenced by the - past experience of caries- factor, in particular in older patients. We would like to suggest the comparison of groups (with S. mutans, with S. sobrinus, with both or without both) inside more homogeneous age groups (for instance, children, young adults, adults, as proposed by WHO).

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

**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' below.