

SALIVARY MICROBIAL CHANGES DURING THE FIRST 6 MONTHS OF ORTHODONTIC TREATMENT (#51390)  
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## 1. BASIC REPORTING

### A. Text

The English language should be improved, with more professional terms. Some examples include:

"Many studies revealed that placement of orthodontic appliances influenced **cleansing of the oral** cavity, thus inducing the accumulation of dental plaque (Lee et al. 2005; van Gastel et al. 2008)."

"The etiology and progression of caries or periodontitis are closely related to the **oral microbiome rather than a single or several species**. "(What does it mean?)

"Our results indicated that microbial **richness** (gender, species or levels?)

### B. Intro & background

- i. Text: "Other evidence also showed that improper **orthodontic force could alter the oral microbial ecosystem** and increase the potential for pathogenicity (Ong & Wang 2002)."

My question: Is this topic actually reported by literature in this way? Please check the reference.

- ii. In concern about the importance of saliva in diagnosis of microbial environment, the reference citations are not adequate.

Text: "Saliva, which is regarded as a microbial repository and transport medium, is also widely used in dental research in addition to dental plaque. **Various studies** indicated that saliva was affected by oral health status as well as the quantity and types of microbes during orthodontic treatment".

My question: In the references, there are only HolgersonL et al. 2020. Jing analysed the salivary levels of *S. mutans* and *Lactobacillus*, and Zhao et al 2019 analysed in aligner appliance, what should not be compared to brackets. I think it is necessary comparison with researches that was analysed interaction among microorganisms in the saliva.

- iii. The aim is not clear:

Text: "Salivary **microbial communities** were characterized and compared to better understand microbial changes during the early stage of orthodontic treatment."

My question: what does "**microbial communities**" mean? Phyla, gender, species? Or group or complex.

## 2. EXPERIMENTAL DESIGN

- i. The research is within scope of the journal.

- ii. The question is relevant, but it is not clear: "Salivary microbial communities were characterized and compared to better understand microbial changes during the early stage of orthodontic treatment"

My question: Did they compare phyla, genders, species? Did the sequencing also evaluate species? The results did not show this clearly. And it is important to support the topics addressed in discussion.

- iii. Description of methodology is based, clearly, in the literature and, then, is correct. But some aspects of the malocclusion sample are also very relevant, like crowing, crossbite.

Saliva sample: Time that saliva was collected. The aliquot utilized in the analysis. What kind of buffer solution was utilized?

I think it is necessary to describe this aspect.

### 3. VALIDITY OF THE FINDINGS

- i. The results are inconclusive.
- ii. The statistic is adequate.
- iii. The figure 4 is inconclusive.
- iv. The results showed data about phyla and genera. The discussion addresses specific concerns about dental caries and periodontal disease, in which some species of bacteria are not investigated. And attention: the salivary levels and in situ levels are different, and the comparison with the literature should be considered this aspect.  
Therefore, the discussion could not compare the specific results of this research with those literature results pointed by the authors, specially about aligners appliance.

### 4. CONCLUSION

- i. "The dynamic alteration of species and orthodontic treatment did not induce deterioration of oral health."

My question: this study did not evaluate oral health, because this is a broad concept involving caries, a periodontal disease that cannot be evaluated only by "The Quigley-Hein Plaque Index".

- ii. "This dynamic alteration of species did not induce deterioration of oral health."

My question: did the study evaluate species?

- iii. "Oral hygiene instructions were necessary and should be emphasized during every visit"

My question: is this the objective of the study? Or is this implemented only to intentionally standardizing the sample?

My conclusion: within the points considered, I think this study is relevant and necessary. The orthodontic research should be pointing out more information about microbial interaction in orthodontic treatment. The study was well planned and done. Some adjustments are required to be coherent with the proposal, results and discussion. The major adjustments are necessary to be published.