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Comment on "Mutagenic damage among bronchiectasis patients attending in the pulmonology sector of a hospital in southern Brazil"

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Dear Editor,

We read the recently published article entitled "Mutagenic damage among bronchiectasis patients attending in the pulmonology sector of a hospital in southern Brazil" by Olmedo et al.[1] in the *Journal of the Brazilian Medical Association*. The results of this study showed no significant differences in the frequency of oral micronucleated cells in bronchiectasis patients. In this regard, some questions are raised below for helping better understanding of the manuscript.

It was written in "Material and Methods" section that "Smears were made on the slides, and these were stained with eosin-methylene blue according to Leishman." It is important to note that Leishman stain is not suitable for micronucleus testing because the dye is not specific for nucleic acids. This is a confounding factor due to the fact that the identification of micronucleus in oral cells is very complicated in this case[2]. Certainly, the approach compromises the expected results. Moreover, it was stated that "the frequency of micronucleus was expressed as the number of micronucleus in 1,000 cells." According to the guidelines by the International Micronucleus Assay Group, the analysis of a minimum 2,000 cells per patient was established[2]. If the authors increase the total number of cells evaluated, the statistical power would improve considerably.

Considering that the aim of this study was the evaluation of the mutagenic potential induced by respiratory disease (bronchiectasis)[1], it is not clear why the authors evaluated the micronucleus test in oral mucosa cells. In the "Discussion" section, the authors mentioned that "Studies have shown that bronchiectasis increases systemic inflammation and arterial stiffness and causes bone thinning, and the inflammatory response plays an essential role in tissue genotoxicity and consequently in tumorogenesis." Following the rationale, it would be more interesting to evaluate if, and that extent, bronchiectasis is able to induce micronucleated cells in lymphocytes as a result of systemic host response.

Another pertinent point refers to the role of cytotoxicity in genotoxicity studies. Cytotoxicity interferes in genotoxicity because micronucleated cells are not detected in this scenario. To mitigate the problem of false-negative data, Tolbert et al.[3] have published the analysis of several metanuclear changes as a result of cytotoxicity induced in exfoliated cells, such as karyorrhexis, pyknosis, and karyolysis, in the micronucleus assay. Particularly, the approach is very important in the current study since the inflammatory process induced by bronchiectasis increases the level of several mediators, such as pro-inflammatory cytokines and oxygen reactive species, which are able to induce cellular death in several tissues and organs.

We assumed that such comments are important and necessary for the correct understanding of the relevant study that investigated cytogenetic damage in oral mucosa cells of patients suffering from bronchiectasis.

AVAILABILITY OF DATA AND MATERIALS

The data that support the findings of this study are available from the corresponding author upon reasonable request.

AUTHORS' CONTRIBUTIONS

ACMM: Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. **CCAP:** Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. **DAR:** Conceptualization, Formal Analysis, Writing – original draft, Writing – review & editing.

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