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<https://doi.org/10.1016/j.arbres.2019.11.018>

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The Lower Airway Microbiome and Lung Cancer[☆]



Microbioma de la vía aérea inferior y cáncer de pulmón

To the Editor,

In a recent editorial, Garrido-Martin and Paz-Ares¹ commented on the novel contributions of the study of the microbiome in lung cancer patients, mainly with regard to the interesting expectations associated with its manipulation and the potential effect on the therapeutic response. The editorial also mentions, albeit briefly, the possibility of identifying certain microorganisms that could be used as diagnostic or prognostic biomarkers in lung cancer. Several studies of the respiratory microbiome have suggested the existence of characteristic changes in bacterial populations of the airway in these patients.^{2,3} Although there are some differences in the studies, *Granulicatella*, *Streptococcus*, and *Veillonella* have been found most often in respiratory samples from patients with lung cancer.^{2,3} Our group has conducted a study using specimens obtained by protected brush sampling in the side of the tumor and in the same area of the contralateral lung of patients with lung cancer and in controls without malignant disease.³ Mass sequencing of bacterial DNA showed that the microbiota of the lower airway was similar in the tumor area and in the equivalent segment of the contralateral lung, but different from the microbiota detected in patients without cancer. These differences, as pointed out by Garrido-Martin and Paz-Ares,¹ could have a potential application as diagnostic biomarkers. In our experience, the identification of *Enterococcus*, *Capnocytophaga* and *Actinomyces* had a diagnostic accuracy for malignancy of 70%, and *Micobispora* allowed cancer to be ruled out with an accuracy of 78%.³

Studies to identify microorganisms as biomarkers in these patients use different methods and generally include a relatively low number of patients; moreover, the results may also vary due to alterations in respiratory microbiomes in different regions of the world,⁴ so it is not yet possible to draw clinical conclusions. However, the study of the respiratory microbioma is undoubtedly a novel approach in the study of the pathogenesis of various diseases and diagnostic possibilities, or as noted by Garrido-Martin and Paz-Ares,¹ a potential strategy for modifying the therapeutic response of lung cancer.

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<https://doi.org/10.1016/j.arbr.2020.01.003>

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[☆] Please cite this article as: García-Pachón E, Padilla-Navas I. Microbioma de la vía aérea inferior y cáncer de pulmón. *Arch Bronconeumol*. 2020;56:410.