



## Letter to the Editor

### Smoker, former smoker and COVID-19<sup>☆</sup>

#### Fumador, exfumador y COVID-19

To the Editor,

In the latest volume of the journal ARCHIVOS DE BRONCONEUMOLOGÍA, the original article entitled “Covid-19 and smoking: a systematic review and meta-analysis of evidence” raises a number of questions on the possible association between smoking in patients with Covid-19 and negative disease progression.<sup>1</sup> In their systematic collection of data, the authors pooled smokers and former smokers in a single population and found, as part of their study, that being a smoker or former smoker is a risk factor for worse Covid-19 disease progression (odds ratio [OR]= 1.96).

However, several studies suggest that these groups of patients may have different characteristics. In a molecular study based on bronchial brushings, Leung et al.<sup>2</sup> showed that smokers had a higher level of expression of angiotensin-converting enzyme 2 receptors (ACE-2) than former smokers ( $p < 0.00192$ ); this enzyme is used as an entry receptor by SARS-CoV-2.

Similarly, according to Liu et al.,<sup>3</sup> ACE-2 expression was significantly increased in the bronchial epithelial cells of both current and former smokers compared with non-smokers. However, ACE-2 expression was significantly reduced in human bronchial epithelial cells of former smokers compared with current smokers, particularly in subjects who had given up smoking for more than 10 years ( $p = 0.024$ ).

In the clinic, Alqahtani et al.<sup>4</sup> showed that tobacco-dependent individuals with chronic obstructive pulmonary disease (COPD) and SARS-CoV-2 infection have a worse prognosis than former smokers (RR= 1.45, 95% confidence interval [CI]: 1.03–2.04).

Farsalinos et al.<sup>5</sup> observed a protective trend against adverse Covid-19 outcomes in hospitalized patients who were never smokers (OR: 1.53, 95% CI: 1.06–2.20,  $p = 0.022$ ). However, they also reported controversial results when they compared the

population of current smokers with former smokers (OR: 0.42, 95% CI: 0.27–0.74,  $p = 0.003$ ) and suggested that disease prognosis is better in smokers.

Finally, based on the scientific evidence shown, we suggest that populations of smokers and former smokers be evaluated as independent groups, since studies suggest that they differ both biologically and clinically.

#### Conflict of interest

The authors state that they have no conflict of interest.

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