



## Early View

Correspondence

### **Reply to: “Current Smoking is Not Associated with COVID-19”**

Janice M. Leung, Chen Xi Yang, Don D. Sin

Please cite this article as: Leung JM, Yang CX, Sin DD. Reply to: “Current Smoking is Not Associated with COVID-19”. *Eur Respir J* 2020; in press (<https://doi.org/10.1183/13993003.01340-2020>).

This manuscript has recently been accepted for publication in the *European Respiratory Journal*. It is published here in its accepted form prior to copyediting and typesetting by our production team. After these production processes are complete and the authors have approved the resulting proofs, the article will move to the latest issue of the ERJ online.

Copyright ©ERS 2020. This article is open access and distributed under the terms of the Creative Commons Attribution Non-Commercial Licence 4.0.

**Reply to: “Current Smoking is Not Associated with COVID-19”**

Janice M. Leung<sup>1,2</sup>

Chen Xi Yang<sup>1</sup>

Don D. Sin<sup>1,2</sup>

<sup>1</sup>Centre for Heart Lung Innovation, University of British Columbia, Vancouver, Canada

<sup>2</sup>Division of Respiratory Medicine, Department of Medicine, St. Paul’s Hospital, Vancouver, Canada

Like Rossato *et al.* [1], we too have been struck by the relative underrepresentation of current smokers in cohorts of COVID-19 patients, particularly in light of our recent findings that the SARS-CoV-2 receptor ACE-2 is upregulated in the airway epithelium of this population [2]. China [3], Italy [1], and now New York City [4] have all reported current smoking rates below those of their respective general populations. The reason for this is a mystery. One possible explanation is misclassification of smoking status owing to under-reporting of smoking in these cohorts. Another is that smokers may be taking medications that may offer some protection against COVID-19 (e.g. certain inhalers). It should be noted that severe COVID-19 preferentially targets the older population (>65 years) with co-morbidities where smoking rates are approximately 3-5 fold lower than that in the general population. Thus, the background smoking rates in the severe COVID-19 susceptible subgroups may be much lower than the general smoking rates of the population. Notwithstanding these issues, we should be extraordinarily cautious about the messaging surrounding smoking and COVID-19, especially in these fraught times where misinformation is commonly amplified in a vacuum of rigorous evidence [5, 6]. We are unaware of any evidence to date that demonstrates that smoking is protective against COVID-19. In fact, although current smoking has not been found to be a major risk factor for COVID-19, COPD patients appear to have worse outcomes upon contracting the virus with an almost threefold odds ratio of dying, needing mechanical ventilation, or being admitted to an intensive care unit [7]. As many of our COPD patients in this pandemic fit an unfavorable demographic profile – elderly, male, and with cardiovascular comorbidities – we would continue to recommend exercising caution in protecting them from COVID-19.

## **References**

1. Rossato M, Russo L, Mazzocut S, Di Vincenzo A, Fioretto P, Vettor R. Current smoking is not associated with COVID-19. *Eur Respir J* 2020.
2. Leung JM, Yang CX, Tam A, Shaipanich T, Hackett TL, Singhera GK, Dorscheid DR, Sin DD. ACE-2 Expression in the Small Airway Epithelia of Smokers and COPD Patients: Implications for COVID-19. *Eur Respir J* 2020.

3. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, Liu L, Shan H, Lei CL, Hui DSC, Du B, Li LJ, Zeng G, Yuen KY, Chen RC, Tang CL, Wang T, Chen PY, Xiang J, Li SY, Wang JL, Liang ZJ, Peng YX, Wei L, Liu Y, Hu YH, Peng P, Wang JM, Liu JY, Chen Z, Li G, Zheng ZJ, Qiu SQ, Luo J, Ye CJ, Zhu SY, Zhong NS. Clinical Characteristics of Coronavirus Disease 2019 in China. *N Engl J Med* 2020.
4. Goyal P, Choi JJ, Pinheiro LC, Schenck EJ, Chen R, Jabri A, Satlin MJ, Campion TR, Jr., Nahid M, Ringel JB, Hoffman KL, Alshak MN, Li HA, Wehmeyer GT, Rajan M, Reshetnyak E, Hupert N, Horn EM, Martinez FJ, Gulick RM, Safford MM. Clinical Characteristics of Covid-19 in New York City. *N Engl J Med* 2020.
5. Garrett L. COVID-19: the medium is the message. *Lancet* 2020; 395(10228): 942-943.
6. Zarocostas J. How to fight an infodemic. *Lancet* 2020; 395(10225): 676.
7. Guan WJ, Liang WH, Zhao Y, Liang HR, Chen ZS, Li YM, Liu XQ, Chen RC, Tang CL, Wang T, Ou CQ, Li L, Chen PY, Sang L, Wang W, Li JF, Li CC, Ou LM, Cheng B, Xiong S, Ni ZY, Xiang J, Hu Y, Liu L, Shan H, Lei CL, Peng YX, Wei L, Liu Y, Hu YH, Peng P, Wang JM, Liu JY, Chen Z, Li G, Zheng ZJ, Qiu SQ, Luo J, Ye CJ, Zhu SY, Cheng LL, Ye F, Li SY, Zheng JP, Zhang NF, Zhong NS, He JX. Comorbidity and its impact on 1590 patients with Covid-19 in China: A Nationwide Analysis. *Eur Respir J* 2020.