

## Comment on “Comparison of arterial stiffness and ultrasound indices in patients with and without chronic obstructive pulmonary disease”

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Dear Editor,

We have read with great interest the article entitled “Comparison of arterial stiffness and ultrasound indices in patients with and without chronic obstructive pulmonary disease” by Zhang et al.<sup>1</sup>. In the study, the authors compared the differences in arterial stiffness and ultrasound indices between patients with chronic obstructive pulmonary disease (COPD) and non-COPD and found that COPD patients had higher intima-media thickness, total plaque area, number of plaques, arterial stiffness, and ankle-brachial blood pressure index compared with the control group. In addition, this study also found that arterial stiffness in COPD patients was negatively correlated with ankle-brachial blood pressure index and positively correlated with intima-media thickness. This study provides evidence to explain the underlying mechanisms behind the increased incidence of cardiovascular disease in COPD patients. However, the following concerns need to be addressed.

First, the subjects of this study were COPD patients. However, information on the duration of COPD and the frequency of exacerbations per month/year is lacking. Obviously, the longer the duration of COPD, the higher the level of arterial stiffness in COPD patients. This hypothesis has also been clarified by previous studies<sup>2,3</sup>. In addition, information about drug therapy strategies and lung function in COPD patients is unknown. It is reasonable to assume that the treatment strategies in COPD patients, such as glucocorticoids, also have a potential influence on the level of arterial stiffness. Therefore, it

is highly recommended to provide information on COPD patients' disease duration and related drug treatment strategies to reduce confounding factors in conclusions.

Second, smoking, even household smoking or passive smoking, is one of the recognized risk factors for COPD. Passive smoking, both at home and at work, was associated with an increased incidence of COPD in a large population-based study<sup>4</sup> (OR 3.80; 95%CI 1.29–11.2). In addition, a study involving 57,779 Chinese participants also demonstrated that cigarette smoking is one of the important risk factors for the development of COPD<sup>5</sup>. However, it is important to note that there was no significant difference in the percentage of smoking between COPD group and control group, as described in Table 1. This potentially leads to the misconception in clinical practice that smoking has no significant effect on the incidence of COPD and then resulting in a lack of necessary interventions and recommendations for smoking behaviors. Perhaps in the selection of patients, the authors have balanced for differences in smoking between the two groups. However, this process needs to be clarified in this study.

### AUTHORS' CONTRIBUTIONS

**JW:** Conceptualization, Supervision, Validation, Writing – original draft, Writing – review & editing. **XZ:** Conceptualization, Supervision, Validation, Writing – original draft, Writing – review & editing.

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