Reviewer's report

Title: Relationship between CT air trapping criteria and lung function in small airway impairment quantification

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Reviewer: Shin Matsuoka

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In this article, authors evaluated automated CT air trapping quantification in assessing small airway obstruction using single breath nitrogen test (SBNT) and subsequently determine which CT criteria was the most accurate to predict small airway obstruction. They found that the expiratory to inspiratory ratio for MLD (E/I MLD) had the highest diagnostic performance for small airway assessment. This article is well designed and well written. Also their findings are interesting, and this study provided useful information for the quantitative CT evaluation of air trapping, however, the results in this study are limited in normal or asymptomatic subjects. So, in “abstract” and “conclusion”, this limitation should be stated. In addition, in patients with COPD, air trapping is affected by the extent of emphysema. Actually, previous studies advocated that the CT quantification of air trapping should be evaluated in the lung area without emphysematous lesion (ref No. 18 and J Comput Assist Tomogr. 2007;31(3):384-389.). Thus, this method also should be discussed.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests