CT Scan Segmental Airway Lumen Area

To the Editor:

In a recent issue of CHEST (March 2015) Thomson and colleagues\(^1\) conclude that airway lumen is reduced in patients with asthma who smoke compared with those who have never smoked, although they did not detect an expected increase in wall thickness. An alternative explanation not discussed would be that both smoking and airway size reflect socioeconomic status (SES) in early life. The association of lower SES with poorer lung function persists throughout life,\(^2\) and smoking is strongly correlated with social class in the United Kingdom.\(^3\) It is unfortunate the article presents body surface area rather than height, because the latter is a marker of childhood SES\(^4\) and may be more informative.

On a prosaic note, the left bronchial 3 (ie, more proximal airway) lumen area in both columns of Table 1 in their article\(^1\) is 8 mm\(^2\) (with appropriate CIs), much smaller than both the equivalent on the right (22 mm\(^2\)) and in the more distal airways. Hopefully, this is a transcription error, because such internal inconsistency could undermine an otherwise comprehensive and excellent body of work.

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References


Response

To the Editor:

We read with interest the comments of Mr Ross and Dr Sebbage on our article in CHEST\(^3\) in which we reported that the CT scan segmental airway lumen area is reduced in smokers with asthma compared with never smokers with asthma, particularly in severe disease, and is associated with worse current symptom control and small airway dysfunction. Mr Ross and Dr Sebbage suggest that the reduction in airway lumen found in smokers with asthma may reflect the adverse effects of lower socioeconomic status in early life on lung function in the smokers group.\(^2,3\) As noted by Mr Ross and Dr Sebbage, height is considered a marker of socioeconomic status,\(^1\) and although we found that height was similar between never smokers with asthma and smokers with asthma (1.67 m [1.58, 1.75] and 1.67 m [1.62, 1.77], respectively; \(P = .814\)), we acknowledge that we cannot exclude lower socioeconomic status in early life influencing airway lumen area. The cross-sectional nature of the study precludes us from answering this interesting hypothesis.

We also thank Mr Ross and Dr Sebbage for pointing out the transcription error in Table 1 of our article.\(^1\) The correct median (interquartile range) for left bronchial 3 lumen area in never smokers with asthma and smokers with asthma is as follows: 21.7 mm\(^2\) (16.0, 27.7) and 19.3 mm\(^2\) (16.8, 26.2), respectively (\(P = .532\)).

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References