We should not underestimate the role of biofilms in persistent (chronic) bronchitis – Authors' reply

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Authors' reply

We thank Mark Lloyd Everard for his comments and interest in our paper.[1] The main point raised relates to the risk of false negative biofilm results and our interpretation therefore minimising the perceived requirement for anti-biofilm treatments. We agree that there is a need to understand whether anti-biofilm treatments improve outcomes in patients with protracted bacterial bronchitis or bronchiectasis; however, data are scarce. Indeed, we are unaware of any guidelines for paediatric protracted bacterial bronchitis and bronchiectasis that recommend anti-biofilm treatments.

Everard raises important points about sampling issues long known to limit respiratory microbiology studies. We considered bronchoalveolar lavage to be the optimal method for our study as it is the gold standard for assessing airway microbiology in young children, its specimens are less prone to upper airway contamination than sputum, and it samples more of the airways than the protected specimen brush.[2–4] As noted in our Article,[1] we also considered the use of microscopy a limitation of our study due to the method potentially lacking sensitivity. The issues highlighted by Everard point to an important overarching challenge facing the field: what is the best way to diagnose biofilm-associated airway infections? The solution is not yet clear; however, as noted in our paper, we recommend the development of a biofilm test suitable for use in clinical laboratories as a research priority.

We thank Everard for suggesting squamous metaplasia as another potential explanation for squamous epithelial cell-associated biofilms. Children in our study were not assessed for squamous metaplasia and we are unaware of any study that has systematically examined squamous metaplasia among children with protracted bacterial bronchitis or bronchiectasis. As upper airway contamination, microaspiration, and squamous metaplasia are all potentially plausible explanations for the presence of squamous cell-associated biofilms in bronchoalveolar lavage specimens, we recommend differentiating these biofilms from non-squamous epithelial cell biofilms to achieve a nuanced understanding of the role of biofilms in chronic airway infections.

The declaration of interests remains the same as in the original Article.

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