

Letter to the Editor in reply to 'Pulmonary vascular volumes and airways obstruction in SCD patients'

Dear Editor,

We thank Professor Greenough and Dr Lunt for their interest¹ in our manuscript,² and for the suggestion that changes in pulmonary vascular volumes may lead to airflow obstruction. In this group of sickle cell diseased (SCD) children and controls, we used carbon monoxide transfer (DL_{CO}) related to pulmonary blood flow (Q_{peff}) at rest and on exercise as a surrogate for pulmonary capillary blood volume.³ DL_{CO} corrected for haemoglobin and surface area was significantly higher in SCD at rest, but only by about 10%, while Q_{peff} was 15–20% higher. $DL_{CO}:Q_{peff}$, therefore, was significantly lower in SCD at rest and remained so at all exercise stages, thus implying lack of normal recruitment and distension of the pulmonary microcirculation, and suggesting that at rest at least, the microvasculature is unlikely to be

contributing to airflow obstruction, a result which contrasts with their findings.⁴ This discrepancy is unexplained. In the meantime, we agree that further mechanistic research is needed to try to understand why airflow obstruction develops and how it contributes to the pathophysiology of lung disease in these children.

Suzanne Crowley,¹ Rifat A Chaudry,^{1,2} Mark Rosenthal,² Andrew Bush^{2,3}

¹Department of Paediatrics, St George's Hospital, London, UK

²Department of Paediatric Respiratory Medicine, Royal Brompton Hospital, London, UK

³Department of Paediatrics, Imperial College, London, UK

Correspondence to Dr Suzanne Crowley, Section for Paediatric Lung and Allergic Diseases, Oslo Universitetssykehus, Rikshospitalet, Oslo 0027, Norway; suzcro@ous-hf.no

Contributors SC and AB drafted the response, and all approved the final draft.

Competing interests None.

Provenance and peer review Not commissioned; internally peer reviewed.



CrossMark

To cite Crowley S, Chaudry RA, Rosenthal M, *et al.* *Thorax* 2014;**69**:1052.

Received 20 June 2014

Accepted 22 June 2014

Published Online First 22 July 2014



► <http://dx.doi.org/10.1136/thoraxjnl-2013-204464>

► <http://dx.doi.org/10.1136/thoraxjnl-2014-205886>

Thorax 2014;**69**:1052.

doi:10.1136/thoraxjnl-2014-205926

REFERENCES

- 1 Greenough A, Lunt A. Pulmonary vascular volumes and airways obstruction in SCD patients. *Thorax* 2014;**69**:1051.
- 2 Chaudry RA, Rosenthal M, Bush A, *et al.* Reduced forced expiratory flow but not increased exhaled nitric oxide or airway responsiveness to methacholine characterises paediatric sickle cell airway disease. *Thorax* 2014;**69**:580–5.
- 3 Chaudry RA, Rosenthal M, Bush A, *et al.* The impact of sickle cell disease on exercise capacity in children. *Chest* 2013;**143**:478–84.
- 4 Lunt A, Desai SR, Wells AU, *et al.* Pulmonary function, CT and echocardiographic abnormalities in sickle cell disease. *Thorax* 2014;**69**:746–51.