Ethics approval
This study was conducted with the approval of Candelaria Hospital.

Provenance and peer review
Not commissioned; not externally peer reviewed.
Accepted 3 February 2011
Published Online First 11 March 2011
doi:10.1136/thx.2011.160648

REFERENCES

Author’s response
We thank Garcia-Talavera et al for their interest in our paper.1 We acknowledge their finding, in a group of chronic obstructive pulmonary disease patients with only mild hypoxaemia, of a correlation between early oxyhaemoglobin desaturation during the 6-minute walk test (6MWT) and desaturation over 24 h.2 The 6MW Ts performed in our study were carried out according to American Thoracic Society guidelines.3 Given their recommendations that oxygen saturation measured by pulse oximetry (SpO2) should not be used for constant monitoring during the test and that the technician must not walk with the patient to observe SpO2 saturation in our study was measured at rest and immediately at the end of the 6-minute period. We are thus unable to comment upon the presence or absence of early as opposed to late desaturation in our cohort of desaturators. Nonetheless, it is likely that our group of 80 ‘end test’ desaturators would have included both early and late desaturators, according to the definition of Garcia-Talavera et al. We found no association between the degree of desaturation at the end of the 6MWT and our primary or secondary outcome criteria.

Others have similarly found an absence of association between the degree of desaturation and improvement in exercise capacity with supplemental oxygen.4 Whether or not early desaturation during the 6MWT correlates with desaturation during activities of daily living or nocturnally, it remains unknown whether such early desaturation correlates with degree of dyspnoea or whether treating it with supplemental oxygen would improve this symptom.

Christine F McDonald, Rosemary P Moore, David Berlowitz, Linda Deneny, Jeffrey J Pretto, Danny J Brazzale
Correspondence to Christine F McDonald, Institute for Breathing and Sleep, Department of Respiratory and Sleep Medicine, Austin Hospital, Heidelberg, Victoria, Australia; christine.mcdonald@austin.org.au

Competing interests
None.

Ethics approval
This study was conducted with the approval of the Human Research Ethics Committee, Austin Health, Heidelberg, Victoria, Australia.

Provenance and peer review
Not commissioned; not externally peer reviewed.
Accepted 10 January 2011
Published Online First 11 March 2011
doi:10.1136/thx.2011.158501

REFERENCES

CORRESPONDENCE
Peripheral airway/alveolar nitric oxide concentration in asthma
We read with great interest the paper by Gelb and colleagues3 who suggest that peripheral airway/alveolar nitric oxide (NO) concentration after correction for arterial NO back-diffusion (CalvNOcorrected) is normal during asthma exacerbation (with a hypothesis of an incidence of >50% of its increase). If one admits that an exacerbation constitutes the ultimate expression of loss of asthma control, their results are in line with ours demonstrating that CalvNOcorrected is not a marker of asthma control.2 Nevertheless, some of their patients with an exacerbation had an increase in CalvNOcorrected since one can see in their figure 5 that almost 20% of their patients are above the 95th percentile of healthy subjects (∼7 ppb). The small size of their cohort (n=15) is an obvious limitation that is acknowledged by the authors.

We therefore reanalysed the results of our multicentre trial4 to evaluate the prevalence of increased CalvNOcorrected. When using an upper normal limit of 8 ppb for CalvNOcorrected (that corresponds approximately to their upper normal value5), the prevalence of its increase is 23% (41/175) in our population of adults and children with asthma. In our study we further demonstrated a negative relationship between CalvNOcorrected and mid forced expiratory flow (FEF25–75%), which may suggest that peripheral NO could be associated with airway remodelling.6 This latter result was in line with the demonstration that peripheral airway/alveolar NO concentration (without correction for arterial NO back-diffusion) is correlated with FEF25–75% in children with refractory asthma.3 Packett and colleagues recently suggested that children with asthma with increased CalvNOcorrected (46/179, 26%) had significantly worse asthma control and morbidity.7 Overall, all these results emphasise that peripheral airway/alveolar NO concentration, after correction for arterial NO back-diffusion, can be increased in some patients with asthma (∼25%). Whether peripheral NO helps to identify a specific ‘phenotype’ of asthma which may be more closely linked to severity than to control warrants further studies.

Gelb and colleagues also show that 2/15 subjects with an exacerbation had normal exhaled NO values.1 Similarly, we have previously shown in a multicentre trial that patients with acute asthma admitted to the emergency department can have normal exhaled NO levels (2/65 patients in our study).8 In conclusion, the clinical usefulness of techniques to discriminate NO gas exchange between large central airways and peripheral smaller airways/alveolar compartments in patients with asthma remains to be established, and the factors governing the increase in exhaled NO remain partly determined.

Bruno Mahut,1 Christophe Delclaux1,2,3
1Service de Physiologie, Clinique de la Dyspnée, Hôpital Européen Georges Pompidou, Assistance Publique, Hôpitaux de Paris, France; 2IC 9201 Pneumothérapie, Hôpital Européen Georges Pompidou, Assistance Publique, Hôpitaux de Paris, France; 3Université Paris Descartes, Paris, France

Correspondence to Professor Christophe Delclaux, Service de Physiologie, Clinique de la Dyspnée, Hôpital Européen Georges Pompidou, 20, rue Leblanc, Paris 75015, France, christophe.delclaux@ego.aphp.fr

Competing interests CD has received a free NO analyser (ENDONO 8000) from SERES (Aix en Provence, France) for the development of their software for NO analysis at multiple exhaled flow rates. BM has no competing interests.

Provenance and peer review Not commissioned; not externally peer reviewed.

Thorax July 2011 Vol 66 No 7
Author’s response

I want to thank Drs Mahut and Delclaux for their interesting letter concerning our recent paper1 and would offer the following response. During acute asthma exacerbation only two of 15 patients with asthma (13%) had a combined abnormally elevated central airways nitric oxide (NO) flux and elevated peripheral airway/alveolar NO concentration after correction for NO axial back-diffusion. Central airways NO flux remained the major site of ‘NO-mediated inflammation’ in 13 of 15 patients with asthma since two had normal NO gas exchange despite acute exacerbation.1 This latter observation needs to be further investigated since the clinical response was similar to that in patients with asthma with abnormal NO gas exchange. Many years ago we investigated the simplified detection of peripheral airway disease and showed that analyses of the distal part of the maximum expiratory flow–volume curve were helpful.2 However, in a subsequent study3 we reported that, if the ratio of forced expiratory volume in 1 s to forced vital capacity (FEV1/FVC) was ≥75%, the occurrence of an isolated abnormal mid forced expiratory flow (FEF25–75) was rare. However, if the FEV1/FVC was <75%, it would not be unusual to find an abnormal FEF25–75, but it would not discriminate peripheral from large central airways obstruction.1 I hope these comments are helpful and appreciate their interest.

Arthur Franklin Gelb

Correspondence to Arthur Franklin Gelb, Lakewood Regional Medical Center and Geffen School of Medicine at UCLA, 3650 E South St, Ste 308, Lakewood 90712, USA; afgelb@msn.com

Competing interests None.

Provenance and peer review Not commissioned; not externally peer reviewed.

REFERENCES


Author’s response

Drs Marsh and colleagues are essentially correct in saying that the word ‘wheeze’ rather than ‘asthma’ may have been more appropriate in the title of our paper. Not all wheeze is asthma but, given the lack of a widely agreed definition for asthma, we chose to use a simple but widely used definition (wheeze in the past 12 months) in this Ecuadorian study to estimate prevalence. As the authors will have seen from the abstract, the aim of the study was to investigate risk factors for atopic and non-atopic wheeze illness to understand better those that may cause or protect against asthma in the study population.1 All subjects with wheeze in the past 12 months had a history of wheeze ever. A high proportion of children in the study population had a history of wheeze ever (52.5%), most of which could be attributed...
Peripheral airway/alveolar nitric oxide concentration in asthma

Bruno Mahut and Christophe Delclaux

Thorax 2011 66: 632-633 originally published online September 13, 2010
doi: 10.1136/thx.2010.147959

Updated information and services can be found at:
http://thorax.bmj.com/content/66/7/632.2

These include:

References
This article cites 5 articles, 1 of which you can access for free at:
http://thorax.bmj.com/content/66/7/632.2#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/