MDRTB/XDRTB depends on drug sensitivity test (DST) results to the remaining first-line and reserve drugs.

We have previously demonstrated that our national ‘fastrack’ molecular tuberculosi s and rifampicin resistance identification service significantly reduces time for detection compared with bacteriological culture. Overall, Mycobacterium tuberculosis complex is detected 15.2 days earlier than gold standard automated liquid culture methods and detected 15.2 days earlier than the gold standard.

During 2008, 53 UK cases of MDRTB were reported by the HPA, of which the NMRL identified 47 (89%). The NMRL identified a further 65 cases of MDRTB during 2009. Of the 112 MDRTB cases, 107 (96%) had a complete DST profile for all 11 drugs tested, and 87 (78%) isolates were initially identified as MDRTB by ‘fastrack’.

Fifty-one of the 107 isolates (48%) were resistant to rifampicin and isoniazid alone of the first-line drugs (table 1, group 1); 17 (53%) were additionally resistant to one reserve drug, ie, only 54 isolates (67%) were sensitive to all reserve drugs. In the remaining 56 isolates (52%), resistance to rifampicin and isoniazid was combined with resistance to another first-line drug (table 1, group 2), and 34 of these (61%) were additionally resistant to a reserve drug; 22 isolates (39%) were sensitive to all reserve drugs. Almost half (48%) of all MDRTB isolates were resistant to at least one reserve drug and 21% were resistant to all four first-line drugs.

Our results show multidrug-resistant isolates with resistance to one or more of the remaining first-line drugs increases the likelihood of resistance to reserve drugs. In table 1, the rate of resistance to any second-line drug was significantly greater when accompanied by resistance to another first-line drug (group 2 vs group 1) (Fisher’s exact test p = 0.0065). Our findings justify a policy of using the ‘fastrack’ approach and, when rifampicin resistance has been detected and a culture obtained, of setting up DST to all first and reserve drugs immediately and simultaneously (rather than the conventional approach of DST for reserve drugs only when MDRTB is detected phenotypically). The NMRL has recently added a similar test for resistance to isoniazid and the introduction of genotypic tests for XDRTB would be highly desirable. This policy would greatly accelerate the return of DST results to relevant clinics, reducing the time for the instigation of appropriate management, helping to reduce any increasing prevalence of MDRTB.

Acknowledgements The authors owe grateful thanks to all staff of the NMRL for their expertise and unfailing help and to all staff of other microbiology laboratories involved in the culture and submission of samples to the NMRL.

S L Mitchell, N Seoudi, D C S Hutchison, F A Drobniewski

1 National Mycobacterium Reference Laboratory, Barts and the London, Queen Mary’s School of Medicine and Dentistry, London, UK; 2 Institute of Dentistry, Barts and the London, Queen Mary’s School of Medicine and Dentistry, London, UK;

Correspondence to Dr F A Drobniewski, National Mycobacterium Reference Laboratory, Barts and the London, Queen Mary’s School of Medicine and Dentistry, London, UK; f.drobniewski@qmul.ac.uk

REFERENCES


A randomised trial of domiciliary, ambulatory oxygen in patients with COPD and dyspnoea but without resting hypoxaemia

We read with great interest the recently published article by Moore et al and we would like to make the following remarks.

Desaturation with exercise is still a hotly debated issue, and the papers that deal with the effectiveness of oxygen therapy during exercise in patients with chronic obstructive pulmonary disease who desaturate have not shown any benefit. It should nevertheless be pointed out that there are different types of desaturating patients with exercise. Indeed, we recently published a paper the results of which clearly show that only patients who desaturate before 1 min—early desaturators—during the 6-minute walking test are associated with an important desaturation during daily life activities. This is why we believe that desaturation with exercise research has to take into account whether the patients are early or late desaturators in order to reach sound clinical conclusions. Along the same lines, the effectiveness of oxygen therapy in these patients can differ according to the type of patients (early or late desaturators).
Peripheral airway/alveolar nitric oxide concentration in asthma

We read with great interest the paper by Gelb and colleagues who suggest that peripheral airway/alveolar nitric oxide (NO) concentration after correction for axial NO back-diffusion (CalvNO_corrected) is normal during asthma exacerbation (with a hypothesis of an increase 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 CalvNO_corrected is not a marker of asthma control. Nevertheless, some of their patients with an exacerbation had an increase in CalvNO_corrected 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 trial to evaluate the prevalence of increased CalvNO_corrected. When employing an upper normal limit of 7 ppb for CalvNO_corrected (that corresponds approximately to their upper normal value), 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 CalvNO_corrected and mid forced expiratory flow (FEF25–75%), which may suggest that peripheral NO could be associated with airway remodelling. This latter result was in line with the demonstration that peripheral airway/alveolar NO concentration, after correction for axial 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. 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). 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, Christophe Delclaux

1Service de Physiologie, Clinique de la Dyspnée, Hôpital Européen Georges Pompidou, Assistance Publique, Hôpitaux de Paris, France; 2IC 9201 Plurithématique, 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.

REFERENCES


CORRESPONDENCE

Peripheral airway/alveolar nitric oxide concentration in asthma

We thank García-Talavera et al for their interest in our paper. 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. The 6MWTs performed in our study were carried out according to American Thoracic Society guidelines. 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 García-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. 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 Deney, 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 Candelaria Hospital.

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

Accepted 10 January 2011

Published Online First 11 March 2011


doi:10.1136/thx.2010.158501

REFERENCES


CORRESPONDENCE

Peripheral airway/alveolar nitric oxide concentration in asthma

We read with great interest the paper by Gelb and colleagues who suggest that peripheral airway/alveolar nitric oxide (NO) concentration after correction for axial NO back-diffusion (CalvNO_corrected) is normal during asthma exacerbation (with a hypothesis of an increase 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 CalvNO_corrected is not a marker of asthma control. Nevertheless, some of their patients with an exacerbation had an increase in CalvNO_corrected 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 trial to evaluate the prevalence of increased CalvNO_corrected. When employing an upper normal limit of 7 ppb for CalvNO_corrected (that corresponds approximately to their upper normal value), 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 CalvNO_corrected and mid forced expiratory flow (FEF25–75%), which may suggest that peripheral NO could be associated with airway remodelling. This latter result was in line with the demonstration that peripheral airway/alveolar NO concentration, after correction for axial 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. 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).

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, Christophe Delclaux

1Service de Physiologie, Clinique de la Dyspnée, Hôpital Européen Georges Pompidou, Assistance Publique, Hôpitaux de Paris, France; 2IC 9201 Plurithématique, 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.