

but must be openly discussed, communicated and documented. A predicted moderate to high risk of death from community-acquired pneumonia is a highly relevant piece of information required to mount an ethically valid treatment recommendation and decision, particularly in those patients with pneumonia regarded to be a terminal event. Nevertheless, we recalculated the predictions of the CRB-65 score excluding all those who died without having received any ventilator support during hospitalisation. The results are: overall death rate 8618, 2.5%, CRB-65 risk class 1: 0.5%, risk class 2: 1.7% and risk class 3: 12.2%. These numbers support the following conclusions: (1) the CRB-65 score remains useful in predicting deaths in a three class pattern; (2) obviously, virtually no previous study on community-acquired pneumonia truly excluded all patients with treatment limitations.

### S Ewig,<sup>1</sup> N Birkner<sup>2</sup>

<sup>1</sup>Thoraxzentrum Ruhrgebiet, Kliniken für Pneumologie und Infektiologie, Herne und Bochum, Germany; <sup>2</sup>BQS Institut für Qualität und Patientensicherheit, Duesseldorf, Germany

**Correspondence to** Dr N Birkner, BQS Institut für Qualität und Patientensicherheit, Kanzlerstr. 4, D-40472 Düsseldorf, Germany; n.birkner@bqs-institut.de

**Competing interests** None.

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

Accepted 24 August 2010  
Published Online First 23 November 2010

*Thorax* 2011;**66**:262–263.  
doi:10.1136/thx.2010.149716

### REFERENCE

1. Charles P. Predicting CAP-related mortality with CRB-65. *Thorax* 2011;**66**:262.

## Pulmonary rehabilitation in patients with MRC Dyspnoea Scale 2

The recent INTERCOM study emphasises the point that community-based rehabilitation is effective, even in patients with chronic obstructive pulmonary disease (COPD) with less advanced airflow obstruction.<sup>1</sup> However, COPD and pulmonary rehabilitation guidelines recommend offering pulmonary rehabilitation (PR) to patients who consider themselves functionally disabled (usually defined as MRC Dyspnoea Scale grades 3 or above).<sup>2–3</sup> We wished to test whether less breathless patients with COPD (ie, MRC Dyspnoea Scale grade 2) also benefit from PR.

### METHODS

All patients with MRC grade 2 dyspnoea referred to the Lambeth & Southwark Community Pulmonary Rehabilitation Team

**Table 1** Effects of pulmonary rehabilitation in patients with MRC 2 and MRC 3/4 dyspnoea

Outcomes	Change following PR		p Value
	MRC 2	MRC 3/4	
Mean (SD) ISW (m)	83 (7)	68 (5)	0.08
Median (25 <sup>th</sup> , 75 <sup>th</sup> centile) ISW% change	27 (12, 45)	33 (9, 68)	0.07
Mean (SD) CRQ-D	0.75 (0.11)	0.75 (0.07)	0.96
Median (25 <sup>th</sup> , 75 <sup>th</sup> centile) HAD-anxiety	−1 (−3, 1)	−1 (−3, 0)	0.74
Median (25 <sup>th</sup> , 75 <sup>th</sup> centile) HAD-depression	0 (−2.5, 1)	−1 (−3, 0)	0.46

HAD, Hospital Anxiety and Depression Scale; ISW, incremental shuttle walk; PR, pulmonary rehabilitation.

between the years 2004–7 were included in the study. Patients were offered PR at one of two hospital or five community sites. Each programme consisted of two supervised sessions per week for 8 weeks (with one unsupervised home session) delivered by the same team. Outcome measures were the incremental shuttle walk (ISW), the Chronic Respiratory Disease Questionnaire Dyspnoea score (CRQ-D) and the Hospital Anxiety and Depression Scale (HAD-Anxiety and HAD-Depression). Patients with COPD with MRC dyspnoea grades 3 or 4 undertaking PR over the same time period acted as controls. Changes in outcomes between patients with MRC grade 2 and those with MRC grades 3 or 4 dyspnoea before and after PR were compared using t tests or Mann-Whitney tests.

### RESULTS

The results were analysed for 126 patients with MRC grade 2 dyspnoea and 316 with MRC grades 3/4 dyspnoea who completed PR (attended >8 supervised sessions). The groups were well matched for age (mean 69 vs 68 years), gender (50% vs 43% male) and mean forced expiratory volume in 1 s (58% vs 54% predicted), although the MRC grade 2 group had increased ISW (304 vs 201 m;  $p<0.001$ ), less dyspnoea (median CRQ-D 3.2 vs 2.6) and reduced anxiety and depression scores (median HAD-Anxiety 6.0 vs 9.0; median HAD-Depression 5.0 vs 8.0). Following PR, the MRC grade 2 dyspnoea group showed similar improvements in ISW, CRQ-D, HAD-Anxiety and HAD-Depression to the MRC grades 3/4 dyspnoea group (table 1).

### DISCUSSION

Although patients with MRC dyspnoea grade 2 referred for PR have better exercise capacity and fewer symptoms of dyspnoea, anxiety or depression than patients with MRC dyspnoea grades 3/4, they show similar improvements with PR. Exercise-based interventions for COPD should not ignore less severe patients (either in terms of lung function or subjective dyspnoea).

**W D-C Man, A Grant, L Hogg, J Moore, R D Barker, J Moxham**

Department of Respiratory Medicine, King's College Hospital and Lambeth & Southwark Pulmonary Rehabilitation Team, Harefield, UK

**Correspondence to** W D-C Man, Harefield Hospital, Hill End Road, Harefield UB9 6JH, UK; research@williamman.co.uk

**Funding** WD-CM is supported by a National Institute for Health Research Clinician Scientist award. The views expressed in this publication are those of the authors and not necessarily those of the NHS, The National Institute for Health Research or the Department of Health.

**Competing interests** None.

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

Accepted 8 February 2010  
Published Online First 29 September 2010

*Thorax* 2011;**66**:263. doi:10.1136/thx.2010.136085

### REFERENCES

1. van Wetering CR, Hoogendoorn M, Mol SJ, *et al*. Short- and long-term efficacy of a community-based COPD management programme in less advanced COPD: a randomised controlled trial. *Thorax* 2010;**65**:7–13.
2. National Institute for Health and Clinical Excellence (NICE). Chronic obstructive pulmonary disease: national clinical guideline for management of chronic obstructive pulmonary disease in adults in primary and secondary care. *Thorax* 2004;**59**(Suppl 1):1–232.
3. BTS Standards of Care Subcommittee on Pulmonary Rehabilitation. Pulmonary rehabilitation. *Thorax* 2001;**56**:827–34.

## The potential danger of a solely interferon- $\gamma$ release assay-based approach to testing for latent *Mycobacterium tuberculosis* infection in children

The study reported by Lucas *et al*<sup>1</sup> is a valuable addition to recent publications that have compared the performance of commercial interferon- $\gamma$  release assays (IGRAs) with that of the tuberculin skin test (TST) for the diagnosis of latent tuberculosis infection (LTBI) in high-risk children.<sup>2–3</sup> However, we believe that the principal conclusions are not supported by the data provided and that a more guarded interpretation is warranted.

In agreement with previous studies in children,<sup>3–5</sup> Lucas *et al* found significant discordance between the results of IGRAs and TST. Specifically, of 420 T-SPOT.TB and 460