

References

- 1 GINA (Global Initiative for Asthma). *Global strategy for asthma management and prevention*. Available from www.ginasthma.com.
- 2 Slader CA, Reddel HK, Spencer LM, et al. Double blind randomised controlled study of two different breathing techniques for the management of asthma. *Thorax* 2006;**61**:651–6.
- 3 Simmons MS, Nides MA, Rand CS, et al. Unpredictability of deception in compliance with physician-prescribed bronchodilator inhaler use in a clinical trial. *Chest* 2000;**118**:290–5.
- 4 Reddel HK, Toelle BG, Marks GB, et al. Analysis of adherence to peak flow monitoring when recording of data is electronic. *BMJ* 2002;**324**:146–7.
- 5 Ryan D, Cobern W, Wheeler J, et al. Mobile phone technology in the management of asthma. *J Telemed Telecare* 2005;**11**(Suppl 1):43–6.

Assessing the efficacy of spirometry for smoking cessation

In a recent issue of *Thorax* Bednarek *et al*¹ presented interesting results from a large-scale prospective cohort study on the effect of combining spirometric tests with simple smoking cessation advice in 3077 middle-aged smokers with previously undetected airflow obstruction compared with smokers without airflow obstruction. Carbon monoxide-validated smoking cessation rates after 12 months of follow-up were 16% in subjects with airflow obstruction and 12% in smokers without airflow obstruction. These results are promising; however, we think that the authors' conclusion that spirometric screening of chronic obstructive pulmonary disease (COPD) is effective in smoking cessation is too far-reaching because of the limitations of the study design.

The conclusion by Bednarek *et al*¹ that spirometry is efficacious in smoking cessation is limited by the fact that their study was not a randomised controlled trial but a prospective cohort study comparing smokers with previously undetected airflow obstruction with those without airflow obstruction. This might have introduced bias. It is possible, for example, that the smokers with airflow obstruction in this study might have been more susceptible to the "health warnings" given by the doctor who evaluated the spirometric test results with them. This higher susceptibility to health warnings is indicated by the fact that the follow-up response rate was significantly higher among subjects with airflow obstruction (87%) than in those without airflow obstruction (62%), and that the follow-up response rate was associated with disease severity (90% in moderate to severe airflow obstruction compared with 81% in mild obstruction). Another problem is that neither prospective nor retrospective data appear to have been collected on whether smokers used pharmacological aids for smoking cessation on their own initiative during the 12 months of follow-up. The use of pharmacological aids for smoking cessation (such as nicotine replacement therapy, bupropion or nortriptyline) is more effective than behavioural treatment (advice) alone.^{2,3} It cannot be ruled out that this use was differential, meaning that smokers with airflow obstruction were more likely to use this form of treatment in addition to advice from the physician.

The results of the study by Bednarek *et al*¹ are promising and in line with results from other studies.^{4,5} However, evidence from well designed randomised controlled trials is needed on the efficacy of spirometry for

smoking cessation. Smokers with airflow obstruction probably respond differently to smoking cessation treatment than those without airflow obstruction. It has been shown in previous studies that the former group is more likely to be older, to be more addicted to nicotine and tobacco and to have a longer smoking history (and therefore more pack years)—all of which are predictors of treatment outcome.⁶ We therefore suggest that the use of spirometry for smoking cessation should be tested in a homogeneous group of smokers with previously undetected airflow obstruction who are randomised to undergo either counselling including confrontation with spirometry or counselling without confrontation. We are currently conducting such a trial (ISRCTN 64481813).

D Kotz, C P van Schayck

Department of General Practice, Care and Public Health Research Institute (CAPHRI), Maastricht University, Maastricht, The Netherlands

M J H Huibers

Clinical Psychological Science, Maastricht University, Maastricht, The Netherlands

G J Wesseling

Department of Respiratory Medicine, University Hospital Maastricht, Maastricht, The Netherlands

Correspondence to: Daniel Kotz, Department of General Practice, Care and Public Health Research Institute (CAPHRI), Maastricht University, P O Box 616, 6200 MD Maastricht, The Netherlands; d.kotz@hag.unimaas.nl

References

- 1 Bednarek M, Gorecka D, Wielgomas J, et al. Smokers with airway obstruction are more likely to quit smoking. *Thorax* 2006;**61**:869–73.
- 2 Silagy C, Lancaster T, Stead LF, et al. Nicotine replacement therapy for smoking cessation. *Cochrane Database Syst Rev*, 2004;(3).
- 3 Hughes JR, Stead LF, Lancaster T. Antidepressants for smoking cessation. *Cochrane Database Syst Rev*, 2004;(4).
- 4 Stratelis G, Mölsted S, Jakobsson P, et al. The impact of repeated spirometry and smoking cessation advice on smokers with mild COPD. *Scand J Prim Health Care* 2006;**24**:133–9.
- 5 Gorecka D, Bednarek M, Nowinski A, et al. Diagnosis of airflow limitation combined with smoking cessation advice increases stop-smoking rate. *Chest* 2003;**123**:1916–23.
- 6 Jimenez-Ruiz CA, Masa F, Miravittles M, et al. Smoking characteristics: differences in attitudes and dependence between healthy smokers and smokers with COPD. *Chest* 2001;**119**:1365–70.

Authors' reply

We thank Dr Kotz and colleagues for their interest in our investigations and look forward to the results of their study.¹ Our study did not confirm the opinion that spirometric tests showing normal lung function would encourage smokers to continue to smoke. We are aware that our investigations were not randomised and pointed this out in the discussion. This weakness was also stressed in the accompanying editorial by Mannino.²

With regard to possible bias introduced by the use of pharmacological treatment by smokers in our study during 1 year of follow-up, we would like to repeat that (1) in the study protocol smokers were asked to use their own motivation only to stop smoking and not to take pharmacological treatment, and (2) during the follow-up visit all subjects confirmed compliance with the protocol. Although

we cannot exclude the possibility that deviation from the protocol may have occurred in some cases, it seems unlikely. Pharmacological treatment of nicotine dependence is not reimbursed and is relatively expensive in Poland. Bupropion is on prescription and only nicotine replacement therapy is available over the counter.

The suggestion that approaching younger smokers would be more rewarding is worth exploring. In our experience, airway obstruction is much less frequent (10%) in smokers aged 35–40 years than in older age groups. Since younger smokers are also less inclined to stop smoking, perhaps smoking cessation clinics would be more cost effective for this group than spirometric testing.

Michal Bednarek, Dorota Gorecka, Jan Zielinski

2nd Department of Respiratory Medicine, National Research Institute of TB and Lung Diseases, 26 Plocka St, 01-138 Warsaw, Poland; m.bednarek@igichp.edu.pl

References

- 1 Bednarek M, Gorecka D, Wielgomas J, et al. Smokers with airway obstruction are more likely to quit smoking. *Thorax* 2006;**61**:869–73.
- 2 Mannino DM. Spirometric screening: does it work? *Thorax* 2006;**61**:834–5.

Spirometric screening for COPD: wishful thinking, not evidence

The effect of spirometric screening on smoking cessation rates in the before and after study reported by Bednarek and colleagues¹ is interpreted by the authors and, with reservations, in the accompanying editorial by Mannino² as evidence to support the introduction of spirometric screening to detect early chronic obstructive pulmonary disease (COPD). This goes against the evidence of the study itself, and opposes the results of the comparative study of spirometric screening published by the same workers in 2004.³ Bednarek *et al* show an effect of spirometric screening in smokers with moderate or severe COPD (using 1995 European Respiratory Society criteria), but no effect in mild COPD despite the large numbers in their study. They repeat the findings of their earlier study, which is not mentioned in this paper by the authors themselves, nor is it mentioned by Mannino in his editorial. What is going on? Is there any significance in the fact that this work comes out of a programme entitled National Program of Early Detection and Prevention of COPD?⁴ What seems to be clear from this work is that there is no evidence that early detection leads to prevention in COPD.

In the first study Gorecka *et al*³ also claimed that their findings supported spirometric screening in mild disease. In fact they showed no effect overall, found evidence of an effect in a subgroup analysis of subjects with moderate or severe obstructive lung disease, and went on to make claims for the role of screening: "All smokers irrespective of their lung function tried to modify the habit as the result of screening for COPD combined with smoking cessation advice. The diagnosis of AL (airway limitation) motivated smokers to quit smoking." Yet the results state unequivocally that there was no difference between smokers who had airflow limitation diagnosed and those who had normal lung function (NLF): "The

one year cessation rate in smokers with AL was 10.8% versus 8.4% in smokers with NLF (NS)."

Why are these findings being interpreted over-optimistically as evidence of the value of screening for mild COPD? The most likely reason is wishful thinking, since the evidence suggests the opposite conclusion to that supported in the editorial by Mannino. Perhaps it simply arises from the frustrating recognition that COPD is common in adults but is predominantly undiagnosed.

There is a serious consequence from promoting early detection of COPD if there is no evidence that it makes any difference. Putting resources into spirometry for the early detection of COPD draws resources from more effective work, the most compelling of which in this context is general smoking cessation. In the study by Bednarek *et al.*,¹ 71 people needed to be screened for every additional 1 year smoking quit achieved. This is equivalent to a cost of about €650 per additional smoking quitter.

Smoking cessation is the most important intervention in the primary and secondary prevention of COPD. It is equally important in the primary and secondary prevention of cardiovascular disease and many cancers including lung cancer. Until there is some definite advantage to be gained from the early detection of COPD in improving cessation rates among smokers, there is no justification for promoting spirometric screening for mild COPD as a separate public health strategy. On current evidence, screening to detect mild COPD is not warranted and will waste resources that would be better employed to promote smoking cessation in general.

Patrick White

Department of General Practice and Primary Care,
King's College London, 5 Lambeth Walk, London
SE11 6SP, UK; patrick.white@kcl.ac.uk

References

- 1 **Bednarek M**, Gorecka D, Wielgomas J, *et al.* Smokers with airway obstruction are more likely to quit smoking. *Thorax* 2006;**61**:869–73.
- 2 **Mannino DM**. Spirometric screening: does it work? *Thorax* 2006;**61**:834–5.
- 3 **Gorecka D**, Bednarek M, Nowinski A, *et al.* Diagnosis of airflow limitation combined with smoking cessation advice increases stop-smoking rate. *Chest* 2003;**123**:1916–23.
- 4 **Zielinski J**, Bednarek M, Gorecka D. [National Program of Early Detection and Prevention of COPD in the years 2000–2002]. *Pneumonol Alergol Pol* 2005;**73**:116–21.

Authors' reply

The World Health Organisation estimates that chronic obstructive pulmonary disease (COPD) affects 600 million people and that three million die every year from COPD. It is expected that, in 2020, COPD will be the third main cause of death worldwide.¹ Until now these estimates have proved valid. This worrying situation calls for action.

In the National Program of Early Detection and Prevention of COPD in Poland, >90 000 "healthy" smokers aged 40 years or more performed spirometric tests. It was found that 20.3% of them had signs of airflow limitation compatible with a diagnosis of COPD, and 72% of these already had moderate or severe airflow limitation. None had previously consulted their family physician about their respiratory problems and most of them needed immediate further evaluation and treatment.²

By combining spirometric testing with anti-smoking advice, sustained quitting of smoking was achieved in 16% of the COPD group and 11% of the "healthy smoker" group.³ Similar results were obtained in the earlier pilot study based on a small group of subjects not included in the current study.⁴ These results are better than those obtained by general antismoking advice.⁵ The Lung Health Study confirmed that smoking cessation slows down the accelerated decline in forced expiratory volume in 1 s which occurs in patients with COPD with newly diagnosed disease. As many as 96.7% of subjects with moderate COPD who quit smoking still had moderate disease after 11 years of follow-up compared with 81.9% of those who continued to smoke. The initial success of quitting smoking in this group of patients turned out to be long lasting, with 93% still non-smokers after 11 years.⁶

Even if the cost of one additional person quitting smoking using our approach is €650, this is roughly half the cost of 1 year of treatment for one patient with COPD in the UK (US\$1245).⁷ It is also equivalent to the cost of one life-year saved by antismoking advice only, which ranges from €385 to €797.⁸

Although there is a lack of evidence of benefit related to the early diagnosis of mild COPD by spirometric testing,⁹ this does not mean that such benefit does not exist. Fifty years ago systemic hypertension was frequently diagnosed when a patient had a stroke. Now early diagnosis and treatment of systemic hypertension are obligatory.

Early diagnosis of COPD defines a group of smokers at risk not only for the progression of COPD but also for lung cancer or ischaemic

heart disease. Antismoking advice is an integral part of early diagnosis which will prevent many deaths from these diseases. For evidence of the benefits, we will have to wait.

**Michał Bednarek, Dorota Gorecka,
Jan Zielinski**

2nd Department of Respiratory Medicine, National
Research Institute of TB and Lung Diseases, 26 Płocka St,
01–138 Warsaw, Poland; m.bednarek@igichp.edu.pl

References

- 1 **Murray RP**, Anthonisen NR, Connett JE, *et al.* Effects of multiple attempts to quit smoking and relapses to smoking on pulmonary function. Lung Health Study Research Group. *J Clin Epidemiol* 1998;**51**:1317–26.
- 2 **Zielinski J**, Bednarek M, Gorecka D, *et al.* Increasing COPD awareness. *Eur Respir J* 2006;**27**:833–52.
- 3 **Bednarek M**, Gorecka D, Wielgomas J, *et al.* Smokers with airway obstruction are more likely to quit smoking. *Thorax* 2006;**61**:869–73.
- 4 **Gorecka D**, Bednarek M, Nowinski A, *et al.* Diagnosis of airflow limitation combined with smoking cessation advice increases stop smoking rate. *Chest* 2003;**123**:1916–23.
- 5 **Silagy C**, Stead LF. Physician advice for smoking cessation. *Cochrane Database Syst Rev*, 2001;CD000165.
- 6 **Anthonisen NR**, Connett JE, Murray RP. Smoking and lung function of Lung Health Study participants after 11 years. *Am J Respir Crit Care Med* 2002;**166**:675–9.
- 7 **Wouters EF**. Economic analysis of the Confronting COPD survey: an overview of results. *Respir Med* 2003;**97**(Suppl C):S3–14.
- 8 **Cornuz J**, Pinget C, Gilbert A, *et al.* Cost-effectiveness analysis of the first-line therapies for nicotine dependence. *Eur J Clin Pharmacol* 2003;**59**:201–6.
- 9 **Agency for Healthcare Research and Quality**. Use of spirometry for case finding, diagnosis, and management of chronic obstructive pulmonary disease (COPD). AHRQ Publication No 05-E017-2, 2005. www.ahrq.gov/downloads/pub/evidence/pdf/spirocopp/spiro.pdf (accessed 10 April 2006).

CORRECTION

doi: thx.2005.051961corr1

In table 1 of Somocurcio JG, Sotomayor A, Shin S, *et al.* (Surgery for patients with drug-resistant tuberculosis: report of 121 cases receiving community-based treatment in Lima, Peru. *Thorax* 2007;**62**:416–21) in the May issue the expansions of the abbreviations SM, CM, CS and PAS are streptomycin, capreomycin, cycloserine and para-aminosalicylic acid, respectively.