

## Active case-finding for tuberculosis in Zimbabwe

In Africa, tuberculosis (TB) is often the result of recently acquired disease resulting from casual contact, rather than the remotely acquired infection transmitted by close household contact that is seen in rich countries. Therefore, community case-finding should result in reduced prevalence.

Publishing in the *Lancet*, researchers in Zimbabwe compared two strategies for active case-finding: door-to-door surveys and use of a mobile van with a loud-speaker. In suburban Harare, 46 community clusters (41 419 households, 110 432 adults aged 16 years or older) were randomised to door-to-door (DTD) or mobile van (MV) groups.

Six rounds of active case-finding were carried out at 6-month intervals in 2006–2008. The prevalence of HIV infection was 21%. Before the intervention the TB smear-positivity rate was 2.8 per 1000 adults per year. In the MV group there were 255 smear-positives in 5466 participants and in the DTD group 137 in 4711 participants, a significant difference. Overall, the prevalence of culture-positive TB fell from 6.5 to 3.76 cases per 1000 adults.

Active case-finding could rapidly reduce the prevalence of TB. In this study, use of a mobile van was more effective than door-to-door visiting. *Lancet* commentators stress the importance of efforts to develop a rapid, accurate, and simple test for TB.

## Tiotropium in adult asthma

Many patients with asthma are incompletely controlled on treatment with an inhaled steroid. A long-acting beta-agonist such as salmeterol may then be added but the safety of this treatment has been called into question.

The alternatives include addition of a leukotriene modifier or increasing the dose of inhaled steroid. Anticholinergic drugs such as ipratropium have been used for acute management for many years. Tiotropium bromide is a long-acting (>24 hours) anticholinergic drug that is approved in the USA for the treatment of chronic obstructive pulmonary disease but not for asthma. A multicentre US study, published in the *New England Journal of Medicine* has shown that the results of adding tiotropium are similar to those of adding salmeterol.

The crossover trial included 210 adult patients inadequately controlled on inhaled steroid with randomisation to three 14-week periods of added inhaled tiotropium, or added inhaled salmeterol, or of double-dose inhaled steroid (beclomethasone, 160 µg twice daily). Mean morning peak expiratory flow (PEF) increased by 24.4 L/min with added tiotropium and by 18.0 L/min with added salmeterol, but decreased by 1.4 L/min with double-dose beclomethasone. Added tiotropium was also better than double-dose beclomethasone as measured by change

in evening PEF, proportion of asthma-control days, FEV<sub>1</sub> (forced expiratory volume in 1 second) before bronchodilation, or daily symptom score. Added tiotropium was noninferior to added salmeterol.

Added tiotropium was better than double-dose beclomethasone and similar to added salmeterol over a period of 14 weeks. Longer and larger studies are needed.

## High-flow oxygen increases mortality in COPD exacerbations

There is evidence that high-flow oxygen therapy is dangerous for people with exacerbations of chronic obstructive pulmonary disease (COPD). A study in Tasmania, Australia has confirmed the danger.

The study (published in the *BMJ*) included 405 people aged at least 35 years with acute breathlessness and a history or risk of COPD. Paramedics made the diagnosis on the basis of symptoms and history when the patient was transported to hospital. Randomisation of paramedics was to high-flow oxygen (8–10 L/min) or titrated oxygen (target arterial oxygen saturation 88–92%). Mortality before or during hospitalisation was 9% (high-flow) vs 4% (titrated). Compared with high-flow oxygen, titrated oxygen reduced the risk of death from respiratory failure by 58% overall and by 78% among patients with confirmed COPD. For patients with confirmed COPD before admission, treating 14 patients with high-flow oxygen would result in harm to one of these patients.

High-flow oxygen should not be used for patients with known or suspected COPD. *BMJ* editorialists point out that unlimited oxygen may also be harmful in other conditions such as myocardial infarction, stroke, resuscitation from cardiac arrest, and neonatal resuscitation.

## CPAP for hypertension associated with obstructive sleep apnoea

People with obstructive sleep apnoea (OSA) may develop hypertension. OSA may be treated with continuous positive airway pressure (CPAP) but whether this reduces the blood pressure is unknown.

A study in Spain, published in the *BMJ*, has shown a reduction in blood pressure that is statistically significant but may not be clinically relevant. The multicentre, placebo-controlled trial included 340 patients with OSA confirmed by polysomnography and hypertension. Their mean age was 52 years and mean body mass index (BMI) 32. Only 19% were women. Randomisation was to effective CPAP or sham (very low pressure) CPAP for 3 months. Mean 24-hour ambulatory blood pressure in the CPAP group was 1.5 mmHg less than in the control group at 3 months. Mean daytime blood pressure was 1.3 mmHg less and mean night-time blood pressure 2.1 mmHg less than in the control group.

CPAP was associated with a small but statistically significant reduction in blood pressure but the clinical significance is uncertain.