Potential risk factors for recurrence of pulmonary tuberculosis

Among UK residents of South Asian descent potential risk factors for pulmonary tuberculosis (PTB) and, possibly, also for its recurrence, include vitamin D deficiency (as proposed by Crofts et al.), the population-attributable fraction (PAF) for PTB attributable to diabetes mellitus, and end-stage chronic kidney disease (CKD). The PAF for PTB attributable to diabetes mellitus can be as high as 19.6% (95% CI 10.9% to 33.1%) and 14.2% (95% CI 7.1% to 26.5%) for UK Asian men and women, respectively, versus 6.9% (95% CI 3.1% to 12.4%) and 8.2% (95% CI 3.0% to 15.6%) for their white male and female counterparts, respectively. Furthermore, in the presence of diabetes mellitus, recognition and treatment of PTB can be complicated by the fact that its radiographic stigmata can simulate those of lower lobe community-acquired pneumonia, and by the fact that median time to culture conversion may be significantly (p=0.03) longer in subjects with diabetes than in their counterparts without diabetes. Relative to their white counterparts, UK Asians also have a 13.66-fold higher risk of end-stage diabetic nephropathy; end-stage CKD itself being associated with an acquired immunodeficiency state characterised by a 10- to 25-fold increase in risk of PTB. When vitamin D deficiency complicates CKD this might, arguably, further compound the risk of PTB and its recurrence.

Jonathan P Crofts, Ibrahim Abubakar
Tuberculosis Section, Health Protection Agency Centre for Infections, London, UK
Correspondence to Mr Jonathan Crofts, Health Protection Agency Centre for Infections, 61 Colindale Avenue, London NW9 5EQ, UK; jonathan.crofts@hpa.org.uk
Competing interests None.
Provenance and peer review Not commissioned; not externally peer reviewed.
Accepted 25 August 2010
Published Online First 21 June 2011
doi:10.1136/thx.2010.149823

REFERENCES

Mains-powered hypoxic gas generation: a cost-effective and safe method to evaluate patients at risk from hypoxia during air travel

For the evaluation of patients at risk of hypobaric hypoxia during air travel, the British Thoracic Society Recommendations describe the normobaric hypoxic challenge as a substitute for the use of hypobaric chambers, which are not widely available. In the normobaric hypoxic challenge, breathing 15% oxygen at sea level replicates the reduced PO2 in ambient air at 3000 ft (914 m), the maximum permissible cabin altitude during commercial flight. This method has been shown to produce results comparable with those obtained using hypobaric chambers and oxygen desaturation similar to that found in patients with chronic obstructive pulmonary disease (COPD) during flight. The methods described in the British Thoracic Society Recommendations include using a cylinder of 15% oxygen in nitrogen, delivered by either a breathing circuit or a body box. Alternatively, a cylinder of nitrogen may be used to drive a 40% Venturi mask resulting in a fractional inspired oxygen (FiO2) of 15%. As pure nitrogen is an asphyxiating gas, FiO2 can fall dangerously low if Venturi mask ports become blocked or the nitrogen concentration becomes too high in an enclosed space. Furthermore, these...
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Oscar Jolobe

Thorax 2011 66: 731 originally published online June 21, 2011
doi: 10.1136/thx.2010.145730

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