MIXED BAG

Pneumococcal disease and non-vaccine serotypes

The increasing availability of pneumococcal vaccine has generally decreased the burden of pneumococcal disease among at-risk populations, not the least of which are children with HIV in southern Africa. However, a recent article in the *Journal of the American Medical Association* raises some concerns about the regular use of the vaccine. There has always been a concern that routine childhood vaccine using heptavalent pneumococcal conjugate vaccine would lead to the emergence and expansion of replacement disease caused by serotypes that are not contained in the heptavalent conjugate vaccine.

This study among Alaskan native children suggests that this is a very real concern. Rosalyn Singleton and colleagues used Alaskan statewide, longitudinal, population-based laboratory surveillance of invasive *Streptococcus pneumoniae* infections from 1 January 1999 to 31 December 2006. They found that in the first 3 years after the introduction of the vaccine, overall invasive pneumococcal disease decreased by 67% among Alaskan native children younger than 2 years. However, between 2001 and 2003 and 2004 and 2006, there was an 82% increase in invasive disease among these children. And, since 2004, the invasive pneumococcal disease rate caused by non-vaccine serotypes increased by 140% compared with the pre-vaccine period. During the same period, there was a 96% decrease in heptavalent serotype disease, and no significant increase in non-vaccine disease among non-native Alaskan children younger than 2 years.

The authors conclude that Alaskan native children are experiencing replacement invasive pneumococcal disease with serotypes not covered by heptavalent pneumococcal conjugate vaccine. This shows how important it is to carry out ongoing surveillance and to develop expanded valency vaccines.

Singleton RJ, *et al*. *JAMA* 2007; 297: 1784-1792.

Class of antiretroviral and risk of myocardial infarction

The DAD study group have previously reported a demonstrated association between combination antiretroviral therapy and the risk of myocardial infarction. However, it was not clear whether this association differed according to the class of drug. The group conducted a study, published recently in the *New England Journal of Medicine*, that investigated the association of cumulative exposure to protease inhibitors and non-nucleoside reverse transcriptase inhibitors with the risk of myocardial infarction.

They looked at the data they had collected, starting in February 2005, from their prospective study of 23 437 patients infected with HIV. They recorded the incidence of myocardial infarction during the follow-up period and looked at the associations between myocardial infarction and exposure to protease inhibitors or non-nucleoside reverse transcriptase inhibitors.

They found that 345 patients had a myocardial infarction during the follow-up period. The incidence of myocardial infarction was increased in those patients who were exposed to protease inhibitors for more than 6 years. This effect was not seen in patients who were not exposed to protease inhibitors and was not associated with exposure to non-nucleoside reverse transcriptase inhibitors, although patients were not exposed to this class of drug for as long. They conclude that it is exposure to protease inhibitors that increases the risk of myocardial infarction and that this is only partly explained by the concomitant dyslipidaemia.

DAD study group. *NEJM* 2007; 356: 1723-1735.

Annual treatment for postmenopausal osteoporosis

With regular scare stories about the risks of hormone replacement therapy hitting the popular press and the concomitant scientific articles in the medical literature, I suspect that fewer postmenopausal women will be turning to hormone replacement therapy to deal with the often very distressing symptoms associated with menopause. This will inevitably lead to an increase in the burden of osteoporosis, so it is good to know that there are alternatives that may reduce this.

Dennis Black and colleagues, writing in the *New England Journal of Medicine*, assessed the effects of annual infusions of zolendronic acid on fracture risk over a 3-year period. A single infusion of zolendronic acid decreases bone turnover and improves bone density at 12 months in postmenopausal women with osteoporosis.

They looked at 3 889 women, with an average age of 73 years, who were randomly assigned to receive a single 15-minute infusion of 5 mg of zolendronic acid and 3 876 women who were assigned to receive placebo at baseline, at 12 months and at 24 months. The patients were followed up for 36 months. They found that treatment with zolendronic acid reduced the risk of morphometric vertebral fracture by 70% during the 3-year period compared with placebo and reduced the risk of hip fracture by 41%. Nonvertebral fracture, clinical fractures and clinical vertebral fracture were all reduced by 25%, 33% and 77% respectively. Zolendronic acid was also associated with a significant improvement in bone mineral density and bone metabolism markers. Adverse events, including changes in renal function, were similar in both groups. But, serious atrial fibrillation did occur more frequently in the zolendronic acid group.

The authors conclude that an annual infusion of zolendronic acid during the 3-year study period did significantly reduce

the risk of vertebral, hip and other fractures. Now all we need is an annual infusion of something that reduces hot flushes to a manageable level.

Black DM, *et al*. *NEJM* 2007; 356: 1809-1822.

Obesity from childhood to adulthood

It is generally accepted that a fat child has a high risk of becoming a fat adult. But is the relationship absolute? A recent Australian study suggests not. Alison Venn and colleagues followed a cohort of 8 498 Australian school children through to adulthood, starting the study in 1985. The children were aged between 7 and 15 years and participated in the 1985 Australian Schools Health and Fitness Survey. They then followed up 2 208 men and 2 363 women who completed a follow-up questionnaire when they were aged between 24 and 34 years in 2001 - 2005.

Height and weight were measured in 1985 and self-reported at follow-up. The authors checked the accuracy of self-reported data in 1 185 participants. Overweight and obesity were defined according to international standard definitions for body mass index (BMI): in adults, a BMI of 25 - 29.9 and more than 30 respectively.

They found that, among participants who had both baseline and follow-up data, the prevalence of overweight and obesity in childhood was 8.3% and 1.5% in boys and 9.7% and 1.4% in girls, respectively. At follow-up, the prevalence was 40.1% and 13.0% in men and 19.7% and 11.7% in women. The relative risk of becoming obese in adulthood was significantly higher for those who had been obese as children compared with those who were a healthy weight. The proportion of adult obesity attributed to childhood obesity was 6.4% in men and 12.6% in women. So, although obesity in childhood is a strong predictor of obesity later in life, most people who become obese as adults were actually a healthy weight as children.

Venn AJ, *et al*. *MJA* 2007; 186: 458-460.

Bridget Farham

BOOK REVIEW

The WHO Manual of Diagnostic Imaging.

Radiographic Anatomy and Interpretation of the Chest and Pulmonary System. WHO. Pp. v + 146. Illustrated. CHF40/US$36. WHO. 2006. ISBN 92 4 154677 8.

In even the most technically advanced radiology departments, it is estimated that 70 - 80% of clinically relevant questions can be answered by plain radiographs and ultrasound. This prompted the World Health Organization to produce a series of basic radiology texts for use by health care workers in developing economies. This book is thus one in a series.

Authored by the eminent Micheal Ellis and Christopher Flower, it is a short, lucid text on adult chest radiology, with over 400 high-quality images. It offers an approach to plain film interpretation and covers aspects of radiographic technique and anatomy, together with radiological signs and patterns. Later sections include radiological pathology of the lung, mediastinum, pleura, chest wall and heart as well as a short chapter on chest trauma. The book represents a rich seam of radiological 'pearls' that assist in chest interpretation. The experience of the authors is evident on every page.

As a text for developing countries, more attention could have been afforded the lateral chest radiograph – only 14 such images are included. In this regard the book reflects the trend in developed countries, where the lateral projection is not part of the routine chest evaluation. However, a sound knowledge of anatomy, signs and patterns on the lateral chest radiograph is important in developing countries with a high prevalence of pulmonary tuberculosis and human immuno-virus (HIV) infection. This book does not address this need. Sections on paediatrics and the chest radiographic features of HIV infection are not included, but would be worthy additions.

Not an exhaustive text, it requires some radiology background. It could thus be profitably used as a synopsis by radiology trainees, experienced radiographers wishing to enhance their interpretation skills, qualified radiologists seeking to 'brush-up', or clinicians routinely interpreting chest radiographs.

Richard Pitcher