Short cuts

What's new in the other general journals

Vaccinating children against pneumococcal disease protects older adults too

In 2000, the United States authorities licensed a 7 valent pneumococcal vaccine (PCV 7) for children younger than 5 years. The incidence of invasive pneumococcal disease in this age group fell quickly, but the benefits also extended to older US citizens. Active surveillance across eight distinct geographical areas shows that the incidence of invasive diseases, such as pneumonia, meningitis, and bacteraemia of unknown origin, has continued to fall among elderly US citizens, and has now reached the government target of 42 cases per 100 000 for the over 65s.

Researchers estimate that in 2002 and 2003, there were 12 500 fewer cases of invasive disease and 1100 fewer deaths among elderly US citizens compared with the two years before the vaccine was introduced. Adults aged between 75 and 84 years benefited most. In this age group the incidence of invasive pneumococcal disease in 2002-3 was 35% lower than the corresponding incidence in 1998-9.

The authors think it likely that the new children's vaccine is responsible for these trends. An analysis that stratified invasive disease by serotype showed that most of the overall decline among elderly people was accounted for by the serotypes in the childhood vaccine. Disease caused by other serotypes remained stable.

JAMA 2005;294:2043-51

Illegal trade in growth hormone must stop

Selling growth hormone as a prophylactic against ageing has grown into a multi-million dollar business in the United

States. The extent of the problem is hard to gauge with any certainty, but officials estimate that in 2004, between 25 000 and 30 000 older US citizens were treated with growth hormone to combat the physical effects of ageing. Others from within the profitable "anti-ageing" industry estimate that about 100 000 people a year get growth hormone without a prescription. It's widely available on the internet and by mail order.

Wherever it comes from, growth hormone is expensive. Pills and sprays cost \$200 to \$300 a month, injections—the only bioavailable form—cost considerably more.

Calling for an end to the trade, three US doctors remind all health professionals that prescribing, selling, or distributing growth hormone as an anti-ageing treatment is illegal, and punishable by a lengthy prison sentence or at best a hefty fine. Several doctors in the anti-ageing industry have already been prosecuted successfully, including two from Oregon who described (then sold) growth hormone to their clients as a "harmless panacea for the effects of ageing." Growth hormone is neither, write the doctors. Its modest effects on body composition (such as a 5% increase in lean body mass) don't last long and are generally accompanied by serious side effects including carpal tunnel syndrome, peripheral oedema, arthralgia, myalgia, and glucose intolerance.

JAMA 2005;294:2086-90

Helminth infection in pregnancy linked to lower risk of eczema in infants

During a trial of a deworming treatment for pregnant women in Uganda, researchers noticed an unexpectedly high incidence of eczema among the infants. Investigating further, they found that infants of women with a helminth infection during pregnancy were less likely to get eczema by the age of 15 months than the infants of women without a helminth infection (rate ratio 0.26, 95% CI 0.08 to 0.83). They also found an inverse association between incidence of eczema and the presence of helminth infection at delivery (4/46, 9% *v* 9/23, 39%, *P*=0.002). Only 14 of the 79 infants in the trial had eczema, so these findings are preliminary. But the authors think they are interesting enough to justify further studies to find out if curing women of hookworm in pregnancy could have unintended consequences for their infants.

JAMA 2005;294:2032-4

Organophosphorous insecticides are separate poisons with distinct clinical effects

All organophosphorous insecticides are human poisons, but some are more poisonous than others. In a cohort study from Sri Lanka, young adults who poisoned themselves with chlorpyrifos had a much better prognosis than those who used dimethoate or fenthion; they were less likely to need intubation, more likely to respond to treatment with pralidoxime, and less likely to die (35/439, 8.0% *v* 16/99, 16.2% with fenthion, and 61/264, 23.1% with dimethoate).

The three compounds also produced distinctive clinical patterns. Patients with fatal fenthion poisoning, for example, were often asymptomatic when they first presented to hospital. The cholinergic crisis came some 30 hours after poisoning, and death usually took five days. Patients who had taken a fatal dose of dimethoate, on the other hand, were usually in a state of collapse when they got to hospital. Most of these deaths took less than two days (35 of 60; 58%).

Self poisoning with organophosphorous insecticides is a serious public health problem worldwide. The authors think that managing these patients would be easier and more effective if doctors recognised the differences between the various insecticides and developed tailor made treatment protocols for each one.

Lancet 2005;366:1452-59

BCG vaccine may prevent tuberculosis infection, not just active disease

BCG is one of the world's oldest and most widely used vaccines, but we are still finding out how it works. The most recent study indicates that the BCG vaccine can help

prevent infection with *Mycobacterium tuberculosis*, rather than simply preventing clinical disease in people who are already infected.

Researchers studied a cohort of 979 Turkish children, using a new blood test to detect infection. All the children were living with at least one adult with active pulmonary tuberculosis. Children with a BCG scar were 24% less likely to test positive for infection than children without a BCG scar (306/770, 40% *v* 110/209, 53%; relative risk reduction 24%). Vaccinated children were also less likely to have active tuberculosis (3/770, 0.4% *v* 10/209, 5%; relative risk reduction 92%), although the numbers were small.

The new test, which measures the T cell response to specific *M tuberculosis* antigens, is unaffected by previous vaccination—unlike the 100 year old tuberculin skin test, which cannot distinguish reliably between past vaccination and recent infection.

A linked editorial (pp 1414-6) describes the study as ambitious, but ultimately unconvincing. The test is too new and the debate too old to be resolved by observation, it says.

Lancet 2005;366:1443-51

Lifesaving interventions bypass children in greatest need

Lifesaving interventions for children such as safe water, vitamin A, antenatal care, and immunisations are failing to reach those in greatest need. The world's poorest and sickest children are missing out, particularly those living in politically unstable countries such as Cambodia, Eritrea, and Haiti.

A study of the number of such interventions received by individual children in nine low income countries showed serious inequalities within all countries—some children had access to six or more, whereas others had no help at all. The chance of clean water, better health, and a longer life decreased with increasing poverty. In Haiti, for example, 32% of the poorest children received only one intervention or none at all. Only 1% of the least poor were so badly served.

These data came from national surveys of children aged less than 5 years and

included 3000-8000 children in each country. Response rates were over 85%. Unsurprisingly, the findings parallel the mortality statistics already published from similar surveys.

Lancet 2005;366:1460-66

New antiseptic central venous catheter discourages bacterial colonisation

Central venous catheters are a quick and easy way for bacteria to get inside the body. Various barriers have been tried with limited success. A new type of catheter is available, impregnated with chlorhexidine and silver sulfadiazine on the outside and with chlorhexidine on the inside. In a double blind controlled trial of 777 patients in intensive care, the new catheter was less likely to end up colonised with bacteria than a standard catheter (hazard ratio 0.45, 95% CI 0.25 to 0.78), but the disappointed authors were unable to show any impact on blood stream infections (0.42 (95% CI 0.01 to 2.34) infections/1000 catheter days for the antiseptic catheter *v* 1.24 (0.26 to 3.62) infections/1000 catheter days for the standard catheter).

Catheters coated on the outside with chlorhexidine and silver sulfadiazine have been tested in previous trials and found to work less well than catheters impregnated with antibiotics. The new improved catheter has three times more antiseptic on the outside as well as an antiseptic coating on the luminal surface, the extension lines, and hubs. Bigger trials, powered to test the new catheter's impact on blood stream infections, not just laboratory results, are now required.

Ann Intern Med 2005;143:570-80

Rich countries should train their own doctors

Between 23% and 28% of medical professionals practising in the United Kingdom, United States, Canada, and Australia were trained abroad. In the US and UK, most of these international medical graduates (60% and 75% respectively) come from developing countries that can ill afford to lose them, according to an analysis of routine national statistics.

Caribbean countries and those in sub-Saharan Africa lose the greatest proportion of their home grown doctors to this brain drain. Over 40% of students graduating in Jamaica eventually emigrate to the UK, US, Canada, or Australia. Over 30% of graduates from Haiti do the same. Ghana loses about 30% of its graduates, and South Africa about 20%. The Indian subcontinent is also a big donor, especially Sri Lanka, where more than a quarter of medical graduates emigrate to higher income countries.

Although the benefits to the recipient countries are obvious—without foreign doctors there would be a serious shortage of health professionals in all four—it's equally clear that a haemorrhage of talented ambitious graduates on this scale must damage the already impoverished health systems that paid for their training, writes the author. All four developed countries in this study need yet more doctors. They should concentrate on training them at home.

N Engl J Med 2005 353:1810-18

Rapid weight gain in childhood predicts adult heart disease

We already know there's a link between weight at birth and risk of coronary heart disease much later in life. Details of the period between are sketchier. Taking advantage of an unusually complete data set from Finland, researchers report that adults with coronary heart disease tend to be small at birth and thin at two years. Then they get fatter quite quickly until by the age of 11 they have a body mass index about average for their age. In this cohort of 8760 Finns, the same kind of growth pattern was associated with insulin resistance, a well known risk factor for heart disease.

These results confirm that it's not particularly healthy to be born small, then put on a lot of weight during childhood, says a linked editorial (pp 1848-50). But what should happen between birth and two years? This study suggests it's unhealthy to be thin at two years. Unfortunately other observational studies have recently indicated the opposite.

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