Lucina

It is now estimated that more than half of American adults are overweight or obese and across the country the prevalence of obesity (body mass index > 30) has increased from 12% in 1981 to 18% in 1998 (Journal of the American Medical Association 1999;282:1519–22 and 1523–9). In San Jose, California (Ibid: 1561–7) 9 year olds in one of two similar schools were encouraged and taught to reduce their television viewing. The intervention group reduced their viewing from over 14 hours a week to around 9 hours, whereas viewing hours barely changed in the control school pupils. After 7 months there were significant favourable changes in indices of overweight in the intervention group compared with the controls. The intervention group did not eat significantly less fat, noticeably take up more physical activities, or become fitter. The United States is not alone in all this; children in the UK are getting fatter (BMJ 1999;319:1039).

PncA is a gene in the tubercle bacillus that codes for pyrazinamidase or nicotinamidase. The gene in Mycobacterium bovis differs by only a single nucleotide from that in M tuberculosis. Doctors in Taiwan (Journal of Bone and Joint Surgery 1999;81-A:1305–11) were able to use polymerase chain reaction DNA sequencing of the gene on a biopsy specimen to show that the osteomyelitis of the left humerus in an 8 month old girl was caused by BCG (M bovis) and not by M tuberculosis. That they were able to do this rapidly meant that they were able to change to more appropriate treatment (M bovis is invariably resistant to pyrazinamide) two months before cultures showed the infection to be due to BCG.

Antenatal betamethasone may prevent cerebral palsy. A retrospective study at three centres in Paris (New England Journal of Medicine 1999;341:1190–6) included 883 infants live born at 24–31 weeks' gestation. Betamethasone had been given before delivery to 361 mothers, dexamethasone to 165, and no steroid to 357. The incidence of cystic periventricular leucomalacia was 4.4% (betamethasone), 11.0% (dexamethasone), and 8.4% (no steroid). After statistical adjustment for obstetric risk factors, antenatal betamethasone halved the risk of cystic periventricular leucomalacia compared with no steroid. The difference in the incidence of cystic periventricular leucomalacia between the dexamethasone and no steroid groups was not significant.

A study in France (Lancet 1999;354:1084–9) has introduced a cloud on the horizon for perinatal HIV prophylaxis. Multicentre follow up of over 1750 mother–child pairs treated with zidovudine with or without other nucleoside analogues led to the detection of eight children with mitochondrial dysfunction. None of the eight was infected with HIV but five developed symptoms (seizures (4), quadriaparesis (2), cognitive impairment (2), myopathy, and brain stem signs) between the ages of 4 and 14 months, and two of these died aged 11 and 13 months. Three were essentially asymptomatic but two of these had persistent lactic acidosis and one had persistently high serum concentrations of alanine aminotransferase and lipase. Abnormalities of respiratory chain enzymes were demonstrated in all eight children, mostly in skeletal muscle mitochondria, but no mitochondrial DNA abnormalities were shown. These workers believe that present prophylaxis programmes should continue despite their findings.

A study in Auckland, New Zealand (Journal of Pediatrics 1999;135:290–5) suggests that in young children who may have ingested over 250 mg/kg of paracetamol elixir it is not necessary to wait until 4 hours after ingestion to measure a serum concentration. A 2 hour concentration of 225 mg/litre or more is suggested as the level requiring action.

Four young Italian men aged 17–25 who had been treated with recombinant human growth hormone for non-growth hormone deficient short stature had small testes and hypergonadotropic hypogonadism with altered testicular texture on ultrasound scan and impaired spermatogenesis (Journal of Pediatrics 1999;135:367–70). It is not certain that growth hormone caused these changes but more information needs to be sought, possibly from existing large data banks (Ibid [editorial] :278–9).

Plasma concentrations of procalcitonin are high in bacterial infections and usually low in viral infections. A study in Paris (Pediatric Infectious Disease Journal 1999;18:875–81) has shown that in distinguishing between bacterial and viral infection, procalcitonin has better sensitivity, specificity, and positive predictive value than C-reactive protein, interleukin 6, or interferon a. A procalcitonin concentration of > 1.0 µg/litre had a sensitivity of 83% and a specificity of 93% for bacterial infection, but the sensitivity was 96% when only children with septicaemia or meningitis were considered.

Two studies in the USA, one in Tennessee (New England Journal of Medicine 2000;342:225–31), and one in Washington State and northern California (Ibid: 232–9) have shown considerable extra morbidity in young children during winters when influenza is prevalent. Both groups suggest that routine influenza vaccination of infants should be considered, but it is uncertain how much of the documented morbidity is actually caused by the influenza virus, and there are scientific and logistic problems to be faced before universal influenza vaccination of infants can be recommended (Ibid [editorial]:275–6).

Small for dates (SFD) babies seem, on the whole, to become reasonably contented young adults. A follow up of the British Birth Cohort, born in one week in April 1970 (Journal of the American Medical Association 2000;283:625–32), showed that, whilst SFD babies (defined as below 5th centile for birthweight at term) were less likely to have professional or managerial jobs at age 26, they were just as likely to be employed, married, and satisfied with their lot as were those who had been normal birthweight babies.

During the El Niño of 1997–8, hospital admissions of children with diarrhoea in Lima, Peru, doubled (Lancet 2000; 355:442–50). There were 6225 extra admissions and the financial cost was estimated at US$277 000. The effect seemed to be mediated mainly through an increase in ambient temperature. The mean increase in temperature in Lima was 5°C. In the years before El Niño, there was an 8% increase in daily children’s admissions for diarrhoea for every 1°C rise in temperature.

In Vellore, India, 48 patients aged 14 to 58 with cholera were randomly assigned to standard oral rehydration solution (ORS) alone, ORS plus rice flour, or ORS plus amylase resistant maize starch (New England Journal of Medicine 2000;342:508–13). There were significant reductions in faecal weight and duration of diarrhoea in those given amylase resistant starch. It is thought that colonic fluid absorption is increased by short chain fatty acids produced during fermentation of the starch by colonic bacteria.