

## Clippings

### ❑ Vaccine for otitis media

Acute otitis media is one of the most commonly diagnosed childhood infections. This study assessed the efficacy of a novel vaccine that contained polysaccharides from 11 different *Streptococcus pneumoniae* serotypes each conjugated to *Hemophilus influenzae*-derived protein D in prevention of acute otitis media. 4968 infants were randomly assigned to receive either pneumococcal protein D conjugate or hepatitis A vaccine at the ages of 3, 4, 5 and 12 - 15 months and were followed by until the end of second year of life. The primary endpoint was protective efficacy against the first episode of acute otitis media caused by vaccine pneumococcal serotype. Results showed that the vaccine reduced frequency of infection from vaccine related cross reactive pneumococcal serotypes by 65%. Efficacy was also shown against episodes of acute otitis media caused by non-typable *H. influenzae* (Lancet 2006 Mar4; 367(9512):740-748).

*Comments:* These results confirm that using the *H. Influenzae* derived protein D as a carrier protein for pneumococcal polysaccharides not only allowed protection against pneumococcal otitis but also against acute otitis media due to non - typable *H. influenzae*. Can this approach afford protection against lower respiratory tract infections?

### ❑ Promise of new rotavirus vaccines

The safety and efficacy of an attenuated G1P[8] human rotavirus (HRV) vaccine were tested in a randomized, double blind, phase 3 trial. A total of 63,225 healthy infants from 11 Latin American Countries and Finland received either two oral doses of HRV vaccine or placebo at approximately two months and

four months of age. The efficacy of the vaccine against severe rotavirus gastroenteritis and against rotavirus associated hospitalization was 85% and reached 100% against more severe rotavirus gastroenteritis. During the 31 day window after each dose, six vaccine recipients and seven placebo recipients had definite intussusception (difference in risk, - 0.32 per 10,000 infants; 95% confidence interval, -2.91 to 2.18; P = 0.78).

❑ In another study the safety and efficacy of Pentavalent human bovine (WC3) reassortant rotavirus vaccine was studied on healthy 6 to 12 week olds who were randomly assigned to receive three oral doses of live pentavalent humans - bovine (WC3 strain) reassortant rotavirus vaccine containing human serotypes G1, G2, G3, G4 and [P8] or placebo at 4 to 10 week intervals in a blinded fashion. This vaccine was efficacious in preventing rotavirus gastroenteritis, decreasing severe disease and health care contacts. The risk of intussusception was similar in vaccine and placebo recipients (N Engl J Med 2006; 354: 11-22, 23-33).

*Comments:* In both the trials the first doses of both of these new vaccines were administered to infants who were under three months of age, the absence of an increased risk of intussusception might reflect the safer age at which these vaccines were tested. Hundreds of thousands of children will need to be immunized before a clean bill of health can be given to these vaccines. After a long period of waiting has time for a rotavirus vaccine finally arrived?

### ❑ Prevention of malaria

In certain regions of Africa malaria

transmission is highly seasonal. During a short period of high malaria transmission mortality and morbidity are high in children under 5 years of age. This study assessed the efficacy of seasonal intermittent preventive treatment - a full dose of antimalarial treatment given at defined times without previous testing for malaria infection. One thousand one hundred thirtysix children aged 2-59 months received either one dose of artesunate plus one dose of sulfadoxine - pyrimethamine or two placetos on three occasions during the malaria transmission season. The primary outcome was a first or single episode of clinical malaria detected through active or passive case detection. During 13 weeks of follow up, the intervention led to an 86% reduction in the occurrence of clinical episodes of malaria (Lancet 2006 Feb 25; 367: 659-667).

*Comments:* Intermittent prevention treatment could be highly effective for prevention of malaria in children under 5 years of age living in areas of seasonal malaria infection. Can this prevention strategy be used in parts of India with a high incidence of malaria?

#### ❑ **Misdiagnosis of epilepsy**

The aim of this study was to determine the proportion of children admitted with difficult to treat paroxysmal events to a tertiary epilepsy center who did not have epilepsy. This was an observational retrospective study involving 223 children, admitted in 1997. On admission 86% were on antiepileptic drug treatment. In total, 39% were found not to have epilepsy. In 30% of children referred without any doubts about the epilepsy diagnosis, the diagnosis was disproved. Of the 159 children admitted for the first time, 75 (47%) were discharged with a diagnosis of non-epileptic seizures. Of the 125 admitted for the first time with no doubts about the diagnosis of epilepsy 35% did not have epilepsy. Staring episodes

were the most frequently encountered non-epileptic paroxysmal event. Psychogenic non-epileptic seizures were found in 12 children (Arch Dis Child 2006; 91: 219-221).

*Comments:* The present study supports the view that misdiagnosis of epilepsy is common. The treating physician should be cautious in diagnosis of epilepsy especially of staring episodes.

#### ❑ **Entecavir for chronic hepatitis b**

Entecavir is a potent and selective guanosine analogue with significant activity against hepatitis B virus (HBV).

Two separate trials were conducted comparing the efficacy of Entecavir and Lamivudine for HBe Ag positive and HBe Ag negative Chronic Hepatitis B. In a phase 3, double blind trial 715 patients with hepatitis B e antigen received either 0.5 mg of entecavir or 100 mg Lamivudine once daily for a minimum of 52 weeks. Similarly, in another study 648 patients with HBe Ag negative chronic hepatitis B received either 0.5 mg of entecavir or 100 mg of lamivudine once daily for a minimum of 52 weeks. In both the trials the primary end point was histologic improvement (a decrease by at least two points in the Knodell necro inflammatory score without worsening of fibrosis). (N Engl J Med 2006; 354: 1001-1010, 1011-1120).

*Comments:* In both the studies the rates of histologic, virologic and biochemical improvement was significantly higher with entecavir than with lamivudine. With its excellent potency and low rate of resistance, entecavir seems to be an outstanding agent for treating chronic hepatitis B. Has the cure for Hepatitis B arrived finally?

#### ❑ **Risk factors for meningococcal disease**

The aim of this study was to examine

biological and social risk factors for meningococcal disease in adolescents. 15-19 year olds with meningococcal disease admitted at various hospitals in England were assessed for potential risk factors by a confidential interview. Significant independent risk factors for meningococcal disease were history of preceding illness, intimate kissing with multiple partners, being a university student and preterm birth. Religious observance and meningococcal vaccination were associated with protection (BMJ 2006 Feb 25; 332: 445-450).

*Comments:* Activities and events increasing risk for meningococcal disease in adolescence are different from in childhood. Students are at higher risk. Can altering personal behaviour reduce risk of meningococcal disease?

#### ❑ Constipation in children

Constipation in children usually is functional and the result of stool retention. However, family physicians must be alert for red flags that may indicate the presence of an uncommon but serious organic cause of constipation such as Hirschsprung's disease, pseudo-obstruction, spinal cord abnormality, hypothyroidism, diabetes insipidus, cystic fibrosis, gluten enteropathy, congenital ano-rectal malformation. Treatment of functional constipation involves disimpaction, using oral or rectal medication. Polyethylene glycol is effective and well tolerated but a number of alternatives are available. After disimpactions, maintenance medications with mineral oil,

lactulose, milk of magnesia, polyethylene glycol powder and sorbitol is needed to prevent a relapse (Am Fam physician 2006; 73: 4469-4477).

*Comments:* Adding fiber to the diet may improve constipation. Despite treatment only 50 to 70% of children with functional constipation demonstrate long term improvement.

#### ❑ Infantile obesity and adult obesity

Rapid early postnatal weight gain predicts increased subsequent obesity and related disease risks. However the exact timing of adverse rapid postnatal weight gain is unclear. The objective was to examine the associations between rapid weight gain in infancy and in early childhood in relation to body composition at age 17 years. Results showed that increasing weight gain during infancy and early childhood were both independently associated with larger body mass index, fat mass, fat free mass and waist circumference at 17 years. Rapid weight gain in infancy also predicted taller height at 17 years (Am J Clin Nutr 2006; 83: 324-330).

*Comments:* To conclude rapid weight gain in both infancy and early childhood is a risk factor for adult adiposity and obesity. Should infants be put on dietary restrictions?

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