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Correspondence to Dr M F Noy, Infection Control Department, Selly Oak Hospital, Raddlebarn Road, Selly Oak Hospital, Birmingham B29 6JD, England.

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Treatment of campylobacter gastroenteritis

S ASHKENAZI, Y DANZIGER, Y VARSANO, J PEILAN, AND M MIMOUNI

Department of Pediatrics B, Beilinson Medical Center, Petah Tiqva, Sackler School of Medicine, Tel Aviv University, Israel

SUMMARY Twin boys suffered from recurrent diarrhoea due to *Campylobacter jejuni* after entering a day nursery. Stool sampling of all 17 children at the nursery revealed *C. jejuni* in 12. Simultaneous treatment with antibiotics of all children with positive cultures successfully eradicated the infection.

Campylobacter gastroenteritis has been recognised in recent years as a major cause of diarrhoeal diseases in children.[1 2] It accounts for considerable morbidity and may result in chronic diarrhoea and failure to gain weight.[2] This organism has also been responsible for outbreaks in day care centres,[3] where reinfection is common and eradication difficult.

We present our experience in the management of an outbreak of campylobacter gastroenteritis in a nursery and suggest a practical approach to eradicate the infection.

Case report

Eleven month old twin boys were referred to us eight weeks after entering a day care centre with a history of recurrent diarrhoea. The diarrhoea had begun two weeks after they had started at the centre. It diminished when the mother removed them for periods of several days, only to return on re-admission. The diarrhoea consisted of between four and nine yellowish-green, soft, bulky stools each day for periods of up to two weeks. Their body weight dropped from the 75th to the 25th centile. *Campylobacter jejuni* was cultured from one infant; no other enteric pathogen was isolated.

Erythromycin estolate 50 mg/kg/day was administered to both children for seven days, with complete resolution of symptoms. Repeated stool cultures for *C. jejuni* after the treatment yielded negative results. Two weeks later, after re-entering the centre, diarrhoea occurred again in both children and *C. jejuni* was again isolated. Clinical and laboratory recovery was again observed after a second course of treatment.

A further episode of diarrhoea occurred 10 days after stopping treatment, and *C. jejuni* was isolated from the stools of both boys. On this occasion, the father, who was a physician, collected stool samples from the other children at the nursery. *C. jejuni* was isolated in the stools of 12 of the 17 children. All these children had suffered from at least one period of diarrhoea during the past two months. By the time of stool sampling, however, eight of the children were already asymptomatic.

All children with positive stool culture were treated simultaneously with a course of erythromycin. A week later stool cultures from these children yielded negative results. From then until the end of the school year (eight months) no further outbreaks of diarrhoea occurred in the centre.

Discussion

Outbreaks of gastroenteritis among children in day care centres are well known.[4] Close personal contact and poor hygiene in young children, especially in those who are not yet toilet trained, enable the spread of enteric pathogens. The problem of reinfection by the same agent ('ping pong mechanism') is common among these children and can ruin efforts to eradicate the infection.

Recently, attention has been called to the role of *C. jejuni* in infectious diarrhoea in children, including outbreaks in day care centres.[1 3] Relapses of this infection are documented in our patients, as reported before.[5 6] The high rate of relapse usually

results from reinfection. This is caused by the prolonged excretion of the organism among untreated children, lasting up to seven weeks.[5] On the other hand, stool cultures of all treated patients yielded negative results within 48 hours.[5] Our patients indeed showed that simultaneous treatment is effective in preventing reinfection as it caused concomitant eradication of the infection in all the children.

It is concluded that in a nursery with multiple cases of campylobacter enteritis stool cultures should be taken from all children, including those who are asymptomatic at that time, because it is necessary to treat *simultaneously* all children whose cultures yield positive results. This approach is an effective method for eradicating the infection.

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Correspondence to Dr S Ashkenazi, Department of Pediatrics, Beilinson Medical Center, Petah Tiqva 49100, Israel.

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Commentary

H P LAMBERT

Department of Communicable Diseases, St George's Hospital Medical School, London

It is often forgotten that antimicrobial drugs can sometimes be used to control the spread of gut infection. This 'epidemiological' use has a chequered history. Most often non-absorbable antibiotics, such as neomycin, have been employed to blanket an outbreak, especially of *Escherichia coli* gastroenteritis, and with variable results. Sometimes the outbreak was apparently controlled and at other times the attempt failed completely; certainly, antibiotic prophylaxis should not be used in this way unless combined with a rigorous attempt to tighten up normal hygienic methods of cross infection control.

This description of the control of campylobacter gastroenteritis in a day care centre makes a useful point. Features of this infection that perhaps make for a favourable outcome are:

(1) Erythromycin certainly seems to render stool cultures negative very quickly, usually within 48 hours of starting the drug (their references 1 and 6).

(2) The duration of carriage may be quite long without treatment, although 90% of patients do become negative spontaneously within two months.

(3) Campylobacter diarrhoea, although usually short lived, can be prolonged or recurrent, and it is patients with diarrhoea who pose most risk to their contacts. Although eight of the 12 contacts with positive stools were asymptomatic at the time of sampling, all of them had had recent diarrhoea.

Co-trimoxazole red cell aplasia in leukaemia

C E M UNTER AND G D ABBOTT

Department of Paediatrics, Christchurch Clinical School of Medicine, Christchurch Hospital, New Zealand.

SUMMARY A 4 year old boy with acute lymphoblastic leukaemia developed a pure red cell aplasia 13 months after entering remission and while on maintenance chemotherapy. Co-trimoxazole was also being administered for prophylaxis against *Pneumocystis carinii* infection. When co-trimoxazole was stopped the red cell aplasia resolved.

Co-trimoxazole (sulphamethoxazole and trimethoprim) provides effective prophylaxis against *Pneumocystis carinii* infection[1] and is therefore commonly used during treatment for childhood acute lymphoblastic leukaemia. Haematological toxicity, particularly neutropenia and thrombocytopenia, has been described with co-trimoxazole,[2 3] but selective aplasia of the bone marrow erythroid series is extremely rare and has not previously been reported in acute lymphoblastic leukaemia. We report a case of pure red cell aplasia that occurred in a child on maintenance treatment for acute lym-