

103

Cryptosporidiosis in Bangladesh

Despite the large number of enteropathogens identified in recent years the cause of many episodes of diarrhoea remain undetermined. The protozoan *Cryptosporidium* was first described as a pathogen causing diarrhoea in animals in 1907, and in man in 1976.¹ We were able to identify the cause for diarrhoea in only two thirds of patients coming to our clinic.² Cryptosporidiosis is an emerging zoonotic disease, and we therefore began screening for cryptosporidial oocysts in stools of patients visiting our clinic as part of a surveillance programme.²

Methods and results

At the Dacca clinic we screened 4% of patients with diarrhoea for cryptosporidial oocysts, using Giemsa stain on faecal smears.³ All specimens were examined for other common enteropathogens. Thirty eight of 578 smears collected from 1 January to 31 May 1984 were judged to be positive, based on the finding of characteristic oocysts—that is, "holes" in the stained background. These unstained areas sometimes have a faint blue centre with fine red or purple corpuscles.³ Replicate smears made from refrigerated faeces were stained by a modified acid fast technique⁴; 25 were found to be positive (4.3% of 578 samples).

Eighteen of the 25 patients with cryptosporidiosis were children aged under 2. The disease was found in both sexes and in 21 patients who were moderately to well nourished. *Cryptosporidium* was the only pathogen in 20 of the 25 patients. Twenty four of them had watery diarrhoea, and 18 were either mildly dehydrated or not dehydrated at all three days after the start of diarrhoea. Six of the 18 children under 2 were moderately dehydrated. Twenty two patients suffered from vomiting and three from mild fever. There was a sudden increase in cases of cryptosporidiosis during the hot, humid weather in March.

In most stool samples we found few segmented leukocytes, no other inflammatory cells, and no red blood cells. All dehydrated patients were successfully rehydrated orally with a rice based solution, and 18 were discharged within 16 hours of admission. A cough was present in six of the patients under 2.

Comment

By studying a small sample of patients we have established that *Cryptosporidium* exists in Bangladesh. As the sole pathogen it seems to cause a mild, transient, easily managed form of diarrhoea, particularly among young children; only four (16%) of the 25 patients studied were malnourished. The presence of cough in some of the children raises the possibility of respiratory infection, as previously reported in man and birds. The oocyst is small enough to be carried by dust. Much of the inhaled dust (possibly in the form of dried poultry litter) is undoubtedly cleared from the tracheobronchial mucosa by the cilia. It is then swallowed and enters the gastrointestinal tract. Many families in Bangladesh keep their poultry and cattle within their premises. *Cryptosporidium* was recently detected in 14% of calves with diarrhoea and 1% of calves without diarrhoea at a dairy farm in Bangladesh, as well as in 8.5% of their handlers with diarrhoea. *Cryptosporidium* was not, however, found in healthy people.⁵

We are now carrying out more extensive studies.

International Centre for Diarrhoeal Disease Research, GPO Box 128, Dacca 2, Bangladesh

NIGAR S SHAHID, MB, MSC, assistant scientist
 A S M H RAHMAN, DVM, MSC, veterinary officer
 B C ANDERSON, DVM, PHD, consultant
 L J MATA, DSC, consultant
 S C SANYAL, MD, PHD, consultant

Correspondence to: Dr Nigar S Shahid.

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