

Cryptosporidium outbreaks: identification, diagnosis, and management

In 2016 an outbreak of *Cryptosporidium* potentially linked to swimming pools occurred in the West Midlands region in England. This highlighted the importance of prompt identification of *Cryptosporidium* by primary care and notification to Public Health England (PHE) to assist with patient management and outbreak control. This article outlines the epidemiology and processes to be followed should suspected *Cryptosporidium* cases present to primary care.

EPIDEMIOLOGY

Infection with the protozoan parasite *Cryptosporidium* results from ingestion of oocysts from faecally-contaminated water or food, direct person-to-person contact, or zoonotic spread. The incubation period (the time between exposure to *Cryptosporidium* and development of symptoms) varies but is on average between 5–7 days.^{1,2} Infection usually results in an acute illness lasting up to 3 weeks in otherwise healthy people, although asymptomatic infections are common and can be a source of infection for others.² The symptoms are characterised by an abrupt onset of profuse watery diarrhoea with mucus (rarely blood) and abdominal cramping that may be associated with nausea, anorexia, and possibly fever. Although the infection is self-limiting in most patients, in the very young, older people, and in immunosuppressed individuals it can be a debilitating illness.

Cryptosporidium occurs worldwide and is the fourth most common cause of gastrointestinal infection in the UK.² As gastrointestinal symptoms can result from a range of conditions, only some of which will be infectious, microbiological confirmation is required to confirm the diagnosis. Data available from PHE for 2000 to 2012 show that nationally the number of confirmed cases from samples ranges from 3000–6000 per year, with peaks in the spring and autumn.³

RISK OF OUTBREAKS

Ingestion of contaminated water has been responsible for large outbreaks of *Cryptosporidium*. The largest worldwide outbreak reported in Milwaukee in the US in 1993 resulted in an estimate of >400 000 people affected.⁴ In England, outbreaks have mainly been reported associated with public and private water supplies and swimming pools,⁵ with the Bouchier report providing recommendations on reducing such risks.⁶ Control of these outbreaks is challenging due to a) multiple transmission routes, b) the highly infectious nature of the parasite, and c) resistance of the oocysts to chlorine-based disinfectants at levels typically used in most swimming pools.⁷ Timely reporting of suspected cases by primary care can help public health colleagues identify whether they are connected by a source, such as swimming pools, in order to control a potential outbreak (as seen in the recent outbreak in the West Midlands).

MANAGEMENT OF PATIENTS

Figure 1 highlights the typical roles played by GPs, PHE, and associated organisations in managing a patient with suspected cryptosporidiosis.

Role of primary care

Clinical suspicion. As a busy GP with a limited time for consultations, history taking may help to identify patients at a higher risk of cryptosporidiosis presenting with gastrointestinal symptoms. Although infection occurs in all ages, it is most commonly seen in children <5 years old, with a decreasing infection rate with increasing age.³ Groups at particular risk of infection include contacts of confirmed cases, individuals with direct or indirect contact with a variety of farm and domestic animals, those who have travelled to less developed countries or been in contact with such travellers, who have recently visited a swimming pool, or have had contact with raw water.

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