

Address for correspondence: Alessandra Ciervo, Department of Infectious, Parasitic and Immune-mediated Diseases, Istituto Superiore di Sanità, Viale Regina Elena, 299-00161 Rome, Italy; email: alessandra.ciervo@iss.it

## Imported Human Fascioliasis, United Kingdom

**To the Editor:** We initiated enhanced surveillance for human fascioliasis after a reported increase in live-

stock cases in the United Kingdom. From January 1, 2008, through January 31, 2009, 11 human cases were confirmed by the reference laboratory for England and Wales, compared with 6 cases during the preceding 10 years. The Scottish reference laboratory detected no human cases during the study period.

Fascioliasis was defined as a positive *Fasciola* immunofluorescent antibody test with a screening titer of 1:32 and either compatible clinical or radiologic features consistent with the disease. We obtained clinical and radiologic information from the referring physician. Clinical features of both acute and chronic infection include fever, upper abdominal pain,

malaise, eosinophilia, and impaired liver function; therefore, distinguishing between the 2 phases can be difficult. Fifty percent of chronic infection is subclinical (1,2). Compatible radiologic features are capsular enhancement with contrast, hypodense nodular areas, and low-density serpiginous lesions (2). Our analysis comprised 11 cases (Table). Two patients were white British, both of whom had recently traveled to sub-Saharan Africa. Cases from the preceding 10 years diagnosed in our laboratory were all in persons with histories of travel to fascioliasis-endemic areas. Therefore, these cases do not provide firm evidence of indigenous zoonotic transmission within England and Wales.

Table. Characteristics of human fascioliasis case-patients during enhanced surveillance, United Kingdom, January 1, 2008–January 31, 2009\*

Case no.	Age, y/sex	Country of origin	Years since migration	Other travel	Risk factor	Clinical features	Eosinophil count, $\times 10^9/L$	Abnormal liver function	Hepatic imaging	IFAT†
1	45/F	Yemen	7	Yemen regularly	<i>Khat</i> use	Abdominal pain	8.4	Yes	Mixed-density liver lesion (CT)	1:128
2	44/M	Somalia	16	Ethiopia 2007	<i>Khat</i> use	Fever, abdominal pain	3.4	Yes	Serpiginous lesion (MRI)	1:64
3	34/F	Ethiopia	3	S. Africa regularly	<i>Khat</i> use	Fever, abdominal pain	11.4	No	Heterogeneous lesion (USS)	1:128
4	44/F	Somalia	7	Somalia 2004, Netherlands	<i>Khat</i> use	Abdominal pain	8.3	No	Heterogeneous lesion (USS)	1:128
5	54/F	Somalia	21 (to Netherlands), 4 (to UK)	None	<i>Khat</i> use	Anorexia	8.4	No	Low-density lesion (CT)	1:32
6	43/M	Somalia	28 (to India), 21 (to UK)	None	<i>Khat</i> use	Fever	1.0	Yes	Heterogeneous lesion (USS)	1:128
7	28/F	UK	–	Uganda 2007–2008	–	Abdominal pain, hepatomegaly	1.84	Yes	Hepatomegaly with large mixed cystic and solid lesion (USS)	1:512
8	67/M	UK	–	Kenya 2008, prior world travel	–	Malaise, abdominal pain	0.04	Yes	Multiple gallstones (MRCP)	1:256
9	38/M	Ethiopia	10	Ethiopia 2006	–	Abdominal pain, fever	18.7	Yes	Normal (USS, MRCP)	1:128
10	28/M	Ethiopia	Unknown	Unknown	–	Fever, gram-negative sepsis; new HIV diagnosis	<0.04	Yes	Lesion in hepatic vein	1:64
11	47/F	Somalia	16 (to Yemen), 6 (to UK)	Unknown	<i>Khat</i> use	Abdominal pain, fever	16.8	Yes	Low-density lesion (CT)	1:256

\*IFAT, immunofluorescent antibody test; CT, computed tomography; MRI, magnetic resonance imaging; USS, ultrasound scan, MRCP, magnetic resonance cholangiopancreatography.

†Titer of IFAT (screening titer 32).

Nine patients originated from Somalia, Ethiopia, or Yemen. Few cases have previously been reported from this area (3), although Ethiopian migrants have been shown to have an egg positivity of 0.4% on routine screening (4). Patients 5 and 6 had not returned to Africa for >20 years, suggesting that they acquired their infection in Europe. Therefore, a risk factor may exist that is specific to this ethnic group within the United Kingdom.

Six cases were diagnosed at 1 hospital. All 6 patients reported current or past use of locally bought *khat*, a leaf chewed for its stimulant properties. It is imported fresh to the United Kingdom from Africa and is an ideal environment for the survival of *Fasciola cercariae*. It is used most commonly by migrants from the Horn of Africa and Yemen and has been reported in association with acute fascioliasis in the United Kingdom (5). Use of imported *khat* may explain the apparently higher incidence of fascioliasis in this ethnic group residing in the United Kingdom.

Despite the described parallel rise in human and veterinary fascioliasis, none of these cases provide clear evidence that recent human cases resulted from zoonotic transmission within the United Kingdom. Most cases occurred in migrants from the Horn of Africa and Yemen, some of whom may have acquired *Fasciola* spp. in their country of origin; other cases appear likely to have been acquired in the United Kingdom, possibly due to use of imported *khat*. Physicians need a heightened awareness of fascioliasis when investigating impaired liver function or abnormal abdominal imaging in migrants or travelers from high-risk areas.

**Meera A. Chand,  
Joanna S. Herman,  
David G. Partridge,  
Kirsten Hewitt,  
and Peter L. Chiodini**

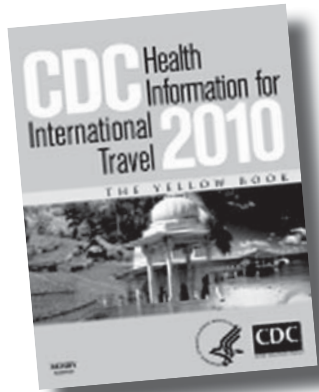
Author affiliations: Hospital for Tropical Diseases, London, UK (M.A. Chand, J.S. Herman, P.L. Chiodini); Royal Hallamshire Hospital, Sheffield, UK (D.G. Partridge); Health Protection Agency Centre for Infections, London (K. Hewitt); and London School of Hygiene and Tropical Medicine, London (P.L. Chiodini)

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Address for correspondence: Meera A. Chand, Hospital for Tropical Diseases, Mortimer Market, Capper Street, London WC1E 6JB, UK; email: meera.chand@nhs.net



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## Gastroenteritis Outbreaks in 2 Tourist Resorts, Dominican Republic

**To the Editor:** Noroviruses are an important cause of acute gastroenteritis, and outbreaks caused by these viruses have emerged as a major challenge to the healthcare, leisure, and tourism industries. The primary reason is their highly efficient transmission among persons in semiclosed populations such as those in healthcare facilities, hotels, and cruise ships. During an outbreak, primary cases result from exposure to a fecally contaminated vehicle (e.g., food or water), whereas secondary and tertiary cases among contacts of primary case-patients result from person-to-person transmission (1). Airborne and fomite transmission also play a role in the virus spread during outbreaks (2). Transmission through recreational water has also been described (3).

We investigated 2 outbreaks of norovirus gastroenteritis in tourist resorts in the Dominican Republic in January 2005. A total of 402 persons and 371 persons at 2 resorts, 1 located in Punta Cana (attack rate 6.8%) and another in Puerto Plata (attack rate 6.2%), respectively, reported symptoms of diarrhea, vomiting, headache, and fatigue. A total of 35 stools samples, 28 from Punta Cana and 7 from Puerto Plata, were negative for bacterial or parasitic pathogens. However, norovirus was confirmed by the IDEIA norovirus immunoassay (DakoCytomation, Ely, UK) in 11 samples from Punta Cana and 7 samples from Puerto Plata.

Active measures to reduce norovirus transmission were adopted by the 2 resorts, including an increase in cleaning frequency and increase in concentration of chlorine used for surface disinfection of public areas (1,000 mg/L), kitchenware (200 mg/L for 15 min), and fruits and vegetables (150 mg/L for 15 min). Personnel involved