Imported Human Fascioliasis, United Kingdom

To the Editor: We initiated enhanced surveillance for human fascioliasis after a reported increase in livestock 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 | Abnormal liver function | Eosinophil count, x10^9/L | Hepatic imaging | IFAT† |
|----------|------------|-------------------|-----------------------|--------------|-------------|-------------------|-------------------------|-------------------------|----------------|-------|
| 1        | 45/F       | Yemen             | 7                     | Yemen regularly | Khat use | Abdominal pain   | Yes                     | 8.4                     | Mixed-density liver lesion (CT) | 1:128 |
| 2        | 44/M       | Somalia           | 16                    | Ethiopia 2007 | Khat use | Fever, abdominal pain | Yes                     | 3.4                     | Serpiginous lesion (MRI) | 1:64 |
| 3        | 34/F       | Ethiopia          | 3                     | S, Africa regularly | Khat use | Fever, abdominal pain | No                      | 11.4                    | Heterogeneous lesion (USS) | 1:128 |
| 4        | 44/F       | Somalia           | 7                     | Somalia 2004, Netherlands | Khat use | Abdominal pain   | No                      | 8.3                     | Heterogeneous lesion (USS) | 1:128 |
| 5        | 54/F       | Somalia           | 21 (to Netherlands), 4 (to UK) | None | Khat use | Anorexia         | No                      | 8.4                     | Low-density lesion (CT) | 1:32 |
| 6        | 43/M       | Somalia           | 28 (to India), 21 (to UK) | None | Khat use | Fever           | Yes                     | 1.0                     | Heterogeneous lesion (USS) | 1:128 |
| 7        | 28/F       | UK                | –                     | Uganda 2007–2008 | – | Abdominal pain, hepatomegaly | Yes                     | 1.84                    | Hepatomegaly with large mixed cystic and solid lesion (USS) | 1:512 |
| 8        | 67/M       | UK                | –                     | Kenya 2008, prior world travel | – | Malaise, abdominal pain | Yes | 0.04 | Multiple gallstones (MRCP) | 1:256 |
| 9        | 38/M       | Ethiopia          | 10                    | Ethiopia 2006 | – | Abdominal pain, fever | Yes | 18.7 | Normal (USS, MRCP) | 1:128 |
| 10       | 28/M       | Ethiopia          | Unknown               | – | – | Fever, gram-negative sepsis; new HIV diagnosis | Yes | <0.04 | Lesion in hepatic vein | 1:64 |
| 11       | 47/F       | Somalia           | 16 (to Yemen), 6 (to UK) | Unknown | Khat use | Abdominal pain, fever | Yes | 16.8 | 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 cerceariae. 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)

DOI: 10.3201/eid1511.090511

References
1. Marcos LA, Terashima A, Gotuzzo E. Update on hepatobiliary flukes: fascioliasis, opisthorchiasis and clonorchiasis. Curr Opin Infect Dis. 2008;21:523–30.
2. Marcos LA, Tagle M, Terashima A, Bussoleu A, Ramirez C, Carrasco C, et al. Natural history, clinicoepidemiologic correlates and response to triclabendazole in acute massive fascioliasis. Am J Trop Med Hyg. 2008;78:222–7.
3. Control of foodborne trematode infections. Report of a WHO study group. World Health Organ Tech Rep Ser. 1995;849:1–157.
4. Nahmias J, Greenberg Z, Djerrasi L, Gila di L. Mass treatment of intestinal parasites among Ethiopian immigrants. Isr J Med Sci. 1991;27:278–83.
5. Doherty JF, Price N, Moody AH, Wright SG, Glynn MJ. Fascioliasis due to imported khat. Lancet. 1995;345:462. DOI: 10.1016/S0140-6736(95)90450-6

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