Imported Dengue Hemorrhagic Fever, Europe

To the Editor: Dengue infection is an endemic and epidemic urban disease (1), transmitted by infected *Aedes* mosquitoes. Its incidence is increasing in tropical and subtropical areas (1,2) because of 1) introduction of the virus into areas where it was not previously endemic, and 2) the spread of the 4 serotypes and the vector in disease-endemic areas (2,3). Infec-

Because viral hemorrhagic fever was suspected, the patient was referred to a specialized hospital in Zagreb. Chest radiograph and abdominal ultrasound scan showed bilateral pleural and peri-

The patient was treated with fluid and plasma replacement, antipyretics, and ceftriaxone plus doxycycline to counteract bacterial and other possible tick-borne infections. She was placed under strict isolation measures while awaiting final diagnosis. The patient was transferred to Barcelona (Spain) University Hospital on August 14; on the basis of her clinical symptoms, hemorrhagic fever was suspected. She exhibited headache, arthralgia, and myalgia. The fever subsided 9 days after the onset of symptoms. Clinical examination showed a maculopapular rash involving the face, thorax, limbs, and palms and soles, with diffuse petechiae and bruising (Figure). Barcelona University Hospital laboratory values were Hb 105 g/L, PCV 32%, MCV 86, prothrombin time 12.4 s, AST 347 U/L, ALT 322 U/L, gamma-glutamyl trans-

Serologic tests on day 3 and day 11 after the onset of symptoms were not reactive for Crimea-Congo hemorrhagic fever (CCHF), chikungunya, yellow fever, Hantaan, Puumala, and Dobrava viruses; HIV 1 and 2; parvo-

Immunoglobulin (Ig) M tests on day 3 for all 4 dengue virus serotypes were negative. Positive IgG were 1:320 (type 1) and 1:100 (type 3 and 4). A second sample on day 11 showed all 4 IgG serotypes >1:10,000, and IgM >1:10,000 for serotypes 1, 2, and 4. Results of real-time PCR for CCHF were negative but reverse transcription–PCR multiplex for dengue virus was positive for dengue type 1 virus. The patient recovered and was moni-

Since 1977, 15 cases of imported DHF have been reported in Europe (6,7). The 4 World Health Organization (WHO) criteria for DHF diagnosis are 1) fever related to the current process, 2) hemorrhagic manifesta-
tions, 3) low levels of platelets (<100 × 10^9/L) and 4) increased capillary permeability (5). Our patient fulfilled all 4 criteria. Few cases of reported DHF fulfill criterion 3 due to the short duration of severe thrombocytopenia in mild clinical forms (8). Increased vascular permeability was shown in our patient by the peritoneal and bilateral pleural effusions.

The probability of diagnosing dengue fever in Europe increases with travel to dengue-endemic areas, in view of the increase of DHF numbers (2006–2007) and several outbreaks around the world, even during the non-dengue season (9). Frequent travelers are more at risk for DHF. In a recent European publication, 17% of patients with imported dengue fever exhibited a secondary immune response, thus having a higher risk of developing DHF in the future (6). Serologic tests confirm dengue infection only if a 4-fold increase in titers in titers in consecutive serum samples occurs, as in our case.

In dengue-endemic areas, despite the higher disease incidence, many cases still fail to meet WHO criteria (9). A comprehensive revision of dengue and DHF series (8) shows differences in applying WHO criteria for diagnosis, and sometimes the correlation was poor between criteria-fulfilling cases and severity of disease. Some reports (6,8) suggest that WHO criteria should be reviewed and perhaps new parameters should be established to define severe dengue disease.

Although our patient was not infected in Europe, lessons from the recently described chikungunya outbreak in Italy indicate the possibility of new arbovirus outbreaks in previously non–disease-endemic areas due to the increasingly established presence of vectors like Ae. albopictus (10).

Dengue virus infection should therefore be considered in the differential diagnosis of fever in returning travelers. DHF diagnosis, although unusual, could become more frequent in the future.

Acknowledgments

We thank Manuel Corachan for his critical reading of the manuscript and Carolyne Daher for assistance with manuscript preparation.

Maria Jesús Pinazo Delgado,*†‡
José Muñoz Gutierrez,**†‡
Liljana Betica Radic,§
Tomislav Maretic,¶
Sime Zekan,¶
Tatjana Avšič-Županc,#
Ethin Sequeira Aymar,**
and Joaquim Gascon
Brustenga,**†‡

*Barcelona International Health Research Center, Barcelona, Spain; †August Pi Suer Biomedical Research Institute, Barcelona; ‡University of Barcelona Hospital Clinic, Barcelona; §General Hospital, Dubrovnik, Croatia; ¶University Hospital for Infectious Diseases Dr. Fran Mihaljevic, Zagreb, Croatia; #Institute of Microbiology and Immunology, Ljubljana, Slovenia; and **Centro de Atención Primaria del Sector del Eixample (CAPSE), Barcelona

DOI: 10.3201/eid1408.080068

References

1. World Health Organization, Scientific Working Group on Dengue. Report on dengue. 2006 [cited 2008 Jan 15]. Available from http://www.who.int/tdr/publications/publications/swg_dengue_2.htm
2. Bulugahapitiya U, Siyambalapitiya S, Senewiratne S, Fernando D. Dengue fever in travellers: a challenge for European physicians. Eur J Intern Med. 2007;18:185–92. DOI: 10.1016/j.ejim.2006.12.002
3. Gubler DJ. The global emergence/resurgence of arboviral disease as public health problems. Arch Med Res. 2002;33:330–42. DOI: 10.1016/S0188-4409(02)00378-8
4. Cardosa MJ. Dengue haemorrhagic fever: questions of pathogenesis. Curr Opin Infect Dis. 2000;13:471–5. DOI: 10.1097/00001432-200010000-00007
5. World Health Organization. Dengue haemorrhagic fever: diagnosis, treatment, prevention and control. 2nd edition. Geneva: The Organization; 1997.
6. Wichmann O, Gascon J, Schunk M, Puente S, Sikamalkhi H, Gjorup I, et al. Severe dengue virus infection in travelers: risk factors and laboratory indicators. J Infect Dis. 2007;195:1089–96. DOI: 10.1086/512680
7. Jelinek T, Mühlberger N, Harms G, Corachan M, Grobasch MP, Knobloch J, et al. Epidemiology and clinical features of imported dengue fever in Europe: sentinel surveillance data from TropNetEurop. Clin Infect Dis. 2002;35:1047–52. DOI: 10.1086/342906
8. Bandyopadhyay S, Lum L, Kroeger A. Classifying dengue: a review of the difficulties in using the WHO case classification for dengue haemorrhagic fever. Trop Med Int Health. 2006;11:1238–55. DOI: 10.1111/j.1365-3156.2006.01678.x
9. Senior K. Dengue fever: what hope for control? Lancet Infect Dis. 2007;7:636. DOI: 10.1016/S1473-3099(07)70221-9
10. Watson R. Chikungunya fever is transmitted locally in Europe for first time. BMJ. 2007;335:532–3. DOI: 10.1136/bmj.39332.708738.DB

Address for correspondence: Maria Jesús Pinazo Delgado, Villarroel St 170, 08036 Barcelona, Spain; email: mpinazo@clinic.ub.es

Mycobacterium setense Infection in Humans

To the Editor: A 66-year-old man had a bone graft for treatment of an oroantral fistula in March 2007 in Marseille, France. The surgery consisted of a bilateral maxillary sinus filling with a parietal osseous graft to close the fistula (position 24–25). Painful edema of the hemiface and mild fever developed in the patient in July 2007. Computed tomography showed areas of hypodensity in the osseous graft in the left maxillary sinus consistent with osteolysis. Microscopic examination of a bone biopsy specimen after gram staining did not reveal any organisms but this specimen did grow Enterobacter cloacae and colonies of a gram-positive bacillus after a 2-day inoculation on 5% blood agar incubated at 37°C in an atmosphere of 5% CO₂. Tentative identification of this catalase-positive, oxidase-negative gram-positive rod (isolate 74023791) by an API Coryne

1330 Emerging Infectious Diseases • www.cdc.gov/eid • Vol. 14, No. 8, August 2008