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Paper Poster Session III

Emerging viruses

Five-year surveillance of Dengue virus imported cases in northern Italy

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BACKGROUND: Dengue is a mosquito-borne virus endemic in the tropics and subtropics, has grown dramatically in recent years and it has been recognized as a potential hazard for travellers.

OBJECTIVE: The aim of this study was to evaluate the Dengue virus epidemiology in a series of Italian travellers returning to Italy with febrile syndrome.

PATIENTS AND METHODS: The study was conducted during the period 2010-2014, analysing the blood samples of travellers returning to Italy from Dengue endemic areas and presenting with febrile syndrome. All the samples were tested to evaluate the presence of virus specific IgM and IgG (NOVALISATM, Novatec Immunodiagnostic GmbH, Dietzenboch, Germany). Antibodies typing was made with the neutralization test using the 4 serotypes. In addition, Dengue RNA was amplified with two methods: a specific Real-time RT-PCR targeting a conserved region of all serotypes 1-4 and with a Pan-Flavivirus Nested RT-PCR (specific for: Japanese encephalitis virus, Murray Valley virus, Saint Louis encephalitis virus, Tick-borne encephalitis virus, West Nile virus, Dengue virus serotypes 1-4 and Yellow fever virus). All the positive samples were confirmed by sequencing of the amplicons. Finally Dengue NS1 antigen detection was performed using PlateliaTM Dengue NS1 Ag (Bio-Rad Laboratories, Hercules, CA).

RESULTS: During the study period, the samples of 254 patients were analyzed and 61 patients tested positive for Dengue virus infection either by serology and or by molecular detection. The majority of the patients contracted the disease in the Caribbean area and South East Asia. All the four Dengue virus serotypes were detected. Nine cases were detected in 2010, 13 in 2011, 9 in 2012, 19 in 2013 and 11 in 2014.

CONCLUSION: Pre-travel advice should be given to all travellers about Dengue endemic areas. Dengue fever must be included in the differential diagnosis of patients returning with a febrile syndrome from tropical areas. Imported Dengue virus infection bears the risk of autochthonous outbreaks during the vector season in Italy. Thus, containment of viremic patients is advised. Neutralizing antibodies are mandatory to type the strain infecting patients in whom the virus was not detected and in particular for the diagnosis of reinfection with a different strains.