

R412

Publication Only

Public Health: Emerging infectious diseases

Arbovirus infections in a tertiary-care hospital in northern Italy

M.C. Medici¹, F. Pinardi¹, F. Ferraglia¹, F. De Conto¹, M.C. Arcangeletti¹, S. Preti¹, F. Tummolo¹, C. Chezzi¹, **A. Calderaro¹**

¹Microbiology and Virology Unit Department of Clinical and Experimental Medicine University of Parma Viale Antonio Gramsci 14 43126 Parma Italy, University of Parma, Parma, Italy

Arbovirus infections in a tertiary-care hospital in Northern Italy

Medici MC, Pinardi F, Ferraglia F, De Conto F, Arcangeletti MC, Preti S, Tummolo F, Chezzi C, and Calderaro A.

Microbiology and Virology Unit, Department of Clinical and Experimental Medicine, University of Parma, Viale Antonio Gramsci 14, 43126, Parma, Italy

Objectives

This note describes the epidemiology of Toscana (TOSV), Dengue (DENV), Chikungunya (CHIKV), and West Nile (WNV) virus infections in the area of Parma, Northern Italy, in order to determine the extent of the circulation of these viruses.

Methods

We collected uniform epidemiologic and clinical data and laboratory results of patients attending the University Hospital of Parma and examined for TOSV, DENV, CHIKV, and/or WNV infections by serology, virus isolation, and/or real-time RT-PCR. A total of 334 cases were screened for TOSV in 2001-2012. Thirty six, 30 and 52 cases were screened for DENV, CHIKV and WNV, respectively, in 2007-2012.

Results

During the 12-year period, 28 patients (10.5%) were positive for TOSV, detected via ELISA for IgG and IgM in 13 cases, based on viral RNA detection in cerebrospinal fluid (CSF) in 4 cases, and either IgM in sera or viral RNA in CSF in 11 cases. The majority of patients (22%) with TOSV infection were in the age group 50-70 years. The highest prevalences of TOSV infection were in 2004 (25%), 2009 (21%) and 2006 (14%). During 2007-2012, DENV infection was diagnosed in 8 (22.2%) cases: based on IgG and IgM detection in sera in 3 cases and either viral RNA or IgG and IgM detection in sera in 5 cases. Patient age ranged from 33 to 64 years. All cases were imported from South/Central America and Southeast Asia and presented with fever, headache, myalgia, asthenia, retro-orbital pain and/or vomiting. DENV infection occurred mostly in March and July-October. CHIKV infection was diagnosed in 4 (13.3%) patients: 2 by IgG and IgM detection and 2 by either IgG and IgM or viral RNA detection in sera. The age range of the patients were 18-65 years and all presented with arthralgia, myalgia, headache, and/or fever. All the CHIKV cases were imported from Asia and India during June, July and August 2009-2012. Otherwise, no WNV infection was diagnosed.

Conclusion

The analysis of the epidemiology of different arbovirus infections diagnosed in Parma emphasizes that the TOSV acute neurological illness represents an emerging disease since several years. Globalization, travel to endemic areas and migration are important risk factors for sporadic infections by DENV, CHIKV, and WNV and for outbreaks representing a public health concern. A detailed and continuous epidemiological surveillance is required for monitoring the incursion and spread of these viruses. This approach will help in undertaking and implementing effective control and management strategies.