SEROPREVALENCE OF WEST NILE VIRUS-SPECIFIC ANTIBODIES IN A POPULATION LIVING IN CENTRAL AND SOUTH FRIULI VENEZIA GIULIA REGION

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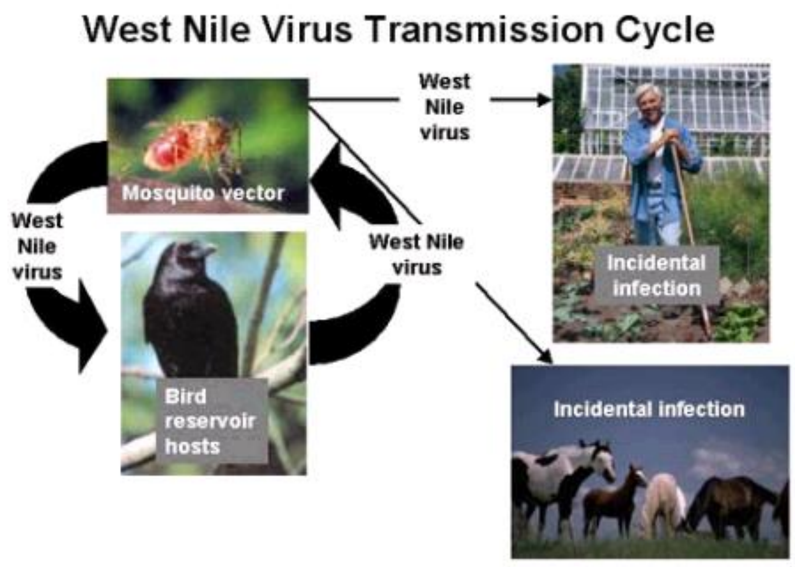
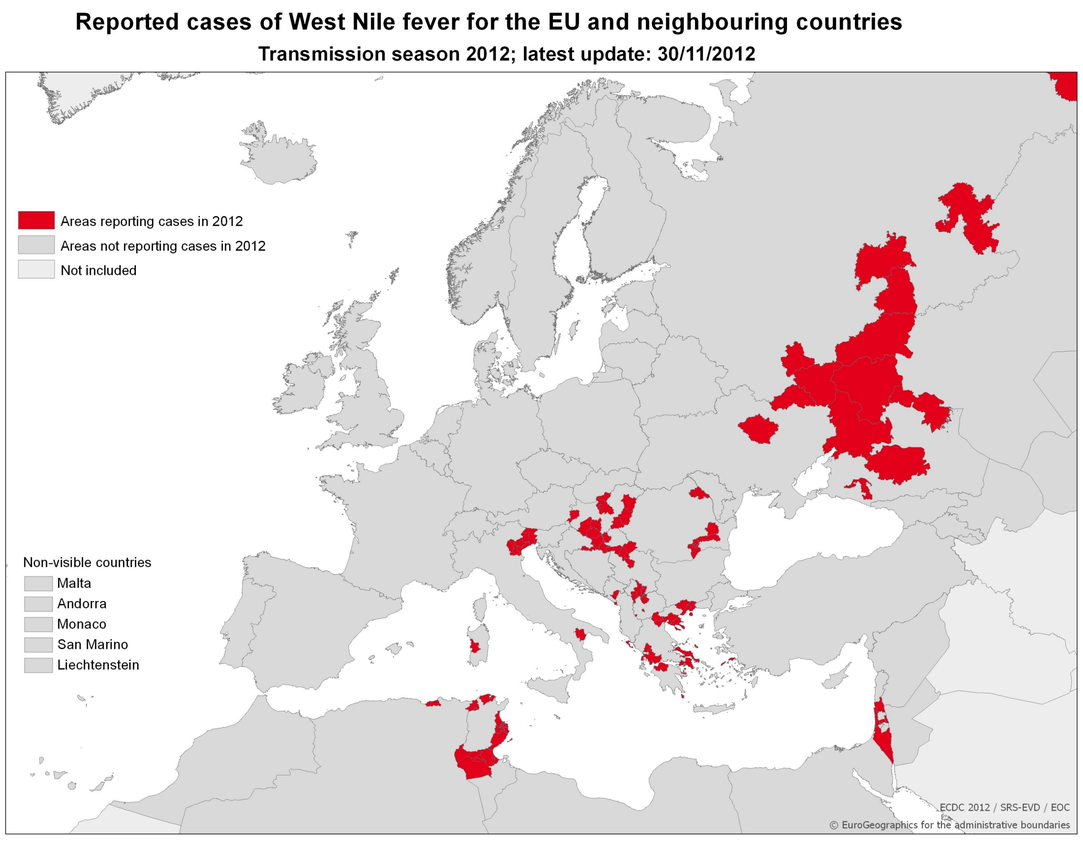
Introduction

West Nile virus (WNV) is a virus of the family Flaviviridae, genus Flavivirus. WNV is maintained in nature in a transmission cycle that involves primarily birds and mosquitoes (Culex species). The main route of human infection is through the bite of an infected mosquito; alternative modes of transmission involves transplanted organs, blood transfusions and transplacental (mother-to-child).

Since the first report of WNV infection in Friuli Venezia Giulia (FVG) region in September 2011, several human cases of WNV disease (WNVD) were identified, indicating an endemic circulation of this virus. As a consequence of these findings, in 2012, a regional surveillance for WNVD was started in FVG. In this report we describe a seroprevalence study of Anti-West Nile virus-specific antibodies in a population living in central and south FVG near WNV endemic area.





Materials and methods

A total of 500 sera were tested. Samples were obtained from three hospitals, "Sant'Antonio", San Daniele del Friuli, ASS4, "Palmanova", ASS5 and "Latisana", ASS5. The presence of IgM and IgG antibodies against WNV was investigated using Anti-West Nile virus ELISA (IgG) and Anti-West Nile virus ELISA (IgM) (Euroimmun, Lübeck, Germany). Each positive sample was tested also by Anti-West Nile virus IFA (IgG) and Anti-West Nile virus IFA (IgM) (Euroimmun, Lübeck, Germany). All the ELISA and IFA positive samples were further confirmed by micro neutralization assay.

Results

Among the 500 samples, only 8 gave an ELISA IgG positive result. No IgM positivity was detected. When tested by IFA IgG only 2 sera were positive, with IgG titers respectively 1/1280 and 1/640. Next, micro neutralization assay confirmed the presence of WNV neutralizing antibodies. Both patients were interviewed for a retrospective clinical evaluation: they reported no febrile syndrome or symptoms like WNVD and no holidays in endemic area up to six/twelve months prior to blood sample.

Conclusions

The results obtained confirmed the eastward progression of the WNV endemic area.

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