RAPID RISK ASSESSMENT

Epidemiological situation of West Nile virus infection in the European Union

Update, 13 July 2012

Main conclusions and recommendations

On 7 and 10 July, the Hellenic Centre for Disease Control and Prevention (KEELPNO) reported the first two human cases of West Nile virus (WNV) infection in Greece this year. When looking at the epidemiology of WNV infection in Greece since 2010, one can observe a progressive geographical expansion of WNV transmission throughout the country. For this reason, these newly confirmed cases in Athens do not come unexpected. However, the fact that the transmission occurred early in the season and that, for the first time, the cases were reported from neighbourhoods in Athens, indicate the need for a focussed public health response. Such response mechanisms are currently implemented in Greece, including enhanced surveillance for human cases, entomological surveillance, and vector control.

Links to previous rapid risk assessments

- Review of epidemiological situation on West Nile virus infection in the European Union (EU), Update 19, September 2011 http://ecdc.europa.eu/en/publications/Publications/110920_TER_Rapid%20risk%20assessment_WNF.pdf
- West Nile fever maps – historical data: http://ecdc.europa.eu/en/healthtopics/west_nile_fever/West-Nile-fever-maps/Pages/historical-data.aspx
- West Nile fever maps – situation update: http://www.ecdc.europa.eu/en/healthtopics/west_nile_fever/West-Nile-fever-maps/Pages/index.aspx

Updated event background information

On 7 July 2012, the Hellenic Centre for Disease Control and Prevention (KEELPNO) reported the first human case of West Nile virus (WNV) infection in Greece this year [1]. The case involved a 74-year-old Greek female residing in the municipality of Palaio Faliro, Attiki region (southern suburbs of Athens). Laboratory investigation (6 July) revealed serum IgM and IgG antibodies for WNV, which classifies her as a probable case according to the current EU case definition for WNV infection [2]. According to the case investigation, the patient reported onset of symptoms consistent with meningitis and encephalitis on 29 June, without travel history to an area with previously known WNV circulation during the last 14 days. However, other areas in Attiki were affected last year [3].

On 10 July 2012, KEELPNO reported a second case of WNV infection in Athens, this time in the south-eastern suburb of Argyropoli. The case involved a 55-year-old Greek male with no travel history or exposure to areas with previously known WNV circulation [4]. Laboratory investigation revealed CSF and serum IgM antibodies for WNV, which classifies him as a confirmed case according to the current EU case definition for WNV infection [2].

According to the case investigation, the patient reported onset of symptoms consistent with meningitis (fever, headache) on 28 June.

This is the third year that WNV infections are reported from Greece. In 2010, autochthonous human cases of West Nile virus infection were reported in several EU countries: Romania, Hungary, Italy, Spain, and Greece. In Greece, a large outbreak affected the northern part of the country, central Macedonia, with 262 human cases and 35 deaths reported. At the same time, outbreaks of WNV were also reported from Turkey and the Russian Federation. In 2011, 130 probable and confirmed autochthonous cases of WNV infection were reported in the EU, including 69 confirmed and 31 probable cases from Greece, and 207 in neighbouring countries. In 2012, the first WNV infections in the European region were reported in horses in Sardinia (Italy) on 3 July, and in humans in southern Russia on 9 July.

Figure: The two red dots indicate the first two detected cases of WNV infection in Greece in 2012

ECDC threat assessment for the EU

In the EU, the critical period for WNV transmission is between July and October each year. The geographical distribution of reported cases in Greece has increased over time: in 2010 the epicentre of the WNV outbreak was located in central Macedonia; by 2011 it had moved to more southern prefectures, including the prefectures of Attiki, Viotia, and Evoia. Thus, the West Nile virus infection cases reported in Greece are not unexpected and indicate that conditions, including those in urban environments, are favourable for the local transmission of WNV. If local transmission becomes sufficiently established in Athens, more cases are to be expected in Athens in addition to elsewhere in Greece for the remainder of the season.

The first cases were reported early in the season (onset of disease 28 June), which could be a result of the enhanced level of surveillance in Greece following the strengthening of awareness among healthcare workers for the clinical presentation of WNV infection and strengthened laboratory diagnostic capacity. However, the fact that the transmission occurred early in the season and that, for the first time, the cases were reported from neighbourhoods in Athens, indicate the need for a focussed public health response. Such response mechanisms are currently implemented in Greece, including enhanced surveillance in Athens for cases of neuro-invasive illness (which may be suggestive of WNV infection), entomological surveys to better understand mosquito breeding site distribution, and vector control measures to reduce mosquito densities. Additionally, passive surveillance in domestic birds and equine populations to monitor the spread of viral circulation may be of value.

Taking into account the EU WNV preparedness plan and the EU blood directive, the main measures of prevention of transmission through blood products should be geographical donor deferral or the implementation of systematic NAT screening of blood donors or visitors from affected areas [5]. ECDC provides a weekly updated overview of affected areas in order to support this activity [6].

It is important that health practitioners in other Member States be reminded to include WNV infection in the differential diagnosis of persons who have just returned from Greece and present with fever or meningitis/encephalitis during the WNV season.

Personal protection from mosquito bites until the end of the mosquito season is advisable to any person resident or visiting the areas where animal and/or human WNV infection cases have been reported. People can use insect repellents when they are outdoors and wear long sleeves and trousers. In areas with high mosquito populations, good screens on windows and doors can prevent mosquitoes from entering.

Conclusion

WNV transmission is established in several EU Member States and neighbouring countries. This is the third consecutive year that WNV infections are reported from Greece.

The Ministry of Health, KEELPNO and ECDC point out that more cases of WNV infection should be expected. ECDC will continue to closely monitor the epidemiological situation of WNV infection throughout the EU and will update this risk assessment when necessary.

Contact

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References

1. Hellenic CDC Press release on first case of WNV in Greece in 2012. Athens: Hellenic Centre for Disease Prevention and Control (KEELPNO). [Cited 2012 11 July]; available from: http://www.keelpno.gr/Portals/0/Αρχεία/Γραφείο Τύπου/2012/07-07-2012 ΚΡΟΥΣΜΑ ΙΟΥ Δ. ΝΕΙΛΟΥ.pdf

2. Commission Decision of 28/IV/2008, amending Decision 2002/253/EC laying down case definitions for reporting communicable diseases to the Community network under Decision No 2119/98/EC of the European Parliament and of the Council. [Cited 2012 11 July]; available from: http://ecdc.europa.eu/en/healthtopics/west_nile_fever/basic_facts/Pages/EU-case-definition.aspx

3. Review of epidemiological situation on West Nile Virus infection in the European Union, Update 19 September 2011. European Centre for Disease Prevention and Control (ECDC). [Cited 2012 11 July]; available from: http://ecdc.europa.eu/en/publications/Publications/110920_TER_Rapid%20risk%20assessment_WNF.pdf

4. Hellenic CDC Press release on second case of WNV in Greece in 2012: Hellenic Centre for Disease Prevention and Control (KEELPNO). [Cited 2012 11 July]; available from: http://www.keelpno.gr/Portals/0/Αρχεία/Γραφείο Τύπου/2012/10-07-2012 ΚΡΟΥΣΜΑ WNV.pdf

5. Commission Directive 2004/33/EC of 22 March 2004 implementing Directive 2002/98/EC of the European Parliament and of the Council as regards certain technical requirements for blood and blood components. [Cited 2012 11 July]; available from: http://www.transfusionguidelines.org.uk/docs/pdfs/directive_2004_33-ec.pdf or http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0033:EN:HTML

6. West Nile virus infection maps – situation update. European Centre for Disease Prevention and Control (ECDC). [Cited 2012 11 July]; available from: http://www.ecdc.europa.eu/en/healthtopics/west_nile_fever/West-Nile-fever-maps/Pages/index.aspx