

## Autochthonous Crimean-Congo haemorrhagic fever in Spain: So much to learn



### Fiebre hemorrágica de Crimea-Congo autóctona de España: tanto que aprender

Dear Editor,

In August 2016, autochthonous Crimean-Congo Haemorrhagic fever (CCHF) in Spain was reported for the first time in a man who got infected in Ávila through a tick bite. A nurse was secondarily infected while caring for the index case.<sup>1</sup> The occurrence of these autochthonous cases is somewhat surprising since Palomar et al.<sup>2</sup> recently reported the absence of CCHF virus (CCHFV) in ticks captured between 2013 and 2015 in 18 Spanish provinces. Authors analysed more than 2000 ticks (mainly *Hyalomma marginatum*) obtained from vegetation, cattle and sheep with negative results for CCHFV, suggesting low risk of human cases.

After the diagnosis of past year autochthonous cases, a new sampling of more than 9000 ticks confirmed the presence of CCHFV in ticks from Extremadura, Castilla-La Mancha, Castilla y León and Madrid.<sup>1</sup> Infected ticks belonged mainly to the *H. lusitanicum* species and were captured exclusively from wild animals. None of the ticks captured from domestic animals were positive for CCHFV. We believe that methodological differences could explain the different results reported by Palomar et al.<sup>2</sup> and CCAES<sup>1</sup>: the different types of animals sampled (domestic vs wild) and the different species of ticks analysed (*H. marginatum* vs *H. lusitanicum*).

To adequately respond to the challenge of an emergent infection such as CCHF in Spain it is critical to have a complete knowledge of the disease. Although much progress has been made, there is still much to learn about CCHF.

All CCHFV identified in Spain belong to African 3 lineage.<sup>1</sup> While there is considerable knowledge about the clinical aspects of the European 5 lineage, which is autochthonous in Turkey, very little has been published about the clinical characteristics of the disease caused by the African 3 lineage that is autochthonous mainly in South Africa, Mauritania and Sudan. It is possible that the natural history of CCHF caused by the African 3 lineage and the European 5 lineages could be different.

Another insufficiently known aspect is if survivors of CCHF can have long-term sequelae. Although no frequent sequelae have been reported after just 30 days of follow-up in Turkey,<sup>3</sup> a number of studies have suggested the possibility of long-term auditory impairment and posttraumatic stress.<sup>4,5</sup>

There are scarce data about the presence and infectivity of the CCHFV in different body fluids and environmental surfaces. CCHFV RNA has been detected in urine and saliva samples.<sup>6</sup> Evidence on CCHF RNA presence in tears is not conclusive.<sup>7</sup> Data of the persistence of CCHFV in the environment of patients are lacking. To our knowledge there are only two reports suggesting the possibility of sexual transmission of CCHF.<sup>8,9</sup> However, the presence of CCHFV RNA in semen samples has not ever been studied. Sexual transmission of CCHF could be potentially important in terms of community transmission, as it has been shown for other haemorrhagic fevers such as Ebola virus disease. Finally, it is still not clear if the discharge criteria for patients with CCHF applied in Turkey can be extrapolated to our health care system. In Turkey patients are routinely discharged after clinical and laboratory improvement

without confirming clearance of viraemia.<sup>3</sup> For other haemorrhagic fevers WHO recommends discharge after confirming a negative blood PCR.<sup>10</sup>

Last year firsts autochthonous cases of CCHF in Spain, as well as the recent detection of infected ticks in areas previously unaffected, suggests that CCHFV circulation in Spain is greater than expected. The Spanish medical and scientific community has to be prepared to care for new cases of CCHF and to fill in the important current gaps of knowledge about this disease.

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## References

- Ministerio de Sanidad, Servicios Sociales e Igualdad: Informe de Situación y Evaluación del riesgo de Transmisión de Fiebre Hemorrágica de Crimea-Congo (FHCC) en España (Abril 2017) [consulted 1 May 2017] Available in: [www.msssi.gob.es/profesionales/saludPublica/enfermedadesEmergentes/CrimeaCongo/docs/ACTUALIZACION\\_ER.FHCC.20.04.2017.pdf](http://www.msssi.gob.es/profesionales/saludPublica/enfermedadesEmergentes/CrimeaCongo/docs/ACTUALIZACION_ER.FHCC.20.04.2017.pdf)
- Palomar AM, Portillo A, Santibáñez S, García-Álvarez L, Muñoz-Sanz A, Márquez FJ, et al. Molecular (ticks) and serological (humans) study of Crimean-Congo hemorrhagic fever virus in the Iberian Peninsula, 2013–2015. *Enferm Infecc Microbiol Clin*. 2017 [Epub ahead of print].
- Leblebicioglu H, Sunbul M, Barut S, Buyuktuna SA, Ozkurt Z, Yapar D, et al. Multi-center prospective evaluation of discharge criteria for hospitalized patients with Crimean-Congo Hemorrhagic Fever. *Antiviral Res*. 2016;133:9–13.
- Gül S, Gül EU, Yesilyurt M, Öztürk B, Kusu F, Ergonul O. Health-related quality of life and the prevalence of post-traumatic stress disorder among Crimean-Congo hemorrhagic fever survivors. *Jpn J Infect Dis*. 2012;65:392–5.
- Engin A, Yildirim A, Kunt T, Bakır M, Dokmetas I, Özdemir L. Clinical investigation of the transient evoked otoacoustic emission test in Crimean-Congo hemorrhagic fever. *Int J Infect Dis*. 2008;12:162–5.
- Bodur H, Akinci E, Ongürü P, Carhan A, Uyar Y, Tanrıci A, et al. Detection of Crimean-Congo hemorrhagic fever virus genome in saliva and urine. *Int J Infect Dis*. 2010;14:e247–9.
- Erdogan H, Engin A, Kalaycioglu AT. Investigation of the presence of Crimean-Congo hemorrhagic fever virus RNA in tears of eleven infected patients. *J Clin Exp Ophthalmol*. 2011;02:185.
- Pshenichnaya NY, Sydenko IS, Klinovaya EP, Romanova EB, Zhuravlev AS. Possible sexual transmission of Crimean-Congo hemorrhagic fever. *Int J Infect Dis*. 2016;45:109–11.
- Ergonul O, Battal I. Potential sexual transmission of Crimean-Congo hemorrhagic fever infection. *Jpn J Infect Dis*. 2014;67:137–8.
- Jacob S. Clinical management of patients with viral haemorrhagic fever: a pocket guide for the Front-line Health Worker. World Health Organization 2016, pp. 1–203 [consulted 1 May 2017]. Available in: <http://apps.who.int/medicinedocs/documents/s22501en/s22501en.pdf>

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