New cases of imported Lassa virus infection in Europe

Sources
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On 20 Nov 2019, WHO was informed by the Netherlands International Health Regulations (IHR) National Focal Point of one imported case of Lassa fever from Sierra Leone. The patient was a male Dutch medical doctor who worked in a rural Masanga hospital in Tonkolili district, Northern province in Sierra Leone.

He performed a surgical procedure on two patient in Masanga hospital on 4 Nov 2019. Both the patients died (one of them in the same day of the surgical intervention) and are now considered probable Lassa virus cases.

The illness onset was on 11 Nov when this doctor experienced symptoms like malaise and headache, followed by fever, diarrhoea, vomiting, and cough.

On 11 and 12 November 2019 the patient attended an international surgical training event in Freetown, Sierra Leone. Healthcare workers from several countries attended the same event.

Given the persistence of symptoms, the Dutch doctor was medically evacuated to Amsterdam on 19 November 2019 by flight operated by a German company. No specific containment procedures were used.

On 20 Nov 2019 Lassa virus infection was confirmed by RT-PCR and by sequencing testing performed on plasma and urine samples at Erasmus University Medical Centre in Rotterdam.

The patient, finally, was hospitalised in Leiden University Medical Centre in strict isolation unit and died on 23 November 2019.

On 22 Nov 2019, WHO was informed of a second case of Lassa fever infection in another Dutch healthcare worker who took part to one of the surgical procedures performed on 4 Nov by the former Dutch infected doctor. He presented the first symptoms on 11 Nov and, after confirmation, was evacuated in a high containment isolation to the Netherlands. He was admitted in the Major Incident Hospital in Utrecht where he is currently under treatment.

A Sierra Leone nurse who participated to the same surgery team has been identified as the third confirmed case. Moreover another healthcare worker who assisted the two surgical local patients is currently considered a suspected case.

European preparedness and control measures
Since Masanga hospital in Sierra Leone is supported by non-governmental organizations and its staff is composed by international healthcare workers from several European countries (Denmark, the Netherlands, and the United Kingdom) the risk of transmission outside African borders was considered. Furthermore, the delay in the diagnosis of the former patient and the prolonged unprotected contacts during the international surgical training as well as in the context of the first flight evacuation make more urgent the detection of all the contacts of these infected patients. Contact tracing and monitoring activities have been started in several EU countries, including the Netherlands, Germany, Denmark and the United Kingdom.

To date, 132 at risk contacts have been identified among Dutch citizens in the Netherlands and in Sierra Leone, and 18 at risk contacts among British citizens who were in contact with the Dutch case. Moreover, all the four German flight staff involved in the evacuation of the first Dutch patient are currently under quarantine.

All the contacts will be monitored for a period of 21 days to detect the development of symptoms compatible with Lassa virus infection.

**Lassa virus infection**

Lassa fever is a haemorrhagic viral illness caused by an Arenavirus. It is endemic in the West Africa region particularly in Benin, Guinea, Liberia, Nigeria, Mali, Sierra Leone and Togo. *Mastomys natalensis* (the multimammate rat) is considered the animal reservoir and is widely distributed in those regions. These rodents shed the virus with their excreta and humans usually become infected through the exposure to food or household items contaminated with urine or feces of infected Mastomys rats or during the preparation of infected rodents for consumption. Less than 20% of the cases are attributed to human-to-human transmission, mainly in healthcare settings where proper personal protective equipments (PPE) are not available or not used and the prevention and control measures are adopted too late, mostly after the diagnosis of the index cases. On this regard during the incubation period, which lasts 2-21 days, the likelihood of virus-transmission is low but increases when patients become symptomatic. It is known that the 80% of infected patients remain asymptomatic or develop only mild symptoms. The remaining 20% of cases may results in severe disease, which can culminate in multi-organ failure, shock or in haemorrhagic manifestations. Lassa fever mortality is generally considered low (about 5%) in the community setting but is much higher among hospitalized patients (up to 50%). During the last outbreak registered in Nigeria (2018-2019) the case fatality rate was 20-25%.

The cornerstone of Lassa fever therapy is the supportive care of vital functions. It is supposed that an early administration of Ribavirin within the first six days of disease should be effective in the management of the infection. There are only insufficient data on the effectiveness of favipiravir in these patients.

Emanuele Nicastri, Samir Al Moghazi (INMI “L. Spallanzani”, IRCCS, Rome, Italy)
Nicola Petrosillo, Eskild Petersen (ESCMID Emerging Infections Taskforce, EITaF)