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Investigation and response to Rift Valley Fever and Yellow Fever outbreaks in humans in Uganda, 2016

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Purpose: Although reported in Kenya, Uganda for the first time investigated and responded to a Rift Valley Fever (RVF) outbreak in 2016. Uganda last reported yellow fever outbreak in 2010, but experienced a new outbreak in 2016 in three districts. We present the epidemiological description of the cases, identified risk factors and control efforts for RVF and Yellow Fever outbreaks.

Methods & Materials: In March 2016, two cases presenting with fever, general body weakness, severe haemorrhagic tendencies were reported by Kabale and Mbarara Reginonal Referral Hospitals as supected viral haemorrhagic fever cases. In March, Masaka Regional Refferal Hospital (300 km from Kabale district), and in April, Rukungiri and Kalangala districts reported cases with fever and haemorrhagic presentation. Through the coordinating National Task Force on epidemics in Ministry of Health, a multidisciplinary team with epidemiologists, veterinarians, envionmental health experts and statisticians investigated these cases. Blood sample collection and referral, line listing, active surveillance were done.

Results: For the RVF outbreak, the index case was a 42 year old male, a butcher by occupation whereas the second case was a 16 year old school boy. Although up to 24 cases were line listed, samples sent to Uganda Virus Research Institute confirmed two cases as positive for RVF virus by reverse transcriptase Polymerase Chain Reaction (RT-PCR). Out of 1051 samples collected from animals in the sub-county of the index case's residence, two goat samples were RT- PCR RVF positive; and IgG seropositive cattle (27%), goats (6.5%) and sheep (5.7%), indicating the possible source of infection. Risk factors included close animal contact, working in forested areas with the mosquito vector and being male. For Yellow Fever, 32 cases were linelisted but five in Masaka and one each in Kalangala and Rukungiri districts were confirmed positive by RT-PCR. Preventive vaccination of population above 6 months achieved more than 90% coverage in each district. No new cases were recorded after immunisation.

Conclusion: Uganda has developed capacity to investigate, test and confirm RVF and Yellow Fever virus diseases. Detailed active surveillance has been set up to investigate any additional cases in humans and animals to reduce chances of international spread.

http://dx.doi.org/10.1016/j.ijid.2016.11.319

20.096

Characterisation of the increasing numbers of autochthonous hepatitis E infections in England and Wales 2010-2015

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Purpose: Hepatitis E virus (HEV) was previously known for causing acute infections in travellers returning from hyperendemic countries. However, autochthonous, food –borne transmission of HEV genotype 3 (GT3) has been increasingly recognized as an emerging problem in industrialized countries. Although asymptomatic in most cases, HEV GT3 can cause mild and self-limiting to severe acute hepatitis and, most worryingly, chronic hepatitis in immunocompromised patients. Over the last decade, cases of acute HEV infection in humans have been increasing across Europe. Since 2010, a year on year increase has been reported in England and Wales. Previously the only phylotype circulating in England and Wales was HEV GT3 group 1, however, the substantial increase in HEV cases since 2010 has been associated with the emergence of a novel group of the virus (HEV GT3 group 2). Enhanced surveillance of cases of acute HEV infections in England and Wales was established in 2005 to investigate and characterise non-travel associated cases of HEV and to identify potential risk factors.

Methods & Materials: Newly diagnosed cases of HEV are reported to the Second Generation Surveillance System (SGSS, a voluntary electronic reporting database of clinically significant pathogens by NHS hospital laboratory departments). In addition, Health Protection Teams across England and Wales also report new cases of HEV and complete an enhanced surveillance questionnaire on each case. For case ascertainment, these findings are compared with cases reported to SGSS.

Results: The number of HEV cases tripled from 2010 to 2015. As previously reported, the majority (>70%) of cases of HEV GT3 infections are male and their median age is above 60 years. HEV GT3 group 2 virus appears to be responsible for a large part of the increase in indigenous cases, whilst a trend towards more severe and prolonged illness has been observed in cases of HEV GT3 clade 1 as demonstrated through higher rates of hospital admissions and prolonged illness.

Conclusion: The increasing rates of HEV across England and Wales remain a concern, particularly as the natural history of this disease continues to be unclear. The emergence of a new phylotype largely responsible for the increase in cases warrants further research.

http://dx.doi.org/10.1016/j.ijid.2016.11.320