



¹Institute for Novel and Emerging Infectious Diseases, Friedrich-Loeffler-Institut, Greifswald-Insel Riems, Germany

²Joint FAO/IAEA Division, Vienna Austria

³Service de Pathologie Infectieuses, Centre National de l'Élevage et de Recherches Vétérinaires (CNERV), Nouakchott, Mauritanie

MOLECULAR AND SEROEPIDEMIOLOGICAL STUDIES OF A RIFT VALLEY FEVER OUTBREAK IN NORTHERN MAURITANIA IN 2010

M. Eiden¹, S. Jäckel¹, A. Balkema-Buschmann¹, A. Vina-Rodriguez¹, H. Unger², K. Isselmou³, M. H. Groschup¹

Purpose

Rift Valley fever virus (RVFV) is a vector-borne zoonotic RNA virus affecting humans and livestock with significant morbidity and mortality rates during large and sudden outbreaks particularly in Africa. As various potential arthropod transmission vectors are also present in Europe, an importation of the RVFV virus may lead to epidemics. In autumn 2010, there were outbreaks of Rift Valley fever in northern areas of Mauritania leading to 63 laboratory confirmed human cases and 13 notified fatalities. We assayed serum samples from livestock including small ruminants, cattle and camels from various regions of Mauritania by molecular and serological tests to elucidate RVFV seroprevalence rates and transmission trails.

Methods

A panel of serum samples was collected in different parts of Mauritania from livestock with different molecular and serological diagnostic tools. RNA was isolated from all sera and checked by published and in-house quantitative real-time RT-PCR assays. Sera were also tested with an in-house ELISA, two different commercially available ELISAs and by indirect immunofluorescence.

Results

In sera from 4 camels viral RNA could be detected indicating viraemic animals. From one animal a partial sequence of the M-segment could be recovered and analysed. The serological analysis demonstrated a high seroprevalence of RVFV IgM and IgG antibodies of more than 50% in all animals investigated.

Conclusions

Our study enables a better view on the latest Mauritanian outbreak and demonstrates novel diagnostic tools for the analysis of serum samples. The results emphasize the potential role of small ruminants and especially camels in virus dissemination.

Corresponding author

Dr. Martin Eiden
Friedrich-Loeffler-Institut
INEID
Südufer 10
17493 Greifswald-Insel Riems, Germany
E-Mail: martin.eiden@fli.bund.de