Senior Fellowship for Dr. Ayodeji Olayemi: Molecular Epidemiology of Primary Lassa Fever Transmission: Unravelling the Virus-Rodent Relationship in Key Endemic Areas within Nigeria

Initiative: Wissen für morgen – Kooperative Forschungsvorhaben im subsaharischen Afrika (beendet)

Ausschreibung: Postdoc-Fellowship-Programm "Neglected Communicable Diseases and Related Public Health Research"

Bewilligung: 25.11.2014

Laufzeit: 3 Jahre

Projekt-Website: http://arntd.org/team/ayodeji-olayemi/

Which Lassa virus lineages are borne by which species of the Multimammate rat? How do Lassa virus strains obtained from human patients compare geographically and phylogenetically to the Lassa strains detected in rodents? What information can we glean from phylogenetic analyses of Lassa strains circulating in natural-host populations about how the Lassa virus is evolving? Forty five years after Lassa fever, a lethal viral hemorrhagic illness, was described we are just beginning to gain insight into these questions in Nigeria. Building on results from my Junior EFINTD Fellowship, this follow-up project seeks to delineate more precisely the circulation of various Lassa virus lineages peculiar to Nigeria; and to determine which particular rodents of the genus Mastomys serve as hosts to these clades. Employing PCR techniques for virus detection and rodent-host identification, localities will be sampled in selected foci of Lassa fever. Lassa virus genetic sequences obtained from rodents in these sites will be analyzed phylogenetically relative to virus sequences we recently acquired from rodents in other sites, in addition to virus genetic sequences representing varied Lassa lineages obtained from human patients published in GenBank. This project will provide insight into Lassa virus strain patterns of distribution and potential for emergence, enabling us trace human Lassa fever cases back to rodent populations that are hotspots of virus proliferation and represent a continuing risk of rodent-to-human infection. This knowledge is integral to more intelligent and effective control of Lassa fever in Nigeria.

Projektbeteiligte

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Arenavirus diversity and phylogeography of Mastomys natalensis rodents, Nigeria.
New hosts of the Lassa virus
Small mammal diversity and dynamics within Nigeria, with emphasis on reservoirs of the Lassa virus.
Widespread arenavirus occurrence and seroprevalence in small mammals, Nigeria.
Determining ancestry between rodent- and human-derived virus sequences in endemic foci: towards a more integral molecular epidemiology of Lassa fever within West Africa