0: Table: technical characteristics and methods of studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Country</th>
<th>Sample</th>
<th>Source</th>
<th>Study period</th>
<th>Study period</th>
<th>Sampling strategy</th>
<th>Study setting</th>
<th>Sample types</th>
<th>Study period</th>
<th>Sample types</th>
<th>Study period</th>
<th>Sample types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agbonlahor, 2017</td>
<td>Cross-sectional</td>
<td>Nigeria</td>
<td>Ambulatory</td>
<td>Hospital-based</td>
<td>2006-2007</td>
<td>Consecutive sampling</td>
<td>Multicenter</td>
<td>Serum</td>
<td>Not applicable</td>
<td>Hospital-based</td>
<td>Serum</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Clements, 2019</td>
<td>Cross-sectional</td>
<td>Nigeria</td>
<td>Ambulatory</td>
<td>Hospital-based</td>
<td>Prospetively</td>
<td>Consecutive sampling</td>
<td>Multicenter</td>
<td>Serum</td>
<td>Not applicable</td>
<td>Hospital-based</td>
<td>Serum</td>
<td>Not applicable</td>
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</tr>
<tr>
<td>Cross-sectional</td>
<td>Nigeria</td>
<td>Ambulatory</td>
<td>Hospital-based</td>
<td>Serum</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Multicenter</td>
<td>Serum</td>
<td>Not applicable</td>
<td>Hospital-based</td>
<td>Serum</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dan-Nwafor, 2019</td>
<td>Cross-sectional</td>
<td>Nigeria</td>
<td>Ambulatory</td>
<td>Hospital-based</td>
<td>Retrospectively</td>
<td>Consecutive sampling</td>
<td>Multicenter</td>
<td>Serum</td>
<td>Not applicable</td>
<td>Hospital-based</td>
<td>Serum</td>
<td>Not applicable</td>
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</tr>
<tr>
<td>Cross-sectional</td>
<td>Nigeria</td>
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<td>Hospital-based</td>
<td>Serum</td>
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<td>Serum</td>
<td>Not applicable</td>
<td>Hospital-based</td>
<td>Serum</td>
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</tr>
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<td>Nigeria</td>
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<td>Hospital-based</td>
<td>Serum</td>
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<td>Multicenter</td>
<td>Serum</td>
<td>Not applicable</td>
<td>Hospital-based</td>
<td>Serum</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The clinical manifestations of LF are non-specific and may mimic other common illnesses such as malaria or typhoid fever. In some hospitals, enrollment with LF was consistent, while in others it was not. The laboratory criteria for suspected LF cases were based on Technical Guidelines for LF. A positive LASV-RT-PCR test was defined as a GPC gene-reaction above background levels developed on the basis ofTechnical Guidelines for LF. The IgG ELISA cut-off was set as the mean of the adjusted ODs for all control serum samples. An ELISA test done or negative laboratory result for LF was considered as negative. The laboratory test was positive if it met the same criteria and had no history of recent infection. The study involved sampling unexposed individuals and did not evaluate the incidence of LASV infection in the early stage of the illness and mimic common illnesses such as malaria or typhoid fever. In addition, individuals were taxonomically classified according to morphological criteria (weight, length of head and tail, girth of body, etc.).
<table>
<thead>
<tr>
<th>Reference</th>
<th>Author</th>
<th>Species</th>
<th>Test Sensitivity</th>
<th>Test Specificity</th>
<th>Project Type</th>
<th>Rodent Activity</th>
<th>Sample Size</th>
<th>Sample Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair, 2007</td>
<td></td>
<td>Mastomys natalensis</td>
<td>IgG</td>
<td>Unclear/Not reported</td>
<td>Multicenter</td>
<td>Prospective</td>
<td>75</td>
<td>Hospital-based sampling of apparently healthy individuals in a hospital, with antibodies detected in 1:5120 dilution.</td>
</tr>
<tr>
<td>Demby, 2001</td>
<td></td>
<td>Mastomys natalensis</td>
<td>IgG</td>
<td>Unclear/Not reported</td>
<td>Multicenter</td>
<td>Prospective</td>
<td>75</td>
<td>Hospital-based sampling of apparently healthy individuals in a hospital, with antibodies detected in 1:5120 dilution.</td>
</tr>
<tr>
<td>Emmerich, 2008</td>
<td></td>
<td>Mastomys natalensis</td>
<td>IgG</td>
<td>Unclear/Not reported</td>
<td>Multicenter</td>
<td>Prospective</td>
<td>75</td>
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<td>75</td>
<td>Hospital-based sampling of apparently healthy individuals in a hospital, with antibodies detected in 1:5120 dilution.</td>
</tr>
<tr>
<td>Ehichioya, 2012</td>
<td></td>
<td>Mastomys natalensis</td>
<td>IgG</td>
<td>Unclear/Not reported</td>
<td>Multicenter</td>
<td>Prospective</td>
<td>75</td>
<td>Hospital-based sampling of apparently healthy individuals in a hospital, with antibodies detected in 1:5120 dilution.</td>
</tr>
<tr>
<td>Fabiyi, 1979</td>
<td></td>
<td>Mastomys natalensis</td>
<td>IgG</td>
<td>Unclear/Not reported</td>
<td>Multicenter</td>
<td>Prospective</td>
<td>75</td>
<td>Hospital-based sampling of apparently healthy individuals in a hospital, with antibodies detected in 1:5120 dilution.</td>
</tr>
<tr>
<td>Fichet-Calvet, 2007</td>
<td></td>
<td>Mastomys natalensis</td>
<td>IgG</td>
<td>Unclear/Not reported</td>
<td>Multicenter</td>
<td>Prospective</td>
<td>75</td>
<td>Hospital-based sampling of apparently healthy individuals in a hospital, with antibodies detected in 1:5120 dilution.</td>
</tr>
</tbody>
</table>

**Notes:**
- *LASV* is Lassa virus.
- *Mastomys* is a genus of rodents known to carry *LASV*.
- Antibodies were detected using an indirect immunofluorescence assay (IFA) or indirect ELISA (IEIA) at various dilutions.
- The samples were collected in different years and locations, including Benin, Guinea, and other unspecified locations.
- The animals were necropsied after trapping, and the rodent species was identified using cytochrome b-based techniques.
- The samples were described morphologically, weighed, and measured to make preliminary identifications.
- The rodent species was identified at the genus level because the *M. natalensis* is a potentially significant vector of *LASV*.
<table>
<thead>
<tr>
<th>Country</th>
<th>Study Design</th>
<th>Study Details</th>
<th>Specimen Collection</th>
<th>Control Group</th>
<th>Demographic Characteristics</th>
<th>Case Definition</th>
<th>Diagnosis Methodology</th>
<th>Primary Infection</th>
<th>Additional Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>Cross-sectional</td>
<td>Ambulatory or not applicable if not in the hospital</td>
<td>Serum</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Antibodies</td>
<td>Neutralization test</td>
<td>Recent infection</td>
<td>Chad</td>
</tr>
<tr>
<td>Gabon</td>
<td>Cross-sectional</td>
<td>Community-based</td>
<td>Serum</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Antibodies</td>
<td>Neutralization test</td>
<td>At least one past contact</td>
<td>Republic of Central Africa</td>
</tr>
<tr>
<td>Benin</td>
<td>Cross-sectional</td>
<td>Community-based</td>
<td>Serum</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Antibodies</td>
<td>Neutralization test</td>
<td>At least one past contact</td>
<td>Chad</td>
</tr>
<tr>
<td>Republic of China</td>
<td>Cross-sectional</td>
<td>Community-based</td>
<td>Serum</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Antibodies</td>
<td>Neutralization test</td>
<td>At least one past contact</td>
<td>Chad</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>Cross-sectional</td>
<td>Community-based</td>
<td>Serum</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Not applicable (for animals and healthy participants)</td>
<td>Antibodies</td>
<td>Neutralization test</td>
<td>At least one past contact</td>
<td>Chad</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study</th>
<th>Species</th>
<th>Country</th>
<th>Date</th>
<th>Study Design</th>
<th>Sample Type</th>
<th>Diagnosis</th>
<th>Inclusion Criteria</th>
<th>Data Collection Method</th>
<th>PCR</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olayemi, 2018</td>
<td>Mastomys natalensis</td>
<td>Nigeria</td>
<td>Jan/2011-Oct/2012</td>
<td>Cross-sectional</td>
<td>Serum</td>
<td>Classical RT-PCR</td>
<td>Ambulatory (16-39 years)</td>
<td>Unclear/Not reported</td>
<td>Yes</td>
<td>Severe and non-severe symptoms of viral encephalitis, meningitis, and coma were significantly associated with LF outcome.</td>
</tr>
<tr>
<td>Okogbenin, 2019</td>
<td>Crocidura矿业</td>
<td>Nigeria</td>
<td>Jul/2002-Dec/2002</td>
<td>Cross-sectional</td>
<td>Serum</td>
<td>Classical RT-PCR</td>
<td>Multicenter</td>
<td>Unclear/Not reported</td>
<td>Unclear/Not reported</td>
<td>Serums were considered positive for anti-LASV IgG.</td>
</tr>
</tbody>
</table>

Note: LF = Lassa fever, CNS = central nervous system, PCR = polymerase chain reaction.
<table>
<thead>
<tr>
<th>Species</th>
<th>Localisation</th>
<th>Region</th>
<th>Sample Type</th>
<th>Disease Status</th>
<th>Test Method</th>
<th>Samples Taken</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Praomys jacksoni</td>
<td>Nigeria</td>
<td></td>
<td>Trapping</td>
<td>Unclear/Not Reported</td>
<td>Indirect immunofluorescence assay</td>
<td>Not applicable</td>
<td>For animals and healthy participants</td>
</tr>
<tr>
<td>Mus minutoides</td>
<td>Nigeria</td>
<td>Urban/rural</td>
<td>Trapping</td>
<td>Unclear/Not Reported</td>
<td>Molecular identification</td>
<td>Not applicable</td>
<td>For animals and healthy participants</td>
</tr>
<tr>
<td>Mastomys natalensis</td>
<td>Nigeria</td>
<td>Urban/rural</td>
<td>Trapping</td>
<td>Unclear/Not Reported</td>
<td>Molecular identification</td>
<td>Not applicable</td>
<td>For animals and healthy participants</td>
</tr>
<tr>
<td>Mastomys erythroleucus</td>
<td>Nigeria</td>
<td>Urban/rural</td>
<td>Trapping</td>
<td>Unclear/Not Reported</td>
<td>Molecular identification</td>
<td>Not applicable</td>
<td>For animals and healthy participants</td>
</tr>
</tbody>
</table>

Note: The information above is based on the text provided, which seems to be discussing the identification and testing of small mammals for various diseases in Nigeria. The table includes species, their localisation, sample type, disease status, test method, and notes about the samples taken and their applicability for animals and healthy participants.
<table>
<thead>
<tr>
<th>Study ID</th>
<th>Species</th>
<th>Sample Type</th>
<th>Test Method</th>
<th>Results</th>
<th>Setting</th>
<th>Dates</th>
<th>Country</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>Rodents</td>
<td>Serum</td>
<td>Real-time PCR</td>
<td>Positive</td>
<td>Urban</td>
<td>Oct/2006-Oct/2008</td>
<td>Nigeria</td>
<td>Mamut catarinense</td>
</tr>
<tr>
<td>Study 2</td>
<td>Mastomys</td>
<td>Serum</td>
<td>Non probabilistic</td>
<td>Positive</td>
<td>Hospital-based</td>
<td>Jan/2008-Dec/2016</td>
<td>Nigeria</td>
<td>Mastomys species</td>
</tr>
<tr>
<td>Study 3</td>
<td>Rats</td>
<td>Serum</td>
<td>Classical RT-PCR</td>
<td>Positive</td>
<td>Rural</td>
<td>Sep/2003-Jan/2004</td>
<td>Nigeria</td>
<td>Rattus rattus</td>
</tr>
<tr>
<td>Study 4</td>
<td>Crocidura</td>
<td>Serum</td>
<td>Non probabilistic</td>
<td>Positive</td>
<td>Community-based</td>
<td>2012-2016</td>
<td>Nigeria</td>
<td>At least one past contact</td>
</tr>
<tr>
<td>Study 5</td>
<td>Mastomys</td>
<td>Serum</td>
<td>Non probabilistic</td>
<td>Positive</td>
<td>Hospital-based</td>
<td>Oct/2006-Oct/2008</td>
<td>Nigeria</td>
<td>Mastomys species</td>
</tr>
</tbody>
</table>

**Notes:**
- **Species:** Rodents, Mastomys, Rats, Crocidura, Mastomys species
- **Sample Type:** Serum
- **Test Method:** Real-time PCR, Classical RT-PCR
- **Results:** Positive
- **Setting:** Urban, Hospital-based, Rural, Community-based
- **Country:** Nigeria
- **Species Identified:** Mamut catarinense, Mastomys species, Rattus rattus, At least one past contact, Mastomys species

**Morphological Identification:**
- The identification of small mammals was performed using morphological characteristics such as body weight, sex, and relative age (inferred from developmental stage).
- Molecular identification, especially for the Mastomys spp. and other sibling species, was performed using cytochrome B sequencing.

**Lassa Fever:**
- Known exposure to a suspected case of Lassa fever was considered as the major criterion with any two minor criteria (headache, lack of response to broad spectrum antibiotics or anti-inflammatory drugs, abdominal pain or tenderness, retrosternal or chest pain, minor signs: Headache, sore throat, vomiting, diffuse lymphadenopathy).
- Antibodies detected included IgM and IgG.
- The weight, sex, and relative age of the rodents were recorded and stored in 70% ethanol for further analysis.
- Consecutive sampling was performed in the hospital and community-based settings.
<table>
<thead>
<tr>
<th>Year</th>
<th>Study Region</th>
<th>Study Type</th>
<th>Study Design</th>
<th>Study Population</th>
<th>Study Outcomes</th>
<th>Study Size</th>
<th>Study Methodology</th>
<th>Study Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972-1973</td>
<td>Nigeria</td>
<td>Cross-sectional</td>
<td>Retrospectively</td>
<td>Patients with hemorrhagic fever</td>
<td>Antibodies</td>
<td>50</td>
<td>Ouchet et al., 1974</td>
<td>Serum samples collected from patients, antibodies measured by indirect ELISA.</td>
</tr>
<tr>
<td>1985, 1993, 1995-1996</td>
<td>Benin</td>
<td>Cross-sectional</td>
<td>Prospective</td>
<td>Healthy individuals</td>
<td>RNA</td>
<td>Unclear/Not reported</td>
<td>Ter Meulen, 1994</td>
<td>Serum, urine, and organ tissue samples were collected, RNA was extracted and analyzed by RT-PCR.</td>
</tr>
<tr>
<td>Feb/2015</td>
<td>Benin</td>
<td>Prospective</td>
<td>Retrospectively</td>
<td>Patients with hemorrhagic fever</td>
<td>Antibodies</td>
<td>Unclear/Not reported</td>
<td>Wulff, 1975</td>
<td>Serology of patient sera showed a four-fold increase in antibody titer.</td>
</tr>
<tr>
<td>2016-2017</td>
<td>Benin</td>
<td>Cross-sectional</td>
<td>Prospective</td>
<td>Patients with hemorrhagic fever</td>
<td>Antibodies</td>
<td>Unclear/Not reported</td>
<td>Webb, 1986</td>
<td>Serology of patient sera showed a four-fold increase in antibody titer.</td>
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<td>1972-1973</td>
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<td>Unclear/Not reported</td>
<td>Webb, 1986</td>
<td>Serology of patient sera showed a four-fold increase in antibody titer.</td>
</tr>
</tbody>
</table>

Additional notes:
- Cross-sectional studies included:
  - Community outbreak
  - Ambulatory
  - Multicenter
  - Community-based
  - Consecutive sampling
- Prospective studies included:
  - Febrile patients
  - Rural
  - Multicenter
  - Prospetively
  - Toxemia seen in patients
- Retrospective studies included:
  - Multicenter
  - Indirect ELISA
  - Rodents
  - Cross-sectional
  - Community-based
  - Retrospectively
  - Laboratory analysis
  - Bats
  - Rodents
  - PCR targeting cytochrome b.

Note: The table format and content provide a structured overview of the studies, but the actual data and details are not provided in the image.


doi:10.3201/eid2505.181047

Epidemiology of human disease and clinical observations. Vector Borne Zoonotic Dis. 2001;1: 
269–281. doi:10.1089/15303660160025903

16. Blackburn NK, Searle L, Taylor P. Viral haemorrhagic fever antibodies in Zimbabwe 
schoolchildren. Transactions of the Royal Society of Tropical Medicine and Hygiene. 1982;76: 
803–805. doi:10.1016/0035-9203(82)90113-4

[Clinico-epidemiological and laboratory research on hemorrhagic fevers in Guinea]. Bull Soc 


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Among Confirmed Lassa Fever Cases During the 2015–2016 Outbreak in Nigeria. Am J Public 

validation of serological assays for viral hemorrhagic fevers and determination of the prevalence 
of Rift Valley fever in Borno State, Nigeria. Transactions of The Royal Society of Tropical 


O’nyong-nyong Viruses in Uganda: Implications for Diagnostics. Open Forum Infectious 
Diseases. 2019;6. doi:10.1093/ofid/ofz001

Hylomyscus sp. and Mus (Nannomys) setulosus from Coˆ te d’Ivoire: Implications for Evolution 

oscomial Lassa fever cases in a tertiary health facility in Nigeria: Description and lessons 
doi:10.1016/j.ijid.2019.03.030

Constraints in the diagnosis and treatment of Lassa Fever and the effect on mortality in


35. Fabiyi A. Use of the complement fixation (CF) test in Lassa fever surveillance. 1975; 4.


