Neurological Presentations Of Lassa Fever Mimicking Meningitis And Space-occupying Lesions: Report Of Two Cases

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BACKGROUND

- Lassa Fever (LF) is an acute haemorrhagic fever caused by the Lassa virus.

- Presentations are myriads and has been classified into stages. (NCDC 2017)

- Neurological manifestations is said to occur in stage 3 after the first week of the illness, and is usually associated with bleeding at this stage.

- However, we report two cases of Lassa fever with early neurological presentations mimicking meningitis at the Federal Medical Center, Owo, Ondo state.
CASE 1 - October 24, 2018

- A.O, 16 year old, male secondary school student residing at Ose LG, Ondo
- PC: generalised throbbing headache x1/52, fever and abdominal pain x4/7, restlessness and breathing difficulty within 24hrs
- O/E conscious, restless, resp distress, plethoric, SP02 88%.
- neck stiffness, Brudzinski/ Kernigs signs equivocal, Nystagmus.
- Hyperactive precordium; Grade 3 systolic murmur, BP - 90/60mmHg.
- Epigastric tenderness, Hepatomegaly.
- Diag: Meningitis r/o Cerebral abscess, underlying acyanotic CHD; r/o VHF.
- RBS 6.0mmol/L, CSF glucose 3.8, Protein 618mg/dl.
- Tx – antibiotics, antimalaria, Fluids, INO₂
CASE 1 - cont'd

- 3rd hr – developed diarrhoea, hypoglycemia recorded.
- 5th hr – conjunctival injection, hypotension, cold clammy extremities [shock].
- 6th hr – pupils dilated and sluggish, worsening resp distress.
- 7th hr – convulsed, unconscious, high fever (40ºC), shallow breathing, BP unrecordable, hypertonia, hypereflexia.
- 8th hr – condition further deteriorated, gasping respiration, CPR failed and demise occurred. Autopsy declined.
- Lassa PCR positive result obtained 48hrs later.

21-Feb-19
CASE 2 - October 25, 2018

• OL, 46 yr, washerman, residing at Sobe, Edo state.

• PC: high grade fever, headache, vomiting, (x5/7) convulsions and restlessness.(x1/7)

• No diarrhea, no abnormal bleeding

• Contact with persons with similar illness, bleeding or rodents denied.

• O/E: restless, pale, febrile (39.7°C), dehydrated, Kernigs and Brudzinski positive, no cranial nerve deficit, sluggishly reacting pupils, extensor plantar response, reduced power globally

• Other systems – NAD

• Diag: Meningoencephalitis, ?Intracranial SOL
CASE 2 - cont'd

• Inv: MP++, RBS
• Tx: Antibiotics, Mannitol, Fluids, NG tube, bowel and bladder care.
• 12th hr - Convulsions, LOC deteriorated, (GCS 7/15) LF was considered, patient transferred to Isolation ward, ribavirin commenced
• 20th hr - respiratory distress, cold clammy extremities, hypotension
• 23rd hr - Gasping respiration noticed, CPR failed, patient demised. Autopsy declined.
• Lassa PCR (positive) result obtained 48 hours later.

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DISCUSSION - 2

• The two cases had neurologic presentations, similar to the case series by Okokhere et al 2016. The presentations were classically like meningitis hence the Lassa diagnosis was not given priority.

• The duration of disease before neurologic symptoms did not conform to typical Lassa clinical stage three as expected, but rather like a 'de novo' encephalopathy.

• This suggests that Lassa virus should be a strong consideration as cause of meningitis especially in endemic environment. However, the logistics and resources of screening all suspected cases of meningitis for LF remain an issue worth considering.
DISCUSSION - 1

• Overt bleeding did not occur in any of the patients while one had features suggestive of internal bleeding. This is in keeping with findings in other series, hence waiting for bleeding before suspecting LF may lead to missed or delayed diagnosis.

• Both cases reported here died. There was also a rapid progression from time of first neurologic symptom to death.

• Neurological complications have been associated with poor prognosis (Akpede et al, Okokhere et al 2013), however, early presentation and prompt Ribavirin therapy may improve outcome as seen in the series by Okokhere et al 2016.
CONCLUSIONS & RECOMMENDATIONS

• Neurologic manifestations of Lassa is associated with poor prognosis hence a high index of suspicion required in endemic areas.

• Review of case definition for clinical purpose as recently released (NCDC SOP 2018) is justified and long overdue to enhance early identification and treatment.

• In endemic environments, Lassa fever should be strongly considered in patients with meningitis.

• Early diagnosis and prompt treatment are key to better outcome. This should be enhanced by provision of more diagnostic centers and ultimately point of care screening kit.
REFERENCES


