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Original Research Article

EARLY DIAGNOSIS AND MULTIDISCIPLINARY CARE IN LASSA FEVER DURING PREGNANCY: A CASE REPORT DEMONSTRATING FAVOURABLE MATERNAL AND FETAL OUTCOME IN AN ENDEMIC NIGERIAN SETTING

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ABSTRACT
Lassa fever poses a serious maternal and fetal threat in West Africa, with high mortality often linked to late presentation and limited access to specialized care. Pregnant women are particularly vulnerable to severe complications, including miscarriage, stillbirth, and rapid clinical deterioration. However, successful outcomes are achievable when diagnosis is timely and multidisciplinary interventions are promptly implemented.
We report the case of a 32-year-old woman in her third trimester who presented as a suspected case of Lassa fever with high-grade fever, prostration, and other signs suggestive of viral haemorrhagic fever. Laboratory evaluation confirmed Lassa virus infection using reverse transcriptase polymerase chain reaction testing. She was immediately managed at the Infection Control and Research Centre, Federal Medical Centre Owo, with a care team consisting of infectious disease physicians, obstetricians, neonatologists, and critical care nurses. Treatment included ribavirin therapy, fluid resuscitation, electrolyte management, and close fetal monitoring.
The pregnancy was successfully continued until spontaneous labour ensued. A live infant was delivered with favourable birth weight and Apgar scores. Although neonatal RT-PCR (Reverse Transcriptase-Polymerase Chain Reaction) later confirmed Lassa virus infection, early supportive care contributed to a stable post-delivery course. The mother also showed satisfactory recovery without obstetric or systemic complications.
This case underscores that favourable maternal and neonatal outcomes are possible even in the context of Lassa

fever during late pregnancy when early diagnosis, rapid initiation of antiviral therapy, and coordinated multidisciplinary care are provided. Strengthening clinical expertise, laboratory capacity, and collaborative management strategies in endemic regions could significantly improve survival rates and reduce adverse pregnancy outcomes.

Keywords: Lassa fever, pregnancy, maternal outcomes, neonatal infection, ribavirin, multidisciplinary care, Nigeria

1.0 INTRODUCTION

Lassa fever is a severe viral haemorrhagic illness endemic to West Africa and remains a major public health challenge, with an estimated 300,000–500,000 infections and up to 10,000 deaths reported each year.(Asogun *et al.*, 2019) Transmission to humans primarily occurs through exposure to food or household items contaminated by the urine or faeces of Mastomys natalensis and other infected rodents.(Asogun *et al.*, 2019) Human-to-human spread may also occur, especially in healthcare settings.(Asogun *et al.*, 2019) Clinical presentation is often nonspecific—fever, malaise, gastrointestinal symptoms—and may initially mimic other common tropical febrile illnesses, making early diagnosis difficult.(Asogun *et al.*, 2019) Pregnancy significantly worsens the course of Lassa fever, particularly in the third trimester, where both maternal mortality and adverse fetal outcomes are alarmingly high.(Agboeze *et al.*, 2019)(Okogbenin *et al.*, 2019) Previous study has estimated maternal mortality rates of over 30% in affected pregnancies, reflecting both absolute and relative risks that are substantially higher than in non-pregnant individuals.(Kayem *et al.*, 2020) These risks are intensified by delayed presentation, diagnostic challenges, and the need to balance maternal stabilization with fetal viability.(Okogbenin *et al.*, 2019) Ribavirin is currently the only antiviral therapy with proven survival benefit in Lassa fever and is most effective when administered promptly after symptom onset.(Bausch *et al.*, 2010) However, its mechanism of action is not fully understood and concerns persist regarding teratogenicity and limited safety data in pregnancy.(Bausch *et al.*, 2001)(Okogbenin *et al.*, 2019) Despite these uncertainties, the extremely high likelihood of maternal and fetal loss in untreated cases generally outweighs the potential risk posed by ribavirin exposure, making it a critical component of management.(Bausch *et al.*, 2001)

2.0 MATERIALS AND METHODS

This study was conducted at the Infection Control and Research Centre, Federal Medical Centre Owo (FMC), Ondo State, Nigeria — a designated facility for the management of suspected and confirmed Lassa fever cases in an endemic region. Ethical principles guiding case reporting were strictly followed, and written informed consent was obtained from the patient for the use of clinical information and neonatal outcomes for scientific dissemination. Personal identifiers were anonymized to ensure confidentiality. Ethical clearance was gotten from the Health Research and Ethics Committee (HREC) of the Federal Medical Centre Owo with the approval number: FMC OWO/HREC/2025/52.

Study Design

A descriptive single-patient case report design was used to document the diagnostic pathway, multidisciplinary clinical management, and maternal–fetal outcomes in a Lassa fever–complicated pregnancy.

Case Identification and Diagnosis

The patient, a pregnant woman in her third trimester, presented with symptoms suggestive of viral haemorrhagic fever. Initial evaluation included a full clinical examination and point-of-care laboratory screening. Confirmation of Lassa virus infection was done using reverse transcriptase–polymerase chain reaction (RT-PCR) which remains the gold-standard diagnostic tool in Nigeria for accurate case detection. The RT-PCR assay used was the RealStar® Lassa Virus RT-PCR Kit (Altona Diagnostics, Germany), processed at the FMC Owo Viral Haemorrhagic Fever (VHF) Reference Laboratory. Maternal sampling occurred on day 5 of illness for initial PCR and day 8 for repeat PCR. Neonatal blood sampling for RT-PCR was conducted within the first 12 hours of life, while breast milk PCR sampling was performed on postpartum day 1.

Clinical Implications

This case highlights the importance of prompt recognition of Lassa fever in pregnancy and the lifesaving potential of early antiviral intervention. Integrating multidisciplinary expertise—particularly among obstetricians, infectious disease specialists, neonatologists, and critical care teams—can significantly improve outcomes in maternal infections diagnosed during late gestation.(Agboeze *et al.*, 2019)(Okogbenin *et al.*, 2019) Strengthening access to molecular diagnostics, isolation facilities, and neonatal supportive care in endemic regions may reduce the historically high mortality associated with Lassa fever in pregnancy. Routine evaluation of newborns born to infected mothers is essential to ensure early identification and management of perinatal viral transmission.(Agboeze *et al.*, 2019)

Clinical Management

Upon confirmation, the patient was admitted to an isolation ward and provided multidisciplinary care led by an infectious disease team in collaboration with obstetricians, neonatologists, and critical care specialists. Management included ribavirin therapy according to national Lassa fever treatment guidelines, intravenous fluid resuscitation, electrolyte management, symptomatic therapy, and continuous maternal and fetal monitoring

Delivery and Neonatal Evaluation

Labour was allowed to progress spontaneously under close observation. Delivery occurred in a controlled isolation environment with neonatal care personnel in attendance. The newborn underwent clinical evaluation and laboratory screening, including RT-PCR testing for possible congenital or perinatal transmission.

Data Collection

Data were extracted from the clinical case file, laboratory result sheets, and delivery records. Documentation included maternal demographic details, medical and obstetric history, treatment interventions, laboratory parameters, delivery outcome, and neonatal clinical course.

3.0 CASE PRESENTATION AND RESULTS

A 32-year-old Christian woman of Yoruba ethnicity, a primary school teacher married in a monogamous union to a 40-year-old church security officer, who presented to the obstetric ward of FMC Owo as a suspected case of Lassa fever. She was a booked G2P1+0(1Alive), at 34 weeks and 3 days gestational age, with a 5-day history of high-grade, intermittent fever with chills and rigors, a 3-day history of breast engorgement which progressively enlarged and was associated with generalized tenderness. In addition, she complained of 16 hours of intermittent, waxing and waning, labor-like abdominal pain radiating to the back and thighs. She also reported two episodes of loose stools over three days and associated cough with chest pain. There was no history of vaginal bleeding or passage of show and no bleeding from any orifice, and she perceived regular fetal movement.

Prior to presentation, she visited a patent medicine vendor where she was given some medications such as antimalarial and antibiotics without improvement. The index pregnancy was spontaneous and desired. She booked antenatal care (ANC) at 29 weeks, with routine investigations normal, including a follow-up ultrasound for suspected intrauterine growth restriction (IUGR) which showed normal fetal biometry and estimated weight. She was compliant with routine ANC medications.

Her obstetric history revealed a term vaginal delivery two years prior, following cervical ripening and induction due to post-datism with suspected IUGR. She delivered a live female infant weighing 2.3 kg, who is currently healthy. The postpartum course was uneventful. She is a known asthmatic diagnosed during adolescence, maintained on salbutamol inhaler, with no prior exacerbations during the current pregnancy. An initial clinical assessment of preterm labor and acute febrile illness to rule out Lassa fever was made. Investigations including full blood count (FBC), malaria parasite (MP), viral hemorrhagic fever (VHF), and urinalysis were requested. She was commenced on IV pentazocine, IV ceftriaxone, IV metronidazole, IM dexamethasone, IM α-β arteether (Emal), IV fluids and nebulization with 5mg salbutamol. VHF testing returned positive for Lassa virus with Ct value 32.75

and 30.0 on the G and L genes, prompting transfer to the isolation and Lassa fever treatment ward. On examination, she appeared acutely ill, mildly dyspneic, febrile (38.1°C), moderately pale, anicteric, acyanosed, not dehydrated, with bilateral pedal edema. Neurologically, she was fully conscious and oriented, with normal tone, power, and reflexes. Respiratory rate was 32 cpm, and chest was clinically clear. Cardiovascular examination revealed a pulse rate of 88 bpm and blood pressure of 110/70 mmHg. Abdominal exam revealed mild epigastric tenderness and an enlarged gravid uterus with a fetal heart rate of 148 bpm. There was no vaginal bleeding or draining of liquor.

A diagnosis of Lassa fever in pregnancy, with comorbid asthma, was established. Investigations including FBC, electrolytes/urea/creatinine (E/U/Cr), liver function test (LFT), and urinalysis were repeated. She was started on IV normal saline alternating with 5% dextrose water (1L every 8 hours), IV antibiotics, IV omeprazole, and IV ribavirin per modified McCormick's protocol: 100 mg/kg stat, then 16 mg/kg 6-hourly x 4/7, followed by 8 mg/kg 8-hourly x 6/7 in accordance to the NCDC national guideline.(NCDC, 2018) She continued salbutamol inhaler with close feto-maternal monitoring done every 30 minutes with the aid of a sonicaid.

FBC showed mild anemia with a packed cell volume (PCV) of 26%, total white blood cell count of $6.2 \times 10^3/\mu L$ with neutrophilia (79%) and lymphopenia (16%), and platelet count of $162 \times 10^3/\mu L$. Electrolytes were notable for hyponatremia (Na^+ 125 mmol/L), normal potassium (K^+ 3.7 mmol/L), bicarbonate 23 mmol/L, chloride 92 mmol/L, elevated urea (BUN 8.3 mmol/L), and creatinine (149 µmol/L). LFT showed ALP 137 IU/L, ALT 29 IU/L, AST 59 IU/L, hypoalbuminemia (29.3 g/L), and normal total protein (61 g/L). She was transfused with 1 unit of cross-matched fresh whole blood on 3rd day of admission. Urinalysis revealed 1+ nitrites and protein, suggesting a urinary tract infection (UTI); she was commenced on oral cefixime 400 mg daily. Fetal heart rate remained regular, and fetal movements persisted. Repeat PCV on day 5 was 27%, and a second unit of blood was transfused the following day. Post-transfusion PCV rose to 31%. She remained clinically stable with regular fetal heart tones.

A day later, she developed waxing and waning lower abdominal and waist pain. Preterm contraction was suspected, and the obstetricians were consulted for review. The paediatricians were also consulted in anticipation of delivery, for neonatal resuscitation. Labor progressed, and she delivered a live female neonate at 35 weeks + 3 days by spontaneous vaginal delivery. APGAR scores were 5 at 1 minute and 7 at 5 minutes. Birth anthropometries were length (43cm), birth weight (1.9kg), OFC (33cm). An initial diagnosis of Lassa fever in a preterm low birthweight neonate was made by the paediatricians. Placenta was delivered by controlled cord traction and assessed for completeness. Active management of the third stage of labor was performed. Both mother and baby were clinically stable postpartum. The female neonate was born to a Lassa-positive mother who had received IV ribavirin for 8 days prior to delivery. On examination of the neonate by the paediatricians, the neonate had no respiratory distress, was afebrile (36.9°C), moderately pale, anicteric, acyanosed, not dehydrated, and had no pedal edema. Respiratory rate was 36 cycles per minute, heart rate 147 bpm, and SpO_2 99%. The baby was also placed on IM vitamin K 1 mg stat, had a random blood sugar of 77 mg/dL, and was started on 10% dextrose water at 75 mL/12 hours daily. IV ceftazidime 100 mg 12-hourly (at a dose of 100mg/kg/day using a weight of 1.9kg) and IM gentamicin 3 mg 12-hourly (at a dose of 3mg/kg/day using a weight of 1.9kg) were also commenced. Samples for FBC, E/U/Cr, and LFT were sent.

Breast milk and neonatal blood samples were also sent for Lassa virus RT-PCR. On postpartum day one (admission day 8 for mother), the mother had recurrent high-grade fever with chills and rigors. She was commenced on oral paracetamol 1 g t.d.s and artemether-lumefantrine (ACT) tablets 80/480 mg b.d x 3day. PCV postpartum was 29%. Repeat RT-PCR for mother was still positive (CT value 37.93 on G gene), and IV ribavirin was discontinued upon completion of the regimen. She was transitioned to oral ribavirin 400 mg t.d.s x 1/52. She remained clinically stable but stayed in the ward to care for her neonate, who was being co-managed by the pediatric team. The result of the baby's RT-PCR was positive with CT values of 27 and 34 on the G and L genes. The result of breast milk PCR was also positive, with CT value of 38 on the G gene only. The baby was commenced on IV ribavirin per Mc Cormick's regimen: 33 mg/kg stat, then 16 mg/kg 6-hourly x 4days, followed by 8 mg/kg 8-hourly x 6days.(NCDC, 2018) This translated to a dose of 60 mg stat, 30 mg 6-hourly x 4/7, and 15 mg 8-hourly x 6/7, using her current weight of 1.9kg. FBC result revealed mild anemia (PCV 36%), WBC $14.9 \times 10^3/\mu L$ with neutrophils 79% and lymphocytes 7%, platelet count $212 \times 10^3/\mu L$. Electrolytes were: Na^+ 120.7 mmol/L, K^+ 4.23 mmol/L, HCO_3^- 17.93 mmol/L, Cl^- 93 mmol/L. BUN was 4.43 mmol/L and creatinine 79.3 µmol/L. LFTs showed

ALP 274 IU/L, ALT 7 IU/L, AST 36 IU/L, albumin 36 g/L, and total protein 49 g/L. The mother's and baby's blood groups were checked and were both O positive.

The neonate was transfused with 40 mL of fresh whole blood at a dose of 20 mL/kg while frusemide cover (2 mg stat) at a dose of 1mg/kg using a weight of 1.9kg was given and she was nursed in a thermo-neutral environment. Post-transfusion packed cell volume (PCV) was 37%. Subsequently, the baby developed a tinge of jaundice on day 3. Intravenous fluids were adjusted to 8.3% dextrose saline at 90 mL/kg/day. Feeding was commenced with breast milk substitute (BMS) for preterm infants at 4 mL every 3 hours, in response to a positive breast milk PCR for Lassa virus. Serum bilirubin at this stage was 9.8 mg/dL; hence, a repeat evaluation was planned for the following day. The neonate was placed on phototherapy, and preparations for a possible exchange blood transfusion were initiated. However, upon further review, a second aliquot blood transfusion of 40 mL was administered following a PCV of 37%. Feeds were increased to 7 mL every 3 hours, and phototherapy was continued alongside routine medications and BMS. The neonate remained clinically stable. On the fifth day of admission, post-transfusion PCV was 44%, and serum bilirubin had increased to 14.68 mg/dL. Intravenous ceftazidime at 100mg/kg/day using a weight of 1.9kg and ribavirin according to the NCDC treatment guideline were continued, while BMS was increased to 10 mL every 3 hours. A repeat serum bilirubin level showed a further rise to 16.4 mg/dL (an increase of 1.7 mg/dL), prompting intensification of phototherapy. The following day, serum bilirubin reached 16.8 mg/dL. Breast milk substitute (BMS) was gradually increased to 13 mL every 3 hours, and intensive phototherapy was continued. Subsequent bilirubin measurement revealed a decrease to 14.8 mg/dL. BMS was further increased to 15 mL every 3 hours, and the neonate remained clinically stable. As the infant continued to tolerate feeds well, BMS was gradually increased to 17 mL every 3 hours. After 10 days of admission, the neonate weighed 1.91 kg and remained clinically stable. BMS was increased to 20 mL every 3 hours, and serum bilirubin (SB) and PCV were reassessed.

At day 10, her PCV was 50.3% and platelet count was $123 \times 10^3/\mu L$. Weight had increased to 2.0 kg. The neonate was commenced on expressed breast milk (EBM) following a negative breast milk PCR, with feeds given at 22 mL every 3 hours. However, due to insufficient maternal lactation, BMS was used to supplement the shortfall. Feeds were increased to 25 mL every 3 hours. Blood samples were obtained 72 hours later for repeat bilirubin testing. EBM was increased to 27 mL every 3 hours, and the neonate remained clinically stable. Serum bilirubin was found to be 2.75 mg/dL. The neonate completed the WHO-recommended ribavirin regimen with an additional 5-day extension, following a repeat blood RT-PCR that was still positive (CT-37.97 on G gene) at the time. Phototherapy was discontinued. Ribavirin was transitioned to oral administration (15 mg every 8 hours for 5 days), and intravenous ceftazidime was discontinued. Oral cephalexin (50 mg twice daily for 5 days) at a dose of 50mg/kg/day using a weight of 2kg, folic acid (2.5 mg every 6 hours), and multivitamins syrup (0.3 mL daily) were initiated. EBM was increased to 30 mL every 3 hours, and direct breastfeeding was encouraged. Repeat PCR on day 19 returned negative. The mother and neonate were discharged home in stable condition for follow-up with both the Viral Haemorrhagic Fever (VHF) team and the paediatric team. Routine immunizations, as outlined in the National Programme on Immunization (NPI) schedule, were also advised.

4.0 DISCUSSION

Previous studies on Lassa fever in pregnancy have consistently reported poor maternal and fetal outcomes. This unfavorable prognosis has been attributed to the higher viral loads often seen in pregnant women compared to their non-pregnant counterparts possibly due to poorly understood immunological changes in pregnancy or the virus affinity for highly vascularized tissues such as the placenta.(Okogbenin *et al.*, 2019) Outcomes are further worsened by late presentation, delayed diagnosis, and delayed referral of pregnant women to isolation centers.(Okogbenin *et al.*, 2019) The overlap of Lassa fever symptoms such as nausea, headache, and abdominal pain with those of complicated or even uncomplicated pregnancy may also contribute to delayed recognition and, consequently, poorer outcomes, especially when the infection is severe.(Okokhere *et al.*, 2018)

Maternal infection during pregnancy particularly in the third trimester is associated with severe complications including vertical transmission, poor fetal outcomes, and increased maternal mortality.(Okogbenin *et al.*, 2019) Neonatal infection, though rare, is often fatal, and the evidence base for managing neonates born to

infected mothers remains limited.(Ogunkunle *et al.*, 2020) This was supported by a LASCOPE study done among Lassa fever patients at an isolation centre in South-West Nigeria, which reported that about 4% of the pregnant women infected with Lassa fever had already suffered miscarriages before presenting to the isolation ward for admission, while a significant number of pregnant women further suffers fetal losses while on admission.(Duvignaud *et al.*, 2021)

Although Lassa fever is generally associated with a high risk of fetal demise at all gestational stages and maternal death in the third trimester, there have been reports of successful outcomes.(Obu *et al.*, 2020) For instance, a study conducted in Abakaliki, South-East Nigeria, documented favorable maternal and fetal outcomes despite the odds.(Agboeze *et al.*, 2019) This is similar to the case presented at FMC Owo, which describes not only maternal survival but also the rare occurrence of neonatal Lassa virus infection with favorable resolution. The neonate in this case developed complications including jaundice, sepsis, and anemia, but was successfully managed in collaboration with the pediatric team until all derangements were corrected and the virus was cleared. This was however contrary to some other reported cases of neonatal Lassa fever in South-Eastern Nigeria, with a 100% mortality of the three cases managed.(Obu *et al.*, 2020) This could have resulted from low index of suspicion of the pregnant mother for Lassa fever infection by the initial care givers, and late presentation to the isolation centre for appropriate care and attention.(Obu *et al.*, 2020)(Ogunkunle *et al.*, 2020)

This case presents a rare but instructive scenario of successful management of a neonate with early-onset Lassa fever, vertically acquired from a symptomatic mother. The high viral load (CT value 27, 34) observed in the neonate's positive RT-PCR was consistent with acute infection. Given the non-specific nature of Lassa fever symptom; early presentation, high index of suspicion and prompt initiation of intravenous ribavirin and other supportive care was critical.(Ogunkunle *et al.*, 2020)(Greenky *et al.*, 2018)

Although ribavirin is widely accepted as the antiviral of choice for Lassa fever, its use in neonates is based largely on expert consensus and limited case reports.(NCDC, 2018) In this case, dosing regimens were adapted from adult and pediatric protocols with close monitoring.(NCDC, 2018) The favorable clinical trajectory observed supports the potential benefit of early ribavirin therapy in neonates with confirmed or suspected Lassa virus infection.(NCDC, 2018)

Hyperbilirubinemia in this case was likely multifactorial driven by prematurity, neonatal sepsis, and possible hemolysis from viral infection.(Ullah *et al.*, 2016)(Betty Ansong-Assoku; Pratibha A. Ankola, 2024) Phototherapy proved effective, and the need for exchange transfusion was ultimately avoided. This decision reflects the importance of individualized care based on evolving clinical parameters. Vertical transmission of Lassa virus is increasingly being reported.(Obu *et al.*, 2020) However, many neonates with confirmed infection do not survive beyond the first week of life.(Obu *et al.*, 2020) This case adds to the limited but growing body of evidence that suggests timely diagnosis and aggressive antiviral and supportive therapy can significantly improve neonatal outcomes. It also underscores the critical need for high clinical suspicion in endemic areas and the importance of robust maternal screening protocols, particularly in febrile pregnant women presenting with preterm labour.(Ogunkunle *et al.*, 2020)(Greenky *et al.*, 2018)

Pregnancy is a major risk factor for severe Lassa fever, particularly in the third trimester, where both maternal and fetal mortality are significantly elevated. In many reports, the course of the disease in pregnancy is characterized by rapid decline, pregnancy loss, and poor survival outcomes despite treatment. The favourable outcome in this case therefore contrasts with the trend reported in the literature and highlights the critical value of early diagnosis and timely multidisciplinary intervention. Ribavirin remains the only antiviral treatment with documented benefit in reducing mortality in Lassa fever, especially when administered promptly. However, concerns regarding limited safety data and potential teratogenic effects have often complicated decision-making in pregnant patients.(Sinclair *et al.*, 2017) Despite these concerns, current evidence suggests that the serious risks posed by untreated Lassa infection outweigh the theoretical fetal risks associated with ribavirin exposure during the later stages of pregnancy. The positive maternal and neonatal recovery observed here further supports the necessity of antiviral therapy in life-threatening maternal disease.

The favourable fetal outcome in this case is notable, given that Lassa virus infection in pregnancy frequently results in stillbirth or neonatal demise. Although neonatal RT-PCR confirmed viral transmission — indicating high potential for vertical or perinatal spread — the newborn remained clinically stable under close

neonatal care. This reinforces the importance of coordinated obstetric and pediatric involvement in management decisions for Lassa fever–complicated pregnancies.(Agboeze *et al.*, 2019)

This case also highlights the role of improved diagnostic capacity and specialized treatment centres in endemic areas. Rapid confirmation enabled timely isolation and intervention, reducing the likelihood of complications and improving prognosis. As more centers adopt multidisciplinary Lassa fever management protocols, similar positive outcomes may become increasingly achievable. This case contributes valuable insight to the limited body of literature describing maternal and neonatal survival in third-trimester Lassa fever. It demonstrates that early recognition, prompt antiviral administration, and coordinated clinical expertise can alter the course of disease traditionally associated with devastating pregnancy outcomes.

5.0 CONCLUSION

The successful maternal and neonatal outcomes observed in this case demonstrate that even in the context of third-trimester Lassa fever infection—a scenario historically associated with very high morbidity and mortality—early diagnosis and a coordinated multidisciplinary care approach can be associated with favourable results. Timely initiation of antiviral therapy with Ribavirin, combined with comprehensive obstetric, infectious disease, and neonatal management, may alter what is typically considered a poor prognosis. Moving forward, building capacity for rapid diagnostic testing, integrating obstetric-infectious disease collaboration, and ensuring access to specialised treatment in endemic settings are essential to improving outcomes for pregnant women and their infants. Continued research is needed to clarify optimal antiviral use in pregnancy, understand viral transmission dynamics, and refine care pathways to maximise maternal-fetal survival in resource-limited contexts.

This case presents a rare but instructive scenario of the successful management of a neonate with early onset Lassa fever vertically acquired from a symptomatic mother; contrary to the high maternal and fetal mortalities associated with third trimester as well as neonatal Lassa fever infections. This case further demonstrates that favourable outcomes in maternal and neonatal Lassa fever are achievable with early diagnosis, early presentation of patients, timely ribavirin therapy, and multidisciplinary care. The neonate's survival despite high viral load underscores the potential benefit of having a proactive and passionate managing team, coupled with the prompt antiviral initiation, though extended dosing requires further study. Mechanistically, pregnancy-related immune modulation and placental tropism likely contributed to disease severity, necessitating heightened vigilance in endemic areas. Long-term follow-up for neuro-developmental and auditory sequelae is essential. Public health efforts must prioritize antenatal education, healthcare worker training, and improved access to diagnostics, to reduce mortality. This report reinforces the need for standardized neonatal treatment protocols and further research into optimal ribavirin regimens.

RECOMMENDATIONS

1. Early screening and diagnosis: Health facilities in endemic regions should maintain a high index of suspicion for Lassa fever in febrile pregnant patients to allow timely testing and isolation.
2. Prompt Ribavirin therapy: Initiation of antiviral treatment should not be delayed in clinically suspected cases, as benefits outweigh potential risks in late pregnancy.

3. Multidisciplinary care pathways: Structured collaboration between obstetric, infectious disease, and pediatric teams should be institutionalized to optimize maternal-fetal outcomes.

4. Enhanced neonatal monitoring: All infants delivered to infected mothers should undergo laboratory testing and close clinical follow-up for early detection of perinatal transmission.

5. Strengthening treatment capacity: Investment in diagnostic infrastructure, trained personnel, and access to supportive resources is needed to expand high-quality care across endemic settings.

Further research:

More studies are needed to refine clinical guidelines, establish evidence-based fetal monitoring protocols, and investigate Ribavirin safety and optimal timing during pregnancy.

Limitations

This is a single-case report, and therefore findings may not be generalizable to all pregnant women with Lassa fever. The absence of advanced laboratory and imaging modalities limited assessment of viral effects on placental function and fetal organ systems. Furthermore, the mechanisms of neonatal infection could not be fully established due to the unavailability of virological studies on amniotic fluid, cord blood, or placental tissue. Larger observational studies are required to better characterize maternal-fetal outcomes and identify predictors of survival.

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Conflict of Interest declaration

The authors declare that there are no conflicts of interest regarding the publication of this case report. No financial, professional, or personal relationships influenced the clinical management or the preparation of this manuscript.

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Table 1: Maternal progress outcome

Timeline	Key Events	Interventions	Outcome	CT Value	
				GPC	L
Day 1 (admission)	Fever, dyspnea, pallor, pedal oedema; Lassa RT-PCR positive (CT 32.75, 30.0; PCV 26%; Na^+ 125mmol/l, creatinine 149umol/L	IV fluid, oxygen, antibiotics, analgesics, salbutamol, 1unit whole blood transfusion, and other supportive care	Haemodynamically unstable	32.75	30.0
Day 1-2	Continued fever, anemia	Commenced IV ribavirin (McCormick's regimen	Gradual clinical improvement		
Day 3-5	PCV not satisfactory (PCV-27%)	Whole blood transfusion X 1unit	Anemia improved (PCV- 31%)		
Day 5-7	Stable vitals	Continued supportive care, oral hematinic, and antiviral therapy	No complication		
Day 8 (35+3weeks)	Spontaneous labour	Delivery of live female neonate (1.9kg; APGAR score of 5 in 1 minute and 7 in 5 minutes)	No PPH, placenta intact		
Day 9-10	Postpartum recovery Breast milk PCR positive (CT value 38 on GPC gene)	Completed ribavirin course, Repeat PCV (29%)	Lassa PCR positive	37.93	NEG
Discharge	Stable	Routine follow-up	Remained well on follow-up		

Table 2: Neonatal progression outcome

Timeline	Key Event	Interventions	Outcome	CT value	
				GPC	L
Day 0 (Birth)	Female infant, 1.9kg, APGAR score of 5 at 1 minute and 7 at 5 minutes; Lassa RT-PCR positive (CT 27,34); anemia (PCV 36%), jaundice, suspected sepsis	WHO ribavirin regimen, antibiotics (ceftazidime +gentamicin), phototherapy, 40ml of fresh whole blood transfusion	Clinically stable	27.00	34.00
Day 1-3	Rising bilirubin: 9.8mg/dl Post transfusion PCV 37%	Phototherapy, Further transfusion of 40ml of fresh whole blood, continued ribavirin.	Avoided exchange transfusion		
Day 4-7	Post transfusion PCV 44%. Stable vitals; serum bilirubin 14.6mg/dl on day 5 and 16.4mg/dl on day 7	Intensive phototherapy, Fed with BMS	No feeding complications		
Day 8-10	Serum bilirubin 14.8mg/dl, Breast milk PCR negative PCV 50.3%	Introduced expressed breast milk (EBM), continued phototherapy	Feeding well	37.97	NEG
Day 11-14	Serum bilirubin 2.75mg/dl on day 13. Persistent low-level viraemia	Ribavirin extended for 5 days, phototherapy was discontinued	Improving clinically		
Day 15-19	Continued supportive care	Oral antibiotics, folic acid, multivitamins	Lassa PCR negative jaundice resolved	NEG	NEG
Discharge	Weight 2.0kg, stable	Routine follow-up	No neurological deficit		