



Clinical and Virologic Response to Lassa Fever Treatment with Ribavirin at Irrua Specialist Teaching Hospital, Nigeria.

Presenter

Dr Ephraim Ogbaini-Emovon



Background

- Ribavirin therapy with supportive care are currently the mainstay of clinical management of Lassa fever.
- There is paucity of data on the virologic and clinical determinants of treatment outcome in Lassa fever patients treated with ribavirin.
- Identification of such factors could lead to the development of evidence -based protocol for treatment and prognostication of lassa fever patients.



Methods

- A cohort of 152 laboratory - confirmed Lassa fever patients admitted and treated with standardized ribavirin regimen (Mc Comick for children and Modified Mc Comick for adults and pregnant women) and supportive care at Irrua Specialist Teaching Hospital between December 2017 – March 2018 were monitored to determine clinical and virologic response to treatment.
- Clinical parameters evaluated included duration of illness, signs and symptoms at presentation, treatment duration and outcome.
- Viral load parameters (Ct- values) were measured at presentation, and serially at 5-day intervals using quantitative real-time RT-PCR technique.



Results

Demographics Characteristics		Clinical and Virologic Profile	
Median age (yrs)	30 (1- 75)	Median duration of illness before presentation	8 days (1-30)
Modal age group (yrs)	20-29	Median duration of treatment	12 days (5-25)
Male:Female ratio	1.7:1	Mean CT value at presentation	35.50 ± 5.60
		Median number of days for viral clearance	10 (5-25)
		Case fatality rate (CFR)	9.5%



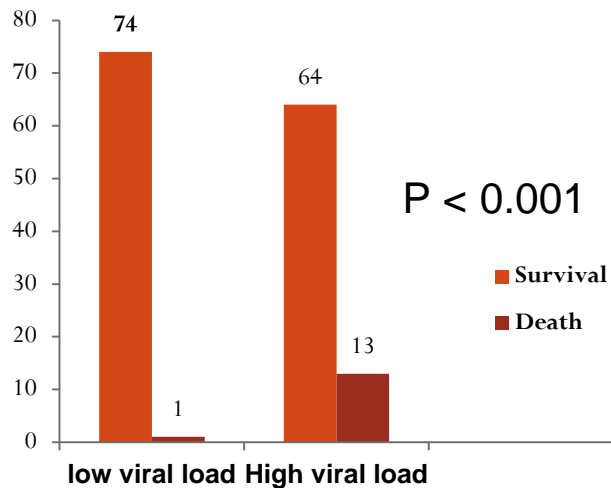
Viral clearance in relation to duration of treatment

N=139

Time to viral clearance (days)	No of Patients		
	No	%	Cumulative %
5	61	44	44
10	36	26	70
15	28	20	90
20	11	8	98
25	3	2	100

Baseline viral load in relation to time of clearance and outcome. N= 149

Viral load vs Outcome



Viral load vs clearance

Viral load	Time to viral clearance (days)				
	No of patients				
	5	10	15	20	25
Low	47	20	8	0	0
High	15	12	21	13	3

$P < 0.001$

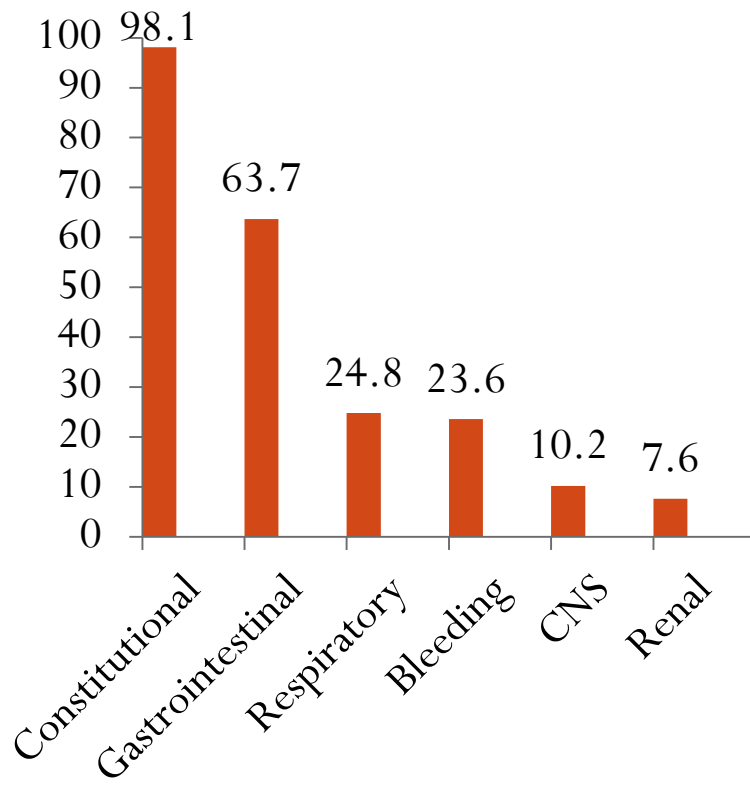
CT (cycle threshold) is inversely proportional to viral load.

High viral load = CT 18.5-33.5)

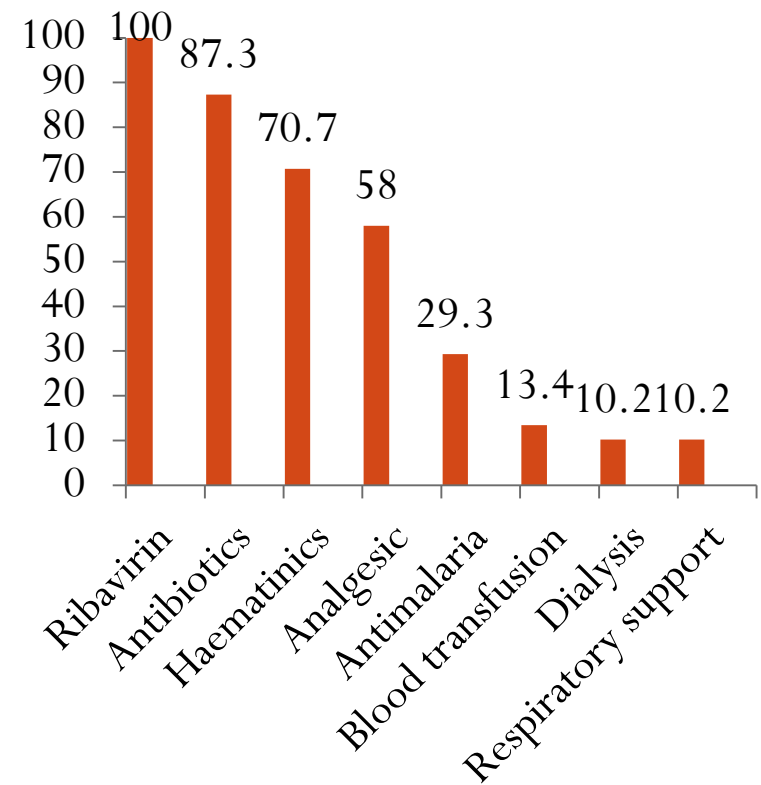
Low viral load = CT 33.6-44.6

Clinical features and treatment modalities

Signs and symptoms complex



Treatment modalities



Clinical presentation of patients vs Time of viral clearance

Category	Time to viral clearance (days)					P-value
	5	10	15	20	25	
Constitutional	60	33	28	13	3	0.599
Respiratory	19	8	3	4	1	0.214
CNS	8	2	2	1	0	0.808
Bleeding	9	6	8	5	0	0.249
Gastrointestinal	36	22	19	10	2	0.815
Renal	1	2	3	3	0	0.045



Duration of illness at presentation in relation to baseline viral load and outcome N= 147

Duration of illness	Baseline viral load (CT-value)		
	Low (33.6-44.6)	High (18.5-33.5)	
< 6 days	16 (43.2%)	21 (56.8%)	P= 0.238
> 6 days	57 (51.8%)	53 (48.2%)	
	Clinical outcome		
	Survival	Death	
< 6 days	36	4	P =0.307
> 6 days	102	9	

Conclusion

- A steady decline in viral load was observed with ribavirin treatment and supportive therapy.
- Baseline viral load was not significantly associated with duration of illness before presentation.
- Duration of illness before commencement of treatment was not significantly associated with outcome.
- Patients with high viral loads (low Ct value) at presentation took significantly longer period to achieve viral clearance (longer duration of treatment) and had higher mortality.
- This study has demonstrated the utility of viral load (Ct value) in monitoring response to ribavirin treatment and prognostication of lassa fever patients.