RETINAL HEAMORRHAGE AS A DIAGNOSTIC AND PROGNOSTIC TOOL IN THE MANAGEMENT OF LASSA FEVER PATIENTS

BY

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Introduction

- DIC is a late and a grave sign in Lassa fever
- It is due to damage to the endothelial lining of the blood vessels
- There is also increased vascular permeability from deposition of cytokines
- The retinal vessels are the thinnest vessels in humans
- Retinal haemorrhage is one of the signs of viral haemorrhagic fever.
- It tends to occurs in the early stages of the illness

Objectives

- To determine the presence of retinal bleed in patients with Lassa fever
- To ascertain if fundus examination can act as diagnostic tool in Lassa fever patients
- To determine the prognostic property of fundus examination in Lassa fever patients

Methodology

- Fundus examination and photography was carried out for a total of 57 patients with high index of suspicion of Lassa fever
- The study population included some patients admitted between December 2013 and May 2018
- A Binocular Indirect Ophthalmoscopy (BIO) was used to examine their fundi.
- Retinal photograph was obtained using a mobile Ret Cam for patients where retinal bleeds were seen on BIO




Methodology contd.

- Data collected were analyzed using the Statistical Package for Scientific Solution (SPSS) version 21.0.
- Summary statistics such as mean, frequency, as well as standard deviation were used where appropriate.
- Ethical clearance for the study was obtained from the ethical review Board of Irrua Specialist Teaching Hospital.

Results

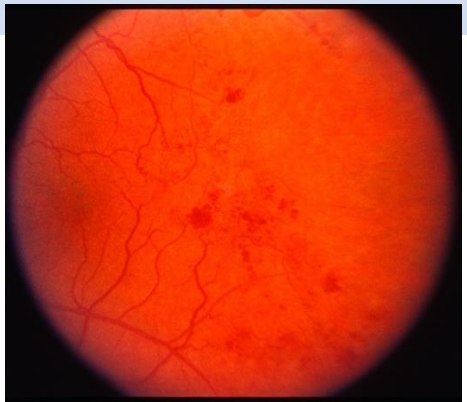
Table1: Sociodemographic Characteristics of Respondents

Variables	Frequency, n=57	Percent
Age group (Years)		
≤5	4	7.0
6-20	17	29.8
21-35	22	38.6
36-50	11	19.3
≥51	3	5.3
Sex		
Male	34	59.7
Female	23	40.4
Marital Status		
Single	19	33.3
Married	31	54.4
Divorced	2	3.5
Separated	5	8.8
Educational Status		
No Formal	21	36.8
Primary	11	19.3
Secondary	18	31.6
Tertiary	7	12.3

Results Contd.

Table 2: Fundus Examination of Respondants

Variables	Yes(Percent)	No (Percent)
Fundus exams	57(100.0%)	No record
Respondents with retinal bleeds, n=57	18(31.6%)	39(68.4%)
Early treatment with ribavirin, n=18	16(88.9%)	2(11.1%)
Had retinal bleed and was on ribavirin but did not progress to DIC, n=16	14(87.5%)	2(12.5%) 1 died 1 survived
Had retinal bleed but did not get early treatment with ribavirin, progressed to DIC, n=2	2(100%) and died	0(0.0%)



Discussion

- All of the respondents' fundi were examined for any evidence of bleeding
- About a third of all the respondents had retina bleeds
- Empirical treatment for presumed malaria or bacterial infection was done for almost all the patients
- Lassa fever was only suspected when a patient did not improve with the empirical treatment
- This diagnostic delay leads to delayed patient presentation, increased potential for transmission to family members and health care workers
- Also led to delayed initiation of ribavirin therapy, thereby decreasing its beneficial effect and treatment outcome

Discussion Contd.

- The Lassa virus has a high affinity for the vascular system particularly the vascular endothelium
- There is also an associated raised serum cytokines and other vasodilators in Lassa fever patients
- Conjuctival bleeds and subconjunctival hemorrhages' are some of the well documented ocular findings in Lassa fever patients
- The retinal blood vessels are the thinnest vessels in humans and indeed all vertebrates
- Prognosis is usually better when ribavirin is given within 10 days of development of signs and symptoms
- About a third of the respondents in this study got ribavirin before the availability of the lab diagnosis
- Retinal bleeds should therefore raise a high index of suspicion where there is a diagnostic dilemma, and if the chance that a patient may eventually bleed is in question
- Therefore, retinal bleed is a strong indication for early commencement of ribavirin in both suspected and confirmed cases

Conclusion

- Retinal bleed should be looked out for in all suspected cases of Lassa fever
- If seen, early commencement of ribavirin should be instituted as this can make for better outcome in the management of Lassa fever
- Retinal bleeds should be taken as a warning sign that the patient could eventually develop DIC
- Caregivers should therefore be prepared for such eventualities
- A larger case study needs to be done

THANK YOU FOR YOUR ATTENTION