

A promising therapeutic approach for post-Lassa fever sensorineural hearing loss

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Introduction

Post-Lassa fever sensorineural hearing loss (SNHL) is a debilitating complication affecting over 35% of survivors, with limited understanding of its pathophysiology and management. Despite its clinical importance, evidence-based therapeutic approaches for post-Lassa fever SNHL remain scarce.

Methods

A 13-year-old girl with profound unilateral SNHL in the right ear following Lassa fever recovery, confirmed by clinical examinations, including voice and Weber tests as there was no audiometric service at presentation. An evidence-based therapeutic regimen was initiated, including I.V mannitol (2g/kg 12hourly administered over 30minutes for 24 hours), I.V hydrocortisone (2mg/kg 12 hourly for 24 hours), oral betahistine (8mg 12 hourly) to enhance inner ear circulation and neurovite (1 tablet 12 hourly) to support nerve regeneration.

Results

Within 16 hours of treatment, the patient demonstrated significant improvement, responding to loud voice in the affected ear. Post-treatment

KuduWave pure-tone audiometry (PTA) showed improvement, with pure tone average of 102dB. However, the patient reported persistent tinnitus and hyperacusis, suggesting residual nerve irritation or acoustic trauma which resolved 2 weeks after discharge. The rapid response to mannitol and hydrocortisone supports the hypothesis that inflammation and endolymphatic hydrops may play a critical role in post-Lassa fever SNHL. Betahistine and neurovite contributed to inner ear circulation and nerve recovery respectively. Patient was discharged on prednisolone (0.5mg/kg twice daily) after 24 hours, to continue betahistine and neurovite as initially prescribed at admission. Repeat PTA average at one week showed increased pure tone average in the left (47dB) and reduced pure tone average in the affected ear (80dB). One month follow up were 43dB in the left and 57dB in the affected ear.

Conclusion

The findings suggest that inflammation and fluid dynamics are key mechanisms in this condition. This approach warrants further investigation through randomized controlled trials to establish its efficacy and applicability in broader populations.