



# Prevalence and Severity of Acute Kidney Injury among Children with Lassa Fever in Edo State, Nigeria between 2009 and 2017

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# Introduction

- ❖ Acute kidney injury (AKI) has been associated with various viral haemorrhagic fever (VHF) [Lima *et al*], with increased morbidity and mortality, especially among hospitalized children.
- ❖ Previous studies reported prevalence of 0.9% - 14.2% of AKI among Dengue fever [Laoprasopwattana *et al*, Mallhi *et al*], 28% Lassa Fever (LF) [Okokhere *et al*] and 50% Ebola patients [Dickson *et al*, Hunt *et al*].



# Introduction

- ❖ However, there is paucity of data on the prevalence of AKI and its impact on outcome among paediatric patients with LF.
  
- ❖ The objectives of this study were to assess the prevalence and severity of AKI among children with LF.



# Methodology

- ❖ It was a retrospective cross-sectional study
- ❖ Medical records of 58 LF confirmed cases treated at Irrua Specialist Teaching Hospital (ISTH), between 2009 and August 2017 were reviewed.
- ❖ AKI was diagnosed and staged with KDIGO criteria using only serum creatinine [Khwaja].



# Methodology

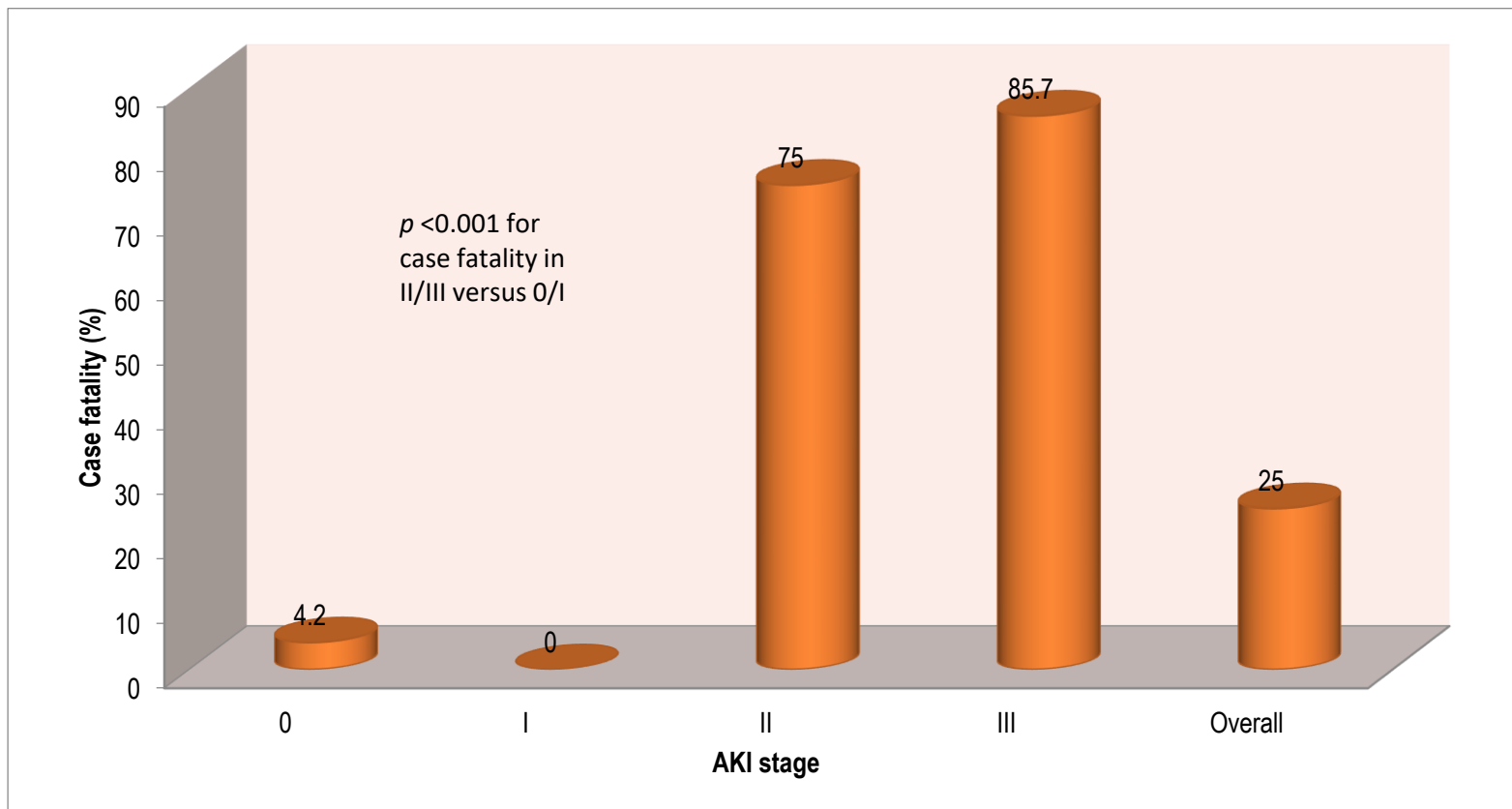
- ❖ They were managed with Ribavirin and other supportive treatments as required.
- ❖ Proportions were compared between groups using Chi square or Fisher's exact test as appropriate, and odds ratios (OR) and the 95% confidence intervals (CI) calculated.



# Results

- ❖ 40 of the 58 cases reviewed had complete data for analysis of AKI status.
- ❖ Age: 2 months – 15 years.
- ❖ 16/40 (40%) had KDIGO criteria-defined AKI.
  
- ❖ Case fatality among AKI versus no AKI:
  - 9/16 (56.3%) among children with AKI and 1/24 (4.2%) among those without AKI died (OR [95% CI] of death among children with AKI = 29.57 [3.17, 275.7],  $p < 0.001$ ).
- ❖ Stages of AKI: stage I in 5 (31.3%), stage II in 4 (25.0%) and stage III in 7 (43.7%).

The distribution of case fatality with the stage of AKI is illustrated in Figure 1.



**Figure 1: The distribution of case fatality with the stage of AKI in paediatric LF**



# Results

## ❖ Case fatality with severity of AKI:

- 9/11 (82%) among children with stage II/III AKI and 1/29 (3.5%) among those with stage I or no AKI died with Odds Ratio [95% Confidence Interval] of death in KIDGO stage II/III AKI = 126 (10.19, 1558),  $p < 0.001$ .





# Discussion

- ❖ The 40% prevalence of AKI in this study is higher than 0.9% - 14.2% previously reported among children and adults with Dengue fever [Laoprasopwattana *et al*, Mallhi *et al*] and 28% reported among predominantly adult patients with LF [Okokhere *et al*] but lower than 50% separately reported among Ebola patients [Dickson *et al*, Hunt *et al*].
- ❖ The high CFR of 56.3% among children with AKI is consistent with the increased mortality associated with AKI complicating VHF's such as dengue fever [Basu *et al*, Mallhi *et al*] LF [Okokhere *et al*] and Ebola [Dickson *et al*].



# Conclusion and Recommendation

- ❖ The prevalence of AKI is high in paediatric patients with LF and associated with increased case fatality, especially high stage-related case fatality
- ❖ The availability of programs for its early detection and appropriate treatment could improve survival.

# Acknowledgment





# Reference

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