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Risk factors for mortality among confirmed Lassa fever cases during the 2022-2024 outbreak in Liberia: A retrospective cohort study

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Introduction

Lassa fever (LF) is immediately notifiable, and one laboratory-confirmed case constitutes an outbreak. Since 2022, Liberia has experienced outbreaks with recorded mortality. We described the characteristics and determined risk factors for mortality among confirmed LF cases in Liberia.

Methods

A retrospective cohort study was conducted of confirmed LF cases from 2022 to 2024 in Liberia. We summarized the characteristics of cases (epidemiological, clinical and exposure) and outcome (alive/dead). Both bivariate and multivariate analysis were conducted to determine the risk factors for mortality at a significance level of 95% confidence interval and p values <0.05.

Results

Of the 179 confirmed LF cases, the median age was 21 (interquartile range {IQR}11-33) years, with 70% (125) under 30 years old. Females constituted 58% (103), and 37% (66) were students. Bong and Grand Bassa Counties accounted for the highest cases, 42% (75) and 31% (55), respectively. Rodent contact (53%, 95) was the most prevalent exposure mode. Fever (86%,154), headache (70%, 125), malaise (68%, 122), and myalgia (66%, 118) were the common clinical manifestations. Ribavirin treatments were administered to 87% (156) of the cases. The case fatality rate was 30% (53). Age 30 years or older (aRR = 2.5, 96% CI: 1.152- 5.841, p = 0.021) and those not treated with ribavirin (aRR = 3.5, 96% CI: 1.289- 9.508, p = 0.014) were independent significant risk factors of mortality, while those residing in Nimba (aRR = 0.2, 96% CI: 0.095- 0.633, p = 0.003) were less likely to die when infected.

Conclusion

The risk of dying from Lassa fever is still high in Liberia. However, treatment with ribavirin and higher age provided a better prognosis and outcome. We reported these findings to the NPHIL and suggested further studies on why Nimba County had better outcomes.