

**Title:** In-hospital outcomes and predictors of mortality among extremely low birth weight infants admitted at Mbarara Regional Referrals Hospital.

## **ABSTRACT**

**Background:** Prematurity continues to contribute disproportionately to neonatal mortality and morbidity. Low-birth-weight infants are approximately 13 times more likely to die than normal babies. Studies done in low-income countries have shown that in-hospital neonatal mortality, particularly among those with the lowest birth weight, is still high. However, information about outcomes and predictors of mortality among extremely low birth weight is not well known in our setting.

**Objective:** This study set out to determine the in-hospital outcomes and predictors of mortality in ELBW infants admitted to Mbarara Regional Referral Hospital.

**Methods:** We reviewed records of 95 ELBW infants with birthweight <1000 g admitted to the pediatric ward at MRRH, a tertiary hospital in Uganda, between the periods of June 2018 and June 2023. A pretested abstraction tool was used to obtain the data. We determined the in-hospital outcomes of the infants as proportions and presented them as frequencies and percentages. We described the patterns of mortality using line graphs and determined the predictors of neonatal mortality using univariable and multivariable modified Poisson regression analyses. Predictors with a p-value <0.05 were considered statistically significant. Ethical approval was sought from MUST Research Ethics Committee (MUST-REC).

**Results:** Overall mortality rate of 80% (80,000 per 100,000), mean length of stay for those that survived to discharge was 42.3 days, 3% were self-discharges and RDS, hypothermia, and jaundice were the most common complications in ELBW infants. Half of the infants that had late preterm complications died. There was an increase in survival of the ELBW infants and a decrease in the trend for mortality, those who died had a mean gestation age of 26.71 weeks ( $\pm 2.8$ ) and mean birth weight of 777.8g ( $\pm 132.7$ ) which was lower than the mean gestation age of those who survived which was at 27.8 weeks ( $\pm 4$ ) and 847.1g ( $\pm 96.8$ ) with no infant below 700 grams surviving. RDS, Anemia, not receiving pre-referral treatment and Prime parity were the independent predictors of mortality

**Conclusion:** The overall in-hospital mortality of ELBW infants is very high. There was a decrease in the trend in mortality over the past 5 years. RDS, Anemia, not receiving pre-referral treatment,

and Prime parity, were the independent predictors of mortality. We recommend that where possible pregnancies be prolonged to at least a fetal weight of 700g below which no babies survived and upgrading of NICU to a level that can support life in ELBW infants.

