

# **Prediction of Outcomes in Infants with Hydrops Fetalis by Mode of Delivery: A Retrospective Cohort from a Low-Resource Setting in Kenya**

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## **ABSTRACT**

**BACKGROUND** Hydrops fetalis is a condition associated with increased perinatal and neonatal mortality and morbidity. The overall survival rate of infants diagnosed with hydrops fetalis is currently estimated to be 27%, despite advanced intrauterine and neonatal care. Factors that contribute to poor perinatal and neonatal outcomes have been identified; however, little is known about the existing specific tool for predicting perinatal outcomes by mode of delivery.

**OBJECTIVE** This study aimed to determine whether cesarean section improves the perinatal outcomes of infants with hydrops fetalis in low-resource settings.

**STUDY DESIGN** This was a retrospective cohort study in which 102 medical records of pregnancies complicated by hydrops fetalis were retrieved. For all included women, transabdominal ultrasound was performed during pregnancy as part of the standard diagnostic modality for hydrops fetalis. The medical records of all pregnant women and their newborns were retrieved and reviewed to collect information related to the outcomes by mode of delivery, either cesarean section or vaginal delivery. The pregnant women were divided into the following 4 classes based on the severity of hydrops fetalis determined by obstetric ultrasound findings: class I (mild features of hydrops fetalis), II (moderate features of hydrops fetalis), III (moderately severe features of hydrops fetalis), and IV (severe features of hydrops fetalis). The significance of the obtained data was set at a two-tailed  $p < 0.05$ .

**RESULTS** This cohort study estimated the proportion of hydrops fetalis to be 0.8%. Nonimmune hydrops fetalis was the common type, accounting for 75.6% of all cases. The 7-day survival rate was estimated to be 42.2%. There was no statistically significant association between the mode of delivery and perinatal survival ( $p = 0.84$ ). Survival increased, especially in class II patients (47.5%), while survival was similarly low between class III and IV patients (22.5%). A statistically significant association was between class and survival ( $p < 0.001$ ).

**CONCLUSION** Cesarean section delivery does not improve the perinatal outcomes of hydrops fetalis infants. Creating a validated tool for predicting the perinatal outcomes of infants with hydrops fetalis by mode of delivery is useful for assisting in decision-making and predicting perinatal outcomes.