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Incidence and recurrence risk of low birth weight in Northern Tanzania: A Registry Based Study

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Background: Low birth weight (LBW) is an important indicator of newborn survival. It associated with higher risk of mortality, morbidity and long term health consequences later in life. Little has been explored in developing countries including Tanzania. This study aimed to determine the incidence and estimate recurrence risk of LBW among women who delivered at KCMC.

Methods: A prospective cohort study was conducted using maternally linked data from KCMC birth registry. A total of 39,073 women who delivered singleton live born babies between 2000 and 2014 were studied. Of these, 8,417 (21.5%) women had subsequent pregnancies. The recurrence risk of LBW was estimated using a multivariate log binomial model. A robust variance estimator was used to account for correlation between births of the same mother.

Results: The incidence of LBW was 7.7%. Women who delivered normal birth weight babies in the first pregnancy had a 6.0% risk of delivering a LBW baby in subsequent pregnancy compared to the absolute recurrence risk of 27.2% for women who had LBW in first pregnancy. This corresponded to a relative risk (RR) of 3.7 fold (95%CI: 3.87 – 5.25). Antenatal care visits (<4) (RR: 4.51; 3.29 – 6.19), preterm birth (RR: 4.26; 3.51 – 5.17), positive HIV status (RR: 5.41; 3.18 – 9.22) and preeclampsia (RR: 4.00; 3.27 – 4.91) in the first pregnancy were important predictors of LBW recurrence. Conclusion: The incidence of LBW in our study was higher as compared to the national average. Previous history of LBW was associated with recurrent LBW in subsequent pregnancies. Maternal characteristics such as low number of antenatal care visits, preterm delivery, HIV status and preeclampsia in the previous pregnancy were important predictors for LBW recurrence. Early identification of women at risk of LBW and close clinical follow-up of these women may reduce the risk of recurrent LBW.

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