Risk factors for neonatal mortality and its association with HIV infection among postnatal women attending Pumwani Maternity hospital, Kenya

John Kyalo Muthuka

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ABSTRACT

Four million children die in their first twenty eight days of life. HIV infection during pregnancy has contributed to the early neonatal mortalities. Post neonatal and child mortality have declined over a decade in developing nations but neonatal mortality rates have relatively remained unchanged accounting for approximately two thirds of the 8 million children deaths below 1 year of age and four-tenths of all deaths in children less than five years. HIV infection rates among pregnant women range between 15 to 40 percent in countries with the highest overall HIV prevalence in 2006, with neonatal mortalities seemingly being highest among HIV infected women. Regardless of PMTCT program inception in Kenya, much has not been studied on whether the HIV status of the mother is associated with neonatal mortalities whether the new born is infected with the virus or not. The objective of the study was to establish the relationship between HIV infection and neonatal mortality outcomes among postnatal women attending PMH. The design used was unmatched case control and the information was abstracted retrospectively by reviewing and auditing hospital records from January 2014 to January 2015. 128 cases were abstracted and the ratio of cases to controls was set at 1:1. A pre-tested abstraction tool was used. The tool included information regarding social demographic characteristics, mothers' HIV status, and the confounding factors in HIV infection and neonatal mortality. Pearson's chi-square test and odds ratio with corresponding 95% confidence interval were computed to establish the association between the dependent and independent variables. The level of statistical significance was set at <0.05. Binary logistic regression analysis was performed to adjust for confounding factors between neonatal mortality and HIV status. Out of 128 cases, 12.5% were born from HIV-positive mothers compared to 3.9% of 128 controls. Even though HIV sero-positivity status was found to be significantly associated with neonatal mortality at bivariate analysis [OR= 3.51; 95%CI: 1.25-9.91; P=0.012], it was not sustained after adjustment for other factors at the multivariate analysis [AOR=2.33; 95%CI: 0.76-7.15; P=0.139]. Multiple logistic regression dropped HIV as a predictor and revealed the following factors as independent predictors of neonatal mortality: LBW [AOR= 3.97; 95%CI: 2.26-6.98; P<0.001], co-morbidities [AOR= 3.84; 95%CI: 1.32-

11.16; P=0.013]. Mother's hemoglobin level [AOR= 3.18; 95%CI: 1.19-8.46; P=0.021], unemployment [AOR=0.43; 95%CI: 0.22- 0.85; P=0.016].This study showed an increased risk of neonatal mortality with HIV infection. However, this observation was not sustained after controlling for potential confounders. It is recommended that a more advanced design to elucidate the problem and a larger sample size be done to give more knowledge on this important topic. In addition, the study highlights the need for the Ministry of Health and other concerned stakeholders should prompt screen and treat/ properly manage of co morbidities during pregnancy, advocacy for hemoglobin level monitoring, nourishment during pregnancy and general public health approach to newborns with LBW, putting in mind that, maternal health is linked to newborns' birth weight.