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Similar One Year Mortality Among HIV Exposed Uninfected and HIV Unexposed Children in Kenya

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Background: Children who are HIV exposed uninfected (CHEU) are at high risk of mortality compared to children who are HIV unexposed (CHUU). Newer antiretroviral therapy (ART) (including dolutegravir-based regimens) and extended breastfeeding guidelines may improve outcomes for CHEU. We compared mortality among CHEU and CHUU in the first year of life.

Methods: Mother-child pairs were enrolled at 6 weeks of age in 7 maternal and child health clinics in Nairobi, Kisumu and Homa Bay and followed up at 6 and 12 months of life. Child mortality was ascertained through maternal/caregiver reports. We used Cox proportional hazards regression to compare estimates of mortality between CHEU and CHUU. Among CHEU, we compared hazard ratios (HR) for death between CHEU whose mother started ART pre- or post-pregnancy.

Results: Of 980 CHEU and 983 CHUU followed for a year, there were no differences in child sex (50% vs 52%) having a biological mother (>99% for both). Compared to CHUU, CHEU were more likely to have a deceased or absent father (10% vs 5%) and be exclusively breastfed at 6 weeks (98% vs 96%). CHEU mothers were older (31 vs 26 years), had lower education (47% vs 29% had only primary education), and had higher household food insecurity (19% vs 9%). Among CHEU, 85% had started ART pre-pregnancy. Overall, 7/980 (0.7%) CHEU and 12/983 (1.2%) HUU children died by 1 year of age. There were no statistically significant differences in mortality by HIV exposure (unadjusted HR: 0.58, 95%CI: 0.23-1.48; p=0.256). Comparing CHEU whose mothers started ART pre-pregnancy to those who started ART during or after pregnancy, there were no differences in mortality (2/146 [1.4%] vs 4/792

[0.5%], respectively; p=0.25). Overall, the HR for mortality was higher for male compared to female children (15/965 [1.6%] vs 4/998 [0.4%], respectively, HR: 3.90 95%CI: 1.29-11.75; p=0.016).

Conclusion: In this large cohort, we found no mortality differences between HEU and HUU in the first year of life. Mortality was lower in our cohort than national averages likely because our study enrolled infants aged 6 weeks. We observed higher post-neonatal mortality among male children; this finding warrants further exploration.

