Determinants of selected health outcomes among infants enrolled for early infant diagnosis services of HIV in hospitals in Nairobi county, Kenya

ABSTRACT

Pediatric HIV infection continues to be a public health concern due to the morbidity and mortality associated with the disease. Globally, mother to child transmission (MTCT) rate stands at 9% with sub-Saharan Africa accounting for 90% of these infections. In Kenya, the national MTCT rates stood at 11.5% by the end of 2018 and accounted for 8.9% of the global MTCT rates, with Nairobi County having a MTCT rate of 8.5%. The objective of this study was to determine selected health outcomes among infants enrolled for early infant diagnosis (EID) in selected hospitals in Nairobi County. The study was conducted at Mathare North and Kibera South Health Centres, and Mbagathi County Hospital. A prospective cohort study design was adopted whereby infants born to HIV positive mothers were followed up for one year. Simple random sampling was used to select 166 infants for the study. Data collected from the mothers included socio-demographic and socio-economic data, characteristics during PMTCT, disclosure status, nutrition data, and antiretroviral therapy adherence data. Service organization data for EID was collected from the healthcare providers while the availability of materials and equipment for EID service provision were observed by the researcher. Data were collected from the mothers using semi-structured interviewer-administered questionnaires and focus group discussion guides. Key informant guides were used to collect data from healthcare providers, while observation checklists were used to assess EID service organization. Quantitative data were entered in MS-Excel spreadsheets while cleaning, and analysis were done using STATA 14 software. Categorical variables were analyzed using measures of central tendency and proportions. Fisher's exact and Log-rank tests were used to test associations at the bivariable level while Poisson regression, Logistic regression, and Cox-regression were used to analyze data at the multivariable level. Qualitative data were transcribed, entered, coded, and analyzed manually using MS-Excel spreadsheets, and presented according to the emerging themes. Ethical approval was sought from Kenya Medical Research Institute, Scientific Ethics Review UnitKEMRI/SERU/CPHR/002/3525. HIV incidence rate among infants over one-year follow up was 9 cases per 100 person-years (95% CI: 5.465 – 16.290). Non-disclosure of HIV status increased the risk of infant HIV positivity at 6 months (RR=5.33 CI: 1.40-19.45) and 12 months (RR=4.54 CI: 1.62, 12.37). Infant stunting was the worst form of malnutrition experienced an indication of chronic malnutrition in utero and early childhood. Underweight mothers had higher odds of infant stunting at 6 months relative to mothers who had a normal BMI (AOR= 4.76 CI: 1.36, 16.65). Prognostic factors associated with poor infant survival included young maternal age (18-24 years) and mothers with a recent HIV diagnosis of ≤ 2 years prior to study onset (HR 5.97 CI: 1.20, 29.58) and (HR 6.97 CI: 1.96, 24.76), respectively. In conclusion, young maternal age, poor maternal and infant nutritional status, and non-disclosure of HIV status lead to poor infant survival and increased risk of infant HIV positivity. The study recommended the creation of a special package of care for young mothers which will have more rigorous adherence and nutritional counseling, integration of full nutritional services (early identification, screening, and management of malnutrition) into the PMTCT and EID cascades of care, and the formulation of an HIV stigma and discrimination policy with targeted behavioral and structural interventions.