Low mother-to-child transmission of HIV at a routine antenatal facility in a high HIV-prevalence, low income setting in South Africa

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ABOUT KHETh’IMpILO

Khet’Impilo AIDS Free Living is a South African NGO, whose mission is to support the South African Government in achieving its goals to scale up quality services for the management of HIV/AIDS in the primary health care sector, focusing on providing a family centered comprehensive and integrated service. The organization was established in 1998, after the merger of two NGOs: Khet’Impilo and Epworth. Over the last 15 years the organization has made important contributions to improving the delivery of antenatal services and PMTCT strategies in South Africa.

BACKGROUND

The 2009 antenatal clinic survey in South Africa estimated the national HIV prevalence among antenatal women aged 15-49 years to be 28.4%. KwaZulu-Natal had the highest provincial HIV prevalence of 39.5% with certain districts even higher HIV prevalence. To improve outcomes of mother-to-child transmission of HIV (MTCT) prevention programs, the South African department of health recently changed its guidelines to initiate antiretroviral therapy (ART) prophylaxis at 14 weeks of gestation and lifelong ART for mothers with a CD4 cell count < 350cells/µl, but high but declining HIV transmission rates continue to be reported. The post-natal follow-up of mother-infant pairs remains a challenge. The government’s district health information system is unable to provide adequate data to monitor progress with accuracy, is poorly implemented in part and collects aggregated data that is not cross-sectional in nature. Little data on accurate HIV transmission rates and cohort outcomes therefore exist in routine settings. This study describes the baseline characteristics of HIV-positive pregnant women and mother-infant pair MTCT outcomes in a high HIV-prevalence, low income setting at a routine antenatal assisted by an NGO that supports programs to improve MTCT. Department of Health, 2010. National Antenatal Sentinel HIV and Syphilis Prevalence Survey in South Africa, 2009.

METHOD

A cohort study was conducted with data obtained at a public primary level antenatal facility. Imbaliinenta is a community health care centre in a peri-urban area in Umngungundlovu district, KwaZulu Natal. This district has an estimated HIV prevalence of 40.9%. The facility is supported by Khet’Impilo (KI), whose intervention is based on an integrated model of care. It includes the combination of health services and community services. Community workers, named patient advocates (PAs), support HIV positive pregnant women presenting to the facility by ensuring that they utilise all available antenatal and postnatal services to achieve maximum outcomes. Clinical information of HIV-positive mothers was collected prospectively by nurses from the time of booking until 18 months post-partum. Data capturers entered data from clinical records into an electronic data collection tool. Cohort data of all mother-infant pairs for the period January 2005 until March 2011 were included in the analyses. The PMTCT programme at the facility includes HIV counselling and testing for all mothers booking for antenatal services, health counselling for the mothers and infant feeding practices, CD4 cell count testing; all mothers testing positive and those with a known status are not on HAART are initiated on ART on the day of booking given that their gestational age is 14 weeks or more. Upon receiving their CD4 cell count results mothers either continue on ART where the CD4 cell count is >350cells/µl or commence ART where ≤350cells/µl. Treatment regimen single dose nevirapine (NVP) and truvada during labour. NVP given to infants within 72 hours of birth, 6 weeks PCR testing for MTCT, infant screening PCR testing and 18 months ELISA testing for infants are routine. Infants testing positive are referred for ART where treatment is offered.

RESULTS

453 mother-infant pairs were included in analyses. Complete data was available for 171 mothers. At the time of booking, HIV positive mothers had a median age of 26 years (IQR: 22–33.7 years), a median gestational age of 23 weeks (IQR: 19–28 weeks), a median CD4 cell count of 377.5 cells/µl (IQR: 238–537), with 43.0% having a CD4 cell count < 350 cells/µl (Table 1). 10% of HIV positive mothers were on HAART. 78.0% of mothers received community-based adherence support from a PA. 445 (98.2%) infants received nevirapine within 72 hours after birth. 421 (92.9%) infants received an HIV DNA polymerase chain reaction (PCR) test at 6 weeks, however only 376 (83.0%) results were returned. Amongst infants available with PCR results, seven (1.8%) [95% CI: 0.8%–3.8%] were positive. Amongst 34 infants with available post-weaning PCR results who had negative or unavailable 6 week PCR results, two (5.9%) were HIV positive. Amongst 51 children born at least 18 months prior to site database closure, 25 (49.0%) had an available 18 month HIV ELISA test result, with all 25 being negative.

CONCLUSION

In routine antenatal settings with high HIV prevalence, low MTCT transmission rates are possible. Early booking for antenatal services is crucial to ensure early intervention with treatment thus lowering transmission rates. Community support is an integral component to improve PMTCT outcomes as PAs assisted in ensuring that mothers utilise available PMTCT services during both antenatal and post-natal periods. PAs have an important role in monitoring the post-natal follow-up of mother-infant pairs. Improved early infant HIV testing with retrieval of results, as well as improved follow-up of mother-infant pairs until 18 months is needed to better evaluate the impact of routine PMTCT programs. All infants testing HIV positive during the follow-up period need to be tracked and referred for appropriate care. The challenge in collecting cohort data in routine settings is that mothers initially booking at the antenatal facility do not necessarily deliver or return for postnatal services at the same facility, making it difficult to have complete information that links the mothers antenatal and per-partum details to the infant’s post-natal details. Furthermore, PCR registers have no data element for the mother’s details to link infants to mothers. Infants testing negative at 6 weeks seldom return for 18 months testing, and tracking those testing positive is a challenge as they are referred for care. Pas are critical in this regard.