

Title: Ecological risk of HIV Transmission Associated with different Short-Course Regimens in Ekurhuleni Metropolitan, South Africa

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Background

Prevention of mother-to-child transmission (PMTCT) of HIV services was first introduced in 2002 with the use of Single dose nevirapine (sdNVP) as the choice short-course regimen to prevent HIV transmission from mother to child. In 2008 AZT from 28 weeks of gestation (referred to as dual therapy) was added to the regimen. In 2010 the regimens were further revised to AZT from 14 weeks of gestation and Truvada™ administered with sdNVP during labour (referred to as combination therapy). The use of these interventions has demonstrated percentage reduction in vertical transmission of HIV infections among HIV-exposed infants at six weeks of age (Department of Health, South Africa, 2008; 2010; UNAIDS, 2005) in a controlled environment. However, there are limited studies that have evaluated the risk of transmission of HIV in infants at the population level since the introduction of these intervention packages.

This abstract presents findings from an analysis comparing HIV infection in infants at 6 weeks associated with the periods when sdNVP (from 2007 to 2008), dual therapy (from 2008 to 2010) and combination therapy (from 2010 to 2011) were used as the short-course regimens of choice respectively in Ekurhuleni metropolitan.

Method

Ekurhuleni Eastern Service delivery region is a sub-district of Ekurhuleni metropolitan with a population of approximately 900,000 with 34 health facilities implementing PMTCT services.

The average number of deliveries in 2010/2011 was approximately 13,045 and HIV prevalence of 31.5% among pregnant women. Using routine data from 2007 to 2011, an observational, analytic ecological study design was used to assess the association between the use of sdNVP, dual therapy and combination therapy and the risk of mother-to-child transmission of HIV in infants born in the district. Data was analysed using STATA version 10.

Results

Infants born during the period when sdNVP was the short-course regimen for HIV prevention has the highest risk of 2.5% (357/14497) HIV infection compared to those born when the short-course was dual therapy with risk of 2.3% (419/18330) and combination therapy with risk of 1.3%; (174/13045) respectively. The period when combination therapy was used is associated with reduction of HIV transmission in infants by almost two-fold when compared to SdNVP, 1.85 (95%CI: 1.54-2.21) and dual therapy, 1.71 (95%CI: 1.44-2.04) respectively. However, there

is no, 1.08 (95%CI: 0.94-1.24) difference in HIV infection in infants between the periods when SNVP and NVP/AZT was the short-course regime respectively.

Conclusion

The use of combination therapy as a short-course regimen in the fight against mother child transmission in Ekurhuleni metropolitan shows lower risk of HIV transmission and should be intensified by ensuring the all pregnant positive mothers received the short-course during the current pregnancy.