

Prevention of Human Immunodeficiency Virus (HIV) Transmission from Mother to Child—A Cohort Study in Singapore

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Abstract

Introduction: The landmark Paediatric AIDS Clinical Trials Group (PACTG) trial 076 showed in 1994 that antiretroviral therapy (ART) was effective in reducing maternal-child transmission of human immunodeficiency virus (HIV). This trial included antenatal oral zidovudine (ZDV), intrapartum intravenous ZDV, 6 weeks of oral ZDV to the babies and no breastfeeding. **Materials and Methods:** This study is an on-going, prospective, open-label trial conducted from 1995 in which we enrolled HIV-infected pregnant women using the above strategy. Since 1997, the antenatal component of the regimen was modified to include lamivudine with ZDV. All babies had serial HIV polymerase chain reaction (PCR) and antibody tests including enzyme-linked immunosorbent assay (EIA), particle agglutination (PA) and Western blot (WB) at day 1, 1 week, 1,2,3,6,12 and 18 months. **Results:** A total of 16 out of 19 eligible women were recruited from 1995 to 1999. The median age was 26 years (range 22 to 38 years), 38% were Singaporeans, median CD4 was 421 cells/mL (range 18 to 713 cells/mL) and median baseline gestational age was 23.5 weeks (range 8 to 32 weeks). None of the 16 children was infected as evidenced by 2 negative HIV PCRs including 1 done >4 months old with a follow-up of 6 months to 2 years. There was a statistically significant difference between the 3 HIV antibody tests at 12 months of age ($P = 0.003$), there being more negative results with WB as compared to PA ($P = 0.02$). However, the difference between the 3 tests at 18 months was not statistically significant. No long-term side effects in these children were seen. **Conclusion:** Although the number of patients in this study is small, the absolute prevention of transmission (95% confidence intervals 0%-17%) in this cohort supports the recommendation of antenatal HIV screening and treatment of those infected.

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