Follow-up Survey of Women Who Have Undergone a Prevention of Mother-to-Child Transmission Program in a Resource-Poor Setting in South Africa

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The aim of this study was to investigate the implementation of a prevention of mother-to-child transmission (PMTCT) program and to evaluate the uptake and adherence to single-dose nevirapine in a cohort sample that had undergone PMTCT in five public clinics in a resource-poor setting, Quakeni Local Service Area, O.R. Tambo District in the Eastern Cape, South Africa. Results indicated that 116 women (15.3% of the sample) were infected with HIV, 642 (84.7%) were uninfected, and 552 (42.1%) had an unknown HIV status. Almost all of the women had received information about HIV and HIV testing prenatally, but 552 (42%) had not been tested for HIV, and their HIV status was unknown. Only 66 (57%) of the HIV-infected pregnant women had been provided with nevirapine. It is recommended that the quality of HIV counseling be improved and the program of maternal self-medication with nevirapine tablets at onset of labor and maternal provision of nevirapine syrup to newborns be encouraged.

Key words: *adherence, follow-up study, HIV status, nevirapine, prevention of mother-to-child transmission, resource-poor setting, South Africa*

In 2007 alone, an estimated 420,000 children were newly infected with HIV, with almost 90% of these infections occurring in sub-Saharan Africa (United Nations/World Health Organization, 2007). In South Africa in 2006, an estimated 38,000 children acquired HIV infection from their mothers around the time of birth, and an additional 26,000 children were infected with HIV through breastfeeding (Department of Health, 2007).

Since 2002, considerable effort has been made in South Africa to introduce and expand single-dose nevirapine-based prevention of mother-to-child transmission (PMTCT) HIV programs. The PMTCT package for the pilot program in South Africa included offering all antenatal clients voluntary counseling and rapid HIV testing, infant feeding counseling, single-dose nevirapine to those women identified as HIV-infected and their infants, and free infant feeding formula for a period of 6 months for women choosing not to breastfeed. The program

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also stipulated that all infants should be followed up and tested for HIV with a rapid antibody test at 12 months. The rapid antibody test was chosen because of the high cost of polymerase chain reaction tests and limited laboratory infrastructure at the time the program was introduced (Doherty et al., 2003).

A 2002 evaluation of 18 PMTCT pilot sites in all provinces reported an HIV prevalence rate of 30% among women tested. A total of 85% of tested women received their results, but only 55% of HIV-infected women attending the pilot facilities received nevirapine prophylaxis (Doherty, McCoy, & Donohue, 2005). Infant follow-up varied across provinces from 10% to 78%. Of the infants who were tested, 170 (18%) were reported to be infected with HIV. Given the small number of infants tested and the testing method used (rapid antibody test at 12 months in a predominantly breastfeeding population), this figure cannot be considered an accurate reflection of the vertical transmission rate (Doherty et al., 2005). The evaluation reported several reasons for the low documented nevirapine coverage rate. Most important, underestimation of the coverage could occur if a woman had not disclosed her HIV status to labor ward staff despite having self-administered her nevirapine dose.

The predominant choice of infant feeding across both locations (67% in rural and 57% in urban sites) was infant feeding formula. Several operational problems with the distribution of free formula were reported, such as running out of formula supplies, difficulties with the procurement of supplies, and mothers returning to the facilities to fetch more supplies before their scheduled return dates (Doherty, Chopra, Nkonki, Jackson, & Greiner, 2006).

Factors associated with maternal nonadherence (no nevirapine consumption) have been identified as follows: home births, less than a high school education, low newborn birth weight, women attending antenatal care two times or less, young women under 20 years of age, single women, lack of disclosure of HIV status to one's partner, and lack of couples counseling (Albrecht et al., 2006; Bii, Otieno-Nyunya, Siika, & Rotich, 2007; Farquhar, Kiarie, & Richardson, 2004). Failure to administer nevirapine to the newborn baby was associated with birth at a tertiary hospital, lower 5-minute Apgar scores, neonatal death, and home delivery (Albrecht et al., 2006; Bii et al., 2007).

The aim of this study was to follow up on an investigation of a PMTCT program implemented in a resource-poor setting in the Eastern Cape of South Africa (Peltzer, Chao, & Dana, 2008) and to evaluate the uptake and adherence to single-dose nevirapine among HIV-infected mothers. Although there have been general improvements in access to electricity, flush or chemical toilets, and regular refuse removal, the Eastern Cape remains one of the poorest provinces in South Africa, with few jobs for its residents and the highest unemployment rate in the country (Statistics South Africa, 2004). Women and children remain in the rural areas and generally make up the majority of the population; almost 54% of the total population was female in 2001. The age distribution of the Eastern Cape population shows relatively few young adults compared with the national patterns. More than one third of the population was children under the age of 15 years (Statistics South Africa, 2004).

Since 1994, the health care system has been transformed from the old apartheid borders to seven health districts. A concerted effort has been made to strengthen and upgrade the primary health care system. Access to the basic package of primary health care facilities has improved, and more integrated services are provided. Primary health care services are rendered through 47 district hospitals and 18 provincially aided hospitals. One hospital is managed by a private company, and there are 751 clinics as well as 256 municipal clinics and 32 community health centers (Eastern Cape Socio Economic Consultative Council, 2007). However, those living in the former Bantustans have difficulty accessing primary health care services because of the rudimentary road infrastructure (Skinner, Mfecane, Gumede, Henda, & Davids, 2005). Strengthening the provincial health system is important for the integration and delivery of a comprehensive HIV program that is responsive to the needs of the population. The current range of prevention strategies include voluntary counselling and testing (VCT), PMTCT, postexposure prophylaxis, syndromic management of sexually transmitted infections, tuberculosis management, provision of barrier methods, life-skills programs, and an information, education, and communication campaign that is in line with the prevention strategy (Eastern Cape Department of Health [ECDOH], 2006).