Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States

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Lessons from Clinical Trials of Antiretroviral Interventions to Reduce Perinatal Transmission of HIV (Last updated July 31, 2012; last reviewed July 31, 2012)

Overview

One of the major achievements in HIV research was the demonstration by the Pediatric AIDS Clinical Trials Group 076 (PACTG 076) clinical trial that administration of zidovudine to pregnant women and their infants could reduce risk of perinatal transmission by nearly 70%.[1] Following the results of PACTG 076, in the United States and in other resource-abundant countries, implementation of the zidovudine regimen coupled with increased antenatal HIV counseling and testing rapidly resulted in significant declines in transmission.[2-5] Subsequent clinical trials and observational studies demonstrated that combination antiretroviral (ARV) prophylaxis (initially dual- and then triple-combination therapy) given to a mother antenatally was associated with further declines in transmission to less than 2%.[2, 6, 7] Current estimates indicate that fewer than 200 HIV-infected infants are now born each year in the United States.[4, 8, 9]

Each individual birth of an infected infant is a sentinel event representing missed opportunities and barriers to prevention.[10, 11] Important obstacles to elimination of perinatal transmission in the United States include the continued increase in HIV infection in women of childbearing age;[12] absent or delayed prenatal care, particularly in women using illicit drugs; acute (primary) infection in late pregnancy and in women who are breastfeeding; poor adherence to prescribed ARV regimens in pregnant women; and lack of full implementation of routine, universal prenatal HIV counseling and testing.[9, 11, 13]

Following the results of PACTG 076, researchers began to explore the development of shorter, less expensive prophylactic regimens more applicable to resource-constrained settings. Clinical trials initially focused on shortened zidovudine-alone prophylaxis regimens and moved to evaluating whether combination ARV regimens, such as short-course zidovudine combined with lamivudine, might have improved efficacy over zidovudine alone. Studies also evaluated whether even simpler, less expensive, single-drug regimens, such as single-dose intrapartum/neonatal nevirapine, would be effective and whether combining such regimens with other short-course regimens might result in improved efficacy. These studies have provided important insights into the mechanisms of action of ARV drugs in reducing perinatal transmission and in determining optimal regimens for use in the United States and other resource-rich countries.

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