Nevirapine use may be beneficial for some HIV-infected children who have achieved viral suppression

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HIV-infected children in South Africa who were exposed to the drug nevirapine at birth (used to help prevent mother-to-child HIV transmission) and then received a protease inhibitor (PI) for viral suppression achieved lower rates of viremia (virus in the blood stream) if they were switched to nevirapine, compared to children who continued on the PI-based regimen, according to a study in the September 8 issue of *JAMA*. PI-based therapies generally have a higher cost compared to nevirapine, which may leave some children excluded from treatment.

Current guidelines for nevirapine-exposed (at birth) infants advise that treatment be initiated with regimens based on ritonavir-boosted lopinavir. There are many limitations of continuing to use PI-based regimens indefinitely in young children, including its unpleasant taste (which poses adherence challenges for children too young to be prescribed tablets); concerns about metabolic toxicities with long-term use during critical periods of child development; and high cost, a major disincentive to implementing optimal primary therapy recommendations in several sub-Saharan African countries, according to background information in the article.

Ashraf Coovadia, M.B.Ch.B., of the University of the Witwatersrand, Johannesburg, South Africa, and colleagues conducted a clinical trial to examine whether nevirapine-based therapy would be as effective as ritonavir-boosted lopinavir in maintaining viral suppression among

nevirapine-exposed children if only initiated once viral suppression had been achieved with the initial PI-based regimen. The trial was conducted between April 2005 and May 2009 at a hospital in Johannesburg among 195 children who achieved viral suppression of less than 400 copies/mL for 3 or more months from a group of 323 nevirapine-exposed children who initiated PI-based therapy before 24 months of age. Control group children continued to receive ritonavir-boosted lopinavir, stavudine, and lamivudine (n = 99). Among the children that switched therapies, nevirapine was substituted for ritonavir-boosted lopinavir (n = 96). Children were followed up for 52 weeks after randomization.

The researchers found that there was better virologic suppression in the switch group than the control group, based on a primary end point of plasma viremia of more than 50 copies/mL. Confirmed viremia of more than 1,000 copies/mL (a safety end point) was more common among children in the switch group than the control group.

"CD4 cell response was better in the switch group. Older age was associated with viremia greater than 50 copies/mL in the control group. Inadequate adherence and drug resistance before treatment were associated with confirmed viremia greater than 1,000 copies/mL in the switch group," the authors write.

"Guidelines now recommend starting treatment among all HIV-infected infants as soon as possible after diagnosis following a trial demonstrating better outcomes if treatment is initiated immediately rather than waiting until standard prognostic indicators are reached. Thus, large numbers of HIV-infected infants should be initiating ritonavir-boosted lopinavir-based treatment, but the high cost of this regimen poses a barrier in many low-resource settings."

"Our results suggest that a majority of nevirapine-exposed children who are successfully treated with initial regimens based on ritonavir-boosted

lopinavir and achieve viral suppression could benefit from the switch strategy, which would allow reductions in costs of pediatric treatment programs. However, switching should only be undertaken with adequate virologic monitoring. Although the value of virologic monitoring in HIV treatment is strongly emphasized in well-resourced settings, most programs in low-resource settings do not include it as part of routine services because of cost. Simple algorithms could be developed for targeted virologic testing to safely implement the switch strategy," the authors conclude.

More information: *JAMA*. 2010;304[10]:1082-1090.