

# Adherence to antiretroviral therapy high in children in low income countries

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Researchers from the Indiana University School of Medicine, the Regenstrief Institute and Moi University School of Medicine are the first to report that adherence to antiretroviral therapy (ART) to fight human immunodeficiency virus (HIV) in children who live in low income countries is as high as or higher than adherence by children living in high income countries.

These findings, which were the results of review and analysis of all published studies of pediatric adherence to ART in low income countries, appear in the August 2008 issue of *The Pediatric Infectious Disease Journal*, and provide the first complete picture of ART adherence among individuals under age 18 in limited income countries, as defined by the World Bank.

"While many have thought that people won't be able to take medicines as well as they need to due to limited resources in poor countries, our review of all studies on the topic strongly suggests that children in low income countries are able to maintain at least a comparable degree of ART adherence, if not better adherence, than children in high income countries," said Rachel Vreeman, M.D., M.S., first author of the study. Dr. Vreeman is assistant professor of pediatrics at IU School of Medicine and a Regenstrief Institute affiliated scientist. "Healthcare systems need to carefully monitor how children with HIV take their medicines. This kind of monitoring can be particularly difficult in low-income countries, so it's very helpful for healthcare providers to understand how others do this monitoring and how well it's working,"

ART effectively suppresses HIV replication, reduces mortality, and improves the lives of individuals with HIV. ART adherence requires taking a combination of 3 drugs twice daily, always at the same time, for a lifetime. Therapy involves a combination of liquid and pills, depending on the age of the child. HIV becomes resistant to a drug if the treatment regimen is not adhered to faithfully.

Ninety percent of the 2.3 million HIV-infected children in the world live in sub-Saharan Africa. Understanding children's adherence in resource-limited countries presents a critical challenge, because they have limited options if viral resistance develops.

The review by the American-Kenya research team found that 76 percent of the studies among children in lower income countries reported more than 75 percent adherence to their medicines for HIV. Other studies have shown a pediatric adherence rate of lower than 75 percent in high income countries.

"We were not completely surprised to find the high rate of adherence to ART in children in low income countries because it mirrors the results of adult studies. But, there is no question that it is reassuring to learn that, even in settings where families face many challenges, children are still able to adhere to a demanding yet essential medication regimen," said Dr. Vreeman.

Several different methods were used to measure pediatric ART adherence, including self or caregiver-reports, pill counts, pharmacy records, clinic attendance, therapeutic drug monitoring, and directly observed therapy. Neither electronic drug monitoring nor viral load monitoring was reported.

"Our efforts to increase access to ART must be coupled with research to inform strategies to deliver that therapy," said Dr. Vreeman, a

pediatrician and health services researcher, who is a co-field director for research for the IU-Kenya project - Academic Model for the Prevention and Treatment of HIV - spending up to 6 months of the year in Kenya.

The authors made various recommendations to physicians and other health care providers monitoring pediatric adherence to ART including the important of asking children and not just parents about adherence and the advisability of counting pills to get accurate information.

Source: Indiana University

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