

# Measles vaccinations need to be repeated to protect HIV-infected children

July 17 2007

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HIV-infected children may require repeat measles vaccination for protection, according to new research from the Johns Hopkins Bloomberg School of Public Health and other institutions. The researchers found that only half of the HIV-infected children who survived without antiretroviral therapy maintained protective antibody levels 27 months after receiving measles vaccine.

By comparison, 89 percent of children without HIV maintained their immunity, as did 92 percent of the HIV-infected children who were revaccinated in a mass measles immunization campaign during the 27 months of follow-up. The study results were published online June 19, 2007, by *The Journal of Infectious Diseases*, and will be included in the August 1, 2007, printed issue of the journal.

“Despite recent progress in measles control, measles remains an important cause of child mortality in sub-Saharan Africa,” says William Moss, MD, MPH, lead author of the study and an associate professor in the Bloomberg School of Public Health’s Department of Epidemiology. “The measles virus needs only a small proportion of susceptible children to sustain transmission and cause an outbreak. Vaccinated children with HIV could be susceptible to measles because of their waning immunity, impeding measles elimination efforts in regions with high HIV prevalence.”

The study enrolled over 690 Zambian children, 2 to 8 months of age, who came to the Chawama Clinic in Lusaka, Zambia for routine

childhood vaccinations. Within six months of measles vaccination at 9 months of age, 88 percent of HIV-infected children developed protective measles antibody levels, as did 94 percent of children born to HIV-uninfected mothers and 94 percent of children who did not have HIV but were born to HIV-infected mothers. The proportion of HIV-infected children who developed protective antibody levels was comparable to those achieved by the other children. However, 27 months after vaccination, measles antibody concentrations were 75 percent lower in children infected with HIV at the time of vaccination and 72 percent lower in the children who became HIV infected after vaccination, compared with HIV-uninfected children.

The World Health Organization recommends a second opportunity for measles vaccination for all children, either through repeated immunization campaigns or a routine second dose delivered through the primary health care system. These study results suggest that this practice is especially important in regions of high HIV prevalence because of waning immunity among HIV-infected children.

“Sufficient resources must be invested to maintain high levels of population immunity against measles in regions of high HIV prevalence, as well as investing in strategies to prevent HIV infection and to treat HIV-infected people,” said Moss.

The study authors also recommend that additional research be conducted to determine the duration of measles immunity in HIV-infected children receiving antiretroviral therapy and their response to revaccination against measles.

Source: Johns Hopkins University Bloomberg School of Public Health

Citation: Measles vaccinations need to be repeated to protect HIV-infected children (2007, July 17) retrieved 25 April 2024 from <https://medicalxpress.com/news/2007-07-measles-vaccinations-hiv-infected-children.html>

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