Study defines treatment window for HIV+ children infected at birth

March 6 2012

HIV-positive children older than 1 year who were treated after showing moderate HIV-related symptoms did not experience greater cognitive or behavior problems compared to peers treated when signs of their infection were still mild, according to a study funded by the National Institutes of Health. But both groups of HIV-positive children lagged behind HIV-negative children in these areas, suggesting that the first year of life may present a critical treatment window for minimizing impairments in brain development due to HIV.

"Especially in children, we must always weigh the benefits of early treatment for HIV infection against the risks, which can range from long-term toxicity or drug resistance to scarcity of the supply of medications in regions with limited health care resources," noted Thomas R. Insel, M.D., director of the National Institute of Mental Health (NIMH), part of NIH. "Knowing the parameters of appropriate care can assist providers in making difficult treatment decisions for this vulnerable population."

As part of the NIH-funded Pediatric Randomized Early vs. Deferred Initiation in Cambodia and Thailand (PREDICT) trial, researchers assessed 284 HIV-positive children ages 1-12 who had mildly weakened immune systems but no severe symptoms of HIV infection. The children were randomly assigned to receive treatment immediately or to have treatment deferred until they began to show moderate signs of HIV-related illness.

At follow-up almost 3 years later, very few children in either group had progressed to AIDS. Children who received deferred treatment performed as well as those treated immediately on tests measuring intelligence, memory, and hand-eye coordination. However, both groups scored lower on these tests and had more behavior problems than HIV-negative children who took part in the PREDICT study. Though the study did not assess the children's actual educational needs, the difference in test scores would place many HIV-positive children at a lower functional level than their HIV-negative peers, indicating they may need additional resources or special schooling.

"These findings suggest that the window of opportunity for avoiding neurocognitive deficits by treating HIV infection may only occur earlier, in infancy," noted Pim Brouwers, Ph.D., who oversees NIMH-funded research on HIV/AIDS among children and adolescents and also served as a co-investigator on neurodevelopmental outcomes of the PREDICT study.

Provided by National Institutes of Health