

Improving the odds for children with HIV

The standard treatment for HIV-infected children in the developing world may need to be revised, according to a study led by Paul Palumbo, M.D., a Geisel professor of medicine and of pediatrics. In an article published in the *New England Journal of Medicine*, Palumbo and an international team of researchers revealed the findings of a clinical trial that compared the current standard treatment to an alternative drug regimen.

Palumbo is vice chair of the International Maternal Pediatric Adolescent AIDS Clinical Trial Group (IMPAACT), the organization that designed and carried out the trial. The trial was conducted at nine sites in sub-Saharan Africa and one site in India and enrolled 288 children between two and 36 months of age.

All of the children were given a combination of drugs that included two antiretroviral medications. About half also received nevirapine, which has long been used to treat HIV in children. The other half received ritonavir-boosted lopinavir (marketed under the brand name Kaletra) instead of nevirapine.



MARK WASHBURN

Paul Palumbo led a clinical trial that is changing the treatment of HIV-infected children in the developing world.

The primary endpoint in the trial had two components: virologic failure or the discontinuation of treatment for any reason, including death or the development of tuberculosis. Virologic failure meant that the treatment failed to induce a tenfold reduction in the level of HIV in a child's blood by 12 to 24 weeks on the regimen or that the virus level remained detectable in the blood at the end of 24 weeks.

At the end of 24 weeks, the treatment had failed in 40.8% of the children in the nevirapine group and in 19.3% of those in the lopinavir group. Ten children in the nevirapine group died, from a number of causes, compared to three children in the lopinavir group, but the difference was not statistically significant.

Overall, children in the nevirapine group were about two-and-a-half times more likely to have the treatment fail or to die than were children in the lopinavir group.

Based on the findings, Palumbo has already talked to the World Health Organization about potential changes in treatment guidelines for children not previously exposed to nevirapine, but there are a number of complicating factors. Nevirapine is less expensive than lopinavir, it is more tolerant of high temperatures, and it can be given in a single formulation that is combined with the two antiretroviral drugs. Lopinavir is not formulated with the two antiretrovirals, so each drug has to be administered separately.

The researchers are now investigating the reasons that nevirapine did not prove to be as effective as lopinavir and conducting a follow-up study with the children in the trial to track the long-term safety and efficacy of the treatments.

Amos Esty

HEAD GAMES

Over the course of a season, some college athletes who take part in contact sports may experience a decline in cognitive ability, according to research led by Thomas McAllister, M.D. (D'75, Med'78), a professor of psychiatry. The study, published in *Neurology*, compared students who played football or hockey to those who participated in noncontact sports. The athletes were given cognitive tests before and after a season. Of those who played hockey or football, 22% had a significantly lower score at the end of the season, compared to 4% of those from noncontact sports. McAllister concluded that "there may be a subgroup of athletes for whom repetitive head impacts affect learning and memory at least on a temporary basis."

THE LONG, LONG VIEW

Gregg Meyer, M.D., the chief clinical officer at DH, examined almost 200 years of data on health-care spending and mortality rates from Massachusetts General Hospital. From the early 19th century through the Great Depression, the cost per patient changed little (in constant 2010 dollars). By the early 1960s, costs started to increase rapidly, but that increase corresponded to a drop in patient mortality rates, a relationship that continued to the turn of the century. Since 2001, however, mortality rates have remained steady even as costs per patient have skyrocketed. "Close examination of our past clarifies just how daunting is the challenge we face today," Meyer wrote in the *New England Journal of Medicine*.