

FUNCTIONAL CURE OF HIV IN A CHILD

The media is awash with reports of functional cure of HIV in a child. The story is interesting and may have deeper implications for possible cures in pediatric HIV. The baby was born in rural Mississippi. The mother was detected to be HIV positive during labor when it was too late for preventive measures. The baby was referred at 30 hours to The University of Mississippi Medical Centre. Hannah Gay, Associate Professor of Pediatrics asked for two samples 1 hour apart for HIV RNA and DNA testing. She almost immediately started the baby on an aggressive 3 drug regimen in view of the high risk of infection in the baby. Initial viral load was 20,000 copies per mL. Three additional plasma viral load tests (days of life 7, 12, and 20) were positive before reaching undetectable levels at age 29 days. Medications were continued till the baby was 18 months old. The mother then stopped coming to the hospital. When the mother and child returned five months later, Dr. Gay expected to see high viral loads in the baby. But the tests were negative. Plasma HIV RNA remained undetectable (<20 copies/mL) on 16 different measurements obtained between 1 through 26 months of age despite ART discontinuation at age 18 months. Dr. Gay contacted Dr. Katherine Luzuriaga, an immunologist at the University of Massachusetts. The baby went through a battery of sophisticated tests. They found tiny amounts of some viral genetic material but no virus able to replicate, even lying dormant in so-called reservoirs in the body. There have been scattered cases reported in the past, including one in The New England Journal of Medicine in 1995, of babies clearing the virus, even without treatment. Those reports were greeted skeptically, particularly since testing methods were not very sophisticated then. The baby is currently 2 1/2 years old and off drugs for the past 1 year with no detectable plasma viral load, PBMC DNA, and HIV-specific antibodies with standard clinical assays, confirming a state of functional HIV cure. This is the first well-documented case of functional cure in an HIV positive child and suggests that very early ART may prevent establishment of a latent reservoir and achieve cure in children. (www.nature.com 5 March 2013)

THE ACELLULAR DPT VACCINE AND PERTUSSIS OUTBREAK IN USA

There has been a sustained epidemic of pertussis in the last one year in many countries including USA, Australia and UK. The incidence has been particularly high in school aged children between 10-14 years. And now there is mounting evidence that

the acellular DPT vaccine may be in part to blame. The acellular DPT vaccine was introduced in many developing countries in the late 1990's. Lambert *et al* from Brisbane, Australia did a comparative analysis of children who had received the DTaP versus DTwP. Of the cohort of 33,208 children born in 1998, significantly more children had an attack of pertussis between 2009 and 2011 if they had received the acellular vaccine. Now similar findings have been published in the NEJM from a group in Oregon, USA. In the US, the acellular vaccine was approved in 1997. Pertussis cases from statewide surveillance and immunization records from Oregon's population-based immunization information system, ALERT IIS, were reviewed for children born in Oregon in the years 1997 through 1999. Among children born during the 1997-1999 transition period, those who underwent priming with acellular rather than whole-cell pertussis vaccine had higher rates of reported pertussis. (*N Engl J Med* 2013; 368:581-582 February 7, 2013, *JAMA* 2012;308:454-56)

The Union Budget

The Finance Minister P Chidambaram has proposed a hike in the health budget by over 28 percent in 2013-14 to Rs.37, 330 crore (Rs.373 million), with special focus on medical education, training and research. In a significant move the new National Health Mission will combine the rural mission and the proposed urban mission and would get Rs.21,239 crore (Rs.212 million), a hike of 24.3 percent over the revised estimates. While the rural mission aims to provide better health facilities to people living in remote places, the proposed urban mission plans to provide health amenities to those in shanties in cities and towns. It is planned to focus on capacity building and training manpower for long-term gains. He proposes to provide Rs.4,727 crore (Rs.42 billion) for medical education, training and research. A national programme for the healthcare of the elderly was also being implemented in 100 select districts of 21 states. The department of AYUSH - Ayurveda, Yoga, Unani, Siddha and Homoeopathy was being allocated Rs.1,069 crore (10 billion). He also said that six All India Institute of Medical Sciences-like institutions had admitted their first batch of students in the academic session that commenced September 2012. The hospitals attached to the colleges would be functional in 2013-14. (*The Times of India* 1 March 2013; *Indian Health News* Feb 28, 2013)

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