

News in Brief

mOPV - the terminator?

In 2005 there were 66 cases of polio reported from India and data as of 15 December 2006 says there have been 597 case reported from 14 states of India, with UP accounting for 489 cases and 50 from Bihar. A crucial meeting of the India Expert Advisory panel was held on 13th December, following which it was decided to put more emphasis on the monovalent OPV (mOPV). Dr Bruce Aylward of the Global Polio Eradication Initiative announced a campaign of total sanitation with intensive use of the mOPV in Bihar and UP. There will be monthly rounds in the 2 states for the next 6 months. The efficacy of the monovalent strain over the trivalent strain had been demonstrated by Jacob John way back in 1970. The trivalent strain was epidemiologically and operationally a good vaccine to use when all 3 strains of polio were circulating. Now type 2 has not been documented since 1999 and the dominant strain is type 1. Type 3 circulates only in selected pockets in the world. About 80% of children develop immunity against type 1 virus after single dose of mOPV as against 40% after single dose of trivalent OPV (tOPV). Similarly 72% will develop immunity against type 3 virus after a mOPV as against 31% after a single dose of tOPV.

A recent study published in Science in November 2006 by Nicholas Grassly et al from Imperial College London, studies the data of all children infected with polio since 1997 and uses a computer model to analyze which factors most strongly influence the persistence of the virus in India. In UP and Bihar the poor sanitation and high population density are the main contributors. They make it more easy for the virus to spread and they also reduce the efficacy of the vaccine. Basing their calculations on the number

of times children were vaccinated they conclude that only 74% of the children under 5 were successfully immunized against the dominant strain in UP and Bihar by end of 2005 as against 85% in the rest of India. They also conclude that a carefully planned vaccination strategy with monovalent OPV will be a successful end game against polio. (<http://in.today.reuters.com/news>, <http://www.npspindia.org/wildpolio06.asp>, Science 17 November 2006; 314: 1150)

The first neural stem cell transplant

The world's first neural stem cell transplant was performed in November 2006 in Oregon in a child with Neuronal Ceroid Lipofuscinosis (NCL). The stem cell injected into the child's brain, were obtained from a company Stem Cells Inc. in Palo Alto which had purified a strain which produces the enzyme deficient in NCL. Over the next year the child will be monitored for cognition, vision and various adverse effects of the stem cells. Some of the dangers of stem cell transplants are considered the development of tumors and formation of new circuits in the brain with different activities. A month after the surgery, the child has not had any seizures which he had prior to surgery and has spoken a few new words which he was not doing earlier. However it is too early to comment on the success of the procedure. The business model of Stem Cells Inc. is to purify, multiply and freeze cells in banks for individual users. If successful, the study may pave the way for research in other diseases like Parkinson's, Alzheimer's and stroke. (Scientific American 18 December 2006, www.sciam.com)

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