

# Stem cell therapy used to cure polio

By Joanna Karpasea-Jones

Scientists at the All India Institute for Medical Sciences (AIIMS) are currently researching the use of stem cells as a treatment for polio and their study is already showing good results.

Despite vaccination, polio is still endemic in many parts of India. In an epidemic in 2008, of 203 cases of polio that had been reported, 201 cases had already been vaccinated against the disease. Health officials there say it is because so many children are malnourished. More than half (54.3 percent) of children in India suffer from malnutrition and an official there said "Undernourished children cannot produce good antibodies. As a result, the vaccine becomes ineffective."

Dr. Sathyamala, an epidemiologist, said that some children were getting repeated doses of vaccine and that it didn't work in vitamin depleted children. "Children are getting more than 25 doses. There are studies to show that in malnourished children, the vaccine can be fatal. It actually causes paralysis, so it is contraindicated in undernourished population."

In Uttar Pradesh in 2004, there were 3,789 cases of paralytic polio so the government introduced a new polio vaccine for the worst strain of the disease and gave infants six doses each. Cases of the disease then rose to 10,055 so they increased the dosage to nine doses and the following year, the disease rates increased again to 11,538.

Clearly, they needed another approach to the problem of polio. Aside from needing to tackle sanitation and malnutrition issues, medical professionals needed an effective way of treating those with post-polio paralysis. Now stem cell therapy may be the answer to this problem.

Stem cell transplants were given to children suffering from paralysis at the Ram Manohar Lohia Hospital and one of the children is no longer paralyzed.

Dr. D.K. Gupta, head of the department of pediatric surgery, AIIMS, said

"We have recently undertaken a trial where we have used stem cells in polio patients to see if they can be relieved of their paralytic state. Results have been encouraging as one of the polio patients has shown good limb movement."

The little girl was given stem cells taken from her own bone marrow, so they would not reject and have a better chance of working.

Dr. Shilpa Sharma, Assistant Professor with the Department of Pediatric Surgery at the hospital, added, "One patient, who has shown positive results in a short span of time, is now able to move her limbs. We are hopeful to get the same results for the other patients we will attempt in near future."

The researchers intend to continue studying the use of stem cells as a treatment for polio for the next three years. They hope this will lead to a cure for polio.

**Sources:** <http://www.empowher.com/poliomyelitis/content/stem-cell-therapy-used-cure-polio?page=0,1>