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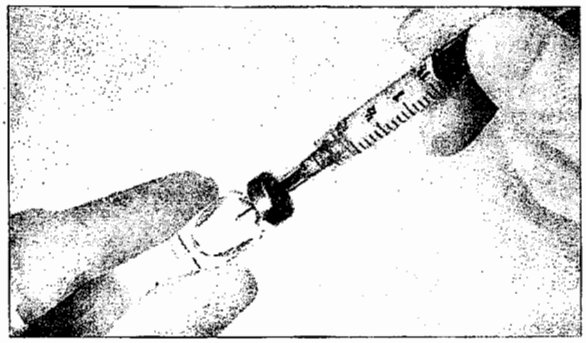
Medical breakthrough

DNA vaccine to fight kala-azar developed

Kalyan Ray



NEW DELHI: Scientists have developed a new DNA vaccine against kala-azar, a dreaded disease that remains a public health challenge in four Indian states and infects at least 5,00,000 individuals every year, mostly in Africa.

A devastating disease caused by the bites of sand flies, kala-azar is the world's second most common parasitic killer after malaria. It is fatal if not appropriately treated. As late as in 1992, it infected more than 77,000 people and killed 1,419 individuals in India. Though several vaccines against kala-azar were developed in the laboratory, none have come up to clinical trials.

The new vaccine – developed by researchers at the Indian Institute of Chemical Biology, Kolkata, along with colleagues from Patna, Germany, London, Israel and Switzerland – stands a better chance to reach human trials as it has been found safe in animals.

Even without a vaccine, the disease is restricted to only 195 blocks in Bihar, Uttar Pradesh, Jharkhand and West Bengal, thanks to a combination of drugs. In 2013, it killed only 20 and infected 14,000 Indians.

"But the vaccine is still required because the parasite is getting resistant to the drugs. Also, the drugs have toxic side effects and cause tissue damage," said Shantanabha Das, a young IICB scientist who is the first author of the research paper on the novel DNA-vaccine published in the April 30 edition of 'Science Translational Medicine'.

The disease is fatal if not appropriately treated. The treatment is often not optimal because of side effects of the drugs that turn the patients non-compliant to the treatment regimen.

Unless eliminated, Leishmania (the disease-causing parasite) infection could come back as an epidemic and spread in wider areas, said Bhaskar Saha, a senior scientist at National Institute of Cell Sciences, Punc, who is not associated with the vaccine development.

DH News Service

New drugs.

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