

Personalized immunotherapy to fight HIV/AIDS

August 15 2008

For a long time, the main obstacle to creating an AIDS vaccine has been the high genetic variability of the HIV virus. Dr. Jean-Pierre Routy and his team from the Research Institute of the McGill University Health Centre (MUHC), in collaboration with Dr. Rafick Sékaly from the Université de Montréal, have overcome this difficulty by designing a personalized immunotherapy for HIV-infected patients. The team's findings were presented on August 5 at the XVII International AIDS Conference in Mexico City.

"Our approach is unique in the world: no one else has yet developed customized immunotherapy using the virus from individual patients," said Dr. Routy. "This experimental technique remains long and costly for the moment, but we're hoping it will hold the promise of a completely innovative and widely available treatment in the future."

This immunotherapy is based on the properties of dendritic cells, whose role is to present specific proteins from infectious organisms at their surface, thereby alerting the rest of the immune system. In collaboration with Argos Therapeutics, the researchers designed a study in which the dendritic cells of nine study patients were multiplied in vitro and then treated with the RNA (ribonucleic acid) from the virus that had infected each patient. A virus sample was taken before the administration of any antiretroviral treatment.

The surfaces of these manipulated dendritic cells present an increased number of HIV proteins, which allows them to stimulate the cytotoxic

response of a certain type of immune cell called CD8+ lymphocytes. After receiving multiple subcutaneous injections of these dendritic cells, eight of the nine patients involved experienced a significant increase in CD8+ lymphocyte activity.

"At this stage, we have shown that the technique doesn't cause side effects or an undesirable auto-immune response," said Dr. Routy.

"Health Canada has approved a multicentre clinical trial across the country that will let us further assess the technique's effectiveness at controlling HIV reproduction. We're hoping that the FDA in the United States will also give us the go-ahead soon so that our pharmaceutical partner, Argos Therapeutics, can begin testing in the United States."

While more research needs to be done, this new target may lead to an innovative therapeutic approach to fight the AIDS pandemic.

Source: McGill University

Citation: Personalized immunotherapy to fight HIV/AIDS (2008, August 15) retrieved 17 April 2024 from <https://medicalxpress.com/news/2008-08-personalized-immunotherapy-hiv aids.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--