

JOURNAL of INFECTIOUS DISEASES publishes in its latest issue

## Therapeutic AIDS vaccine designed by the HIVACAT reduces the viral load in the majority of AIDS patients

- *Although the decrease is not sufficient, the first therapeutic vaccine, designed from the dendritic cells of the actual patient by the Hospital Clinic of Barcelona-IDIBAPS has achieved a significant response in the majority of patients.*
- *The objective of these types of vaccines is to facilitate the treatment of the patients and minimize the antiretroviral drugs that because of their expensive and a life long administration bring about a great economic burden.*
- *L'HIVACAT investigates the development of vaccines against HIV and forms part of the Institut de Recerca de la Sida IrsiCaixa and the Institute of Infectious Diseases and AIDS in Hospital Clinic of Barcelona, in co-ordination with Esteve, the "La Caixa" foundation, the departments of Health and Economics and Knowledge from the Generalitat de Catalunya and the Fundació Clinic.*

**Barcelona, Tuesday 1st February 2011.** The therapeutic vaccines are a priority research line of the HIVACAT, the catalan programme for the development of therapeutic vaccines and prevention against the Human Immunodeficiency Virus (HIV). This type of therapeutic vaccine helps the patients who are carriers of the virus, combat infection and control the appearance of AIDS in the same way as with the current antiretroviral treatments. The final aim of the therapeutic vaccines will be to avoid a life long treatment with antiretroviral drugs. The research team 'Infectious Diseases and AIDS' led by Dr. Josep Maria Gastell from IDIBAPS – Hospital Clínic has developed using the brand HIVACAT, a model of the therapeutic vaccine based on the patient's own dendritic cells. This reduction in the viral load is still considered to be insufficient but it is the first therapeutic vaccine which has achieved a positive response in the majority of patients.

The *Journal of Infectious Diseases* has published the results of this study with Dr. Felipe García from the Infectious Diseases Unit of IDIBAPS – Hospital Clínic, as first author and Dr. Teresa Gallart from the Immunology Laboratory of the same centre as last author. The work counted on an international collaboration with teams from France, the *Hôpital Pitié-Salpêtrière* and the *Université Pierre et Marie Curie* in Paris/INSERM, and the USA, the National Institute of Cancer in Maryland.

# HIVACAT

Projecte de Recerca de la Vacuna de la Sida

A total of 24 patients participated in this double blind clinical trial, half of whom formed the control Group and who did not receive the vaccine. None of these patients received antiretroviral treatment and to enter into the study had to maintain a good T lymphatic blood load ( $>450$  per  $\text{mm}^3$ ). The vaccine was personalized and was made from the dendritic cells of each patient sensitized in the laboratory against an inactive form of their own virus. We are looking at a cell therapy that in the ambit of IDIBAPS received support from the Cell Therapy programme of the University of Barcelona. The vaccine was administered in 3 dosis with an interval of 2 weeks between each one.

At the end of 24 weeks, it showed that the majority of patients had experienced a significant decrease in the viral load. This decrease was very significant in some of them but in no case did the virus become undetectable. However this is a very important improvement with respect to previous initiatives where with a similar vaccine there was a modest response in 30% of the treated patients. No therapeutic vaccine has achieved up to now the same level of response as in this study. A new clinical trial is underway testing the administration of the vaccine in conjunction with antiretroviral drugs to allow an improvement in the results.

The principal objective of therapeutic vaccines is to minimize the need for antiretroviral drug treatment. These treatments have improved enormously over the past few years and have become easy drugs to administer with few side effects. Although the daily administering is not ideal, there is no experience over the long term and it is not known if the treatment could bring about resistance. It aims to deal with the treatment of chronic patients for their whole life which currently is an important economic burden for the health system. The annual budget for antiretrovirals in Hospital Clinic is around 30 Million Euros. Furthermore the therapeutic vaccine is easy to produce and small administrations could be implemented in developing countries, too. To undertake this ambitious objective there has to be a continuing scientific and economic efforts in initiatives such as HIVACAT:

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