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Current strategies for HIV remission: The role of therapeutic vaccines

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Despite the clinical efficacy of cART, this treatment is unable to eradicate the infection. This limitation is because therapy cannot eliminate latent HIV-1. Furthermore, cART is incapable of restoring the immune-specific response to HIV and in fact, leads to a fall in the specific CTL response due to the lack of antigenic exposure. These findings reinforce the need for suitable long-term treatment. The concept of “functional cure” as defined as control of HIV replication without cART is based on the observation that a low proportion of HIV infected patients (termed as long-term non progressors or elite controllers) are able to control HIV replication below detectable level, without abnormalities in CD4 T-cell counts during more than 25 years. It has been proposed that strong HIV specific immune responses observed in these patients would explain this natural “functional cure”. Different types of immune-mediated therapies have been examined to improve the immune system in HIV infected patients. It seems that therapeutic vaccination is the most promising immune-based strategy. The best scenario would be that these responses could control viral replication to an undetectable level, mimicking the situation of that minority of patients who control viral replication without treatment and do not progress to AIDS. In the next future, combined approaches to reduce or control viral reservoir and vaccines to induce HIV specific immune responses, probably to new subdominant more conserved HIV targets should be explored to reach the final aim of cure of HIV-1 infection.

Biography

Felipe Garcia Alcaide is a Senior Consultant of the Infectious Diseases & AIDS unit at the Hospital Clinic of Barcelona, Associate Professor of Medicine at the University of Barcelona and Coordinator in Spain of HIV-1 vaccine research group of the Spanish AIDS Research Network. He has been Principal Investigator of more than 30 clinical trials with preventive or therapeutic vaccines or immune based therapies during the last 20 years. He has the support of a team of experts in clinical trials using immune based therapies and statisticians. He was the WP Leader of the European project MUNANOVAC and iNANODC and he is the Consortium Coordinator of the FP7 project iHIVARNA (Therapeutic TriMix/mRNA based Vaccine in Chronic HIV-1 Infected Patients on Antiretroviral Therapy).

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