POSITION

Project Title/ Job position title:

Determinants of the HIV Reservoir in Vertically Infected Children: Heading towards Erradication / Pre-doctoral Position

Area of Knowledge:

Life Science Panel:

Medicine, Public Health, Sports Science, Nutrition, Clinical Psychology, Healthcare Management

Research Project/Research Group Description

Although antiretroviral therapy (ART) has shown to reduce plasma virus levels below detection limits (≤50 copies/mL) and has drastically modified life expectancy of perinatally HIV-infected patients, it has failed to cure HIV. Administration of life-long treatment is needed to maintain viral suppression and health, and is not exempt from secondary effects and risks (emergence of resistances, toxicities leading to treatment interruption, high risk of comorbidities) and extraordinary high costs. These concerns are of paramount importance for the population of vertically infected patients, which face a whole life coexisting with the virus and its treatment. Since no effective HIV-1 vaccine is available, it appears crucial to improve ART and to develop new strategies to achieve HIV cure. Evidence suggests that latently infected T-cells constitute the main HIV reservoir, which is established early after infection. Despite effective ART, these latently infected cells remain persistently infected and unrecognized by the immune system, being currently the major obstacle to eradication of HIV. Recently, one case of HIV eradication, or at least, functional cure, has been reported in a vertically-infected child, leading to question the feasibility of achieving a functional cure in this population. Although few data are available from pediatric populations, the size of the reservoir and the dynamics over time may differ from the population infected later in life. The aim of this study is to evaluate determinants of the size of the HIV reservoir in vertically HIV-infected patients and to identify a cohort or early-treated patents with undetectable markers of viral persistence, candidates for new interventions aimed at achieving an HIV cure

This study proposal is part of the Spanish Cohort of vertically HIV-infected children and adolescents (CoRISpe), a group of multidisciplinary professionals with a large trajectory of collaborative research, and continuos public funding. Since 2009, the CoRISpe works in collaboration with the Spanish HIV Biobank located in the Gregorio Marañón Hospital. On-going research lines include the study of metabolic abnormalities, cardiovascular risk, neurocognitive disorders, co-infections, gut microbiota and vaccine response in children and adolescents perinatally infected by HIV

Job position description

The doctoral student participating in the HIV Cure Project will join the Research group, as a junior investigator starting a PhD project and will have the opportunity to participate in several studies within the group, as well as within the European Cohorts integrated in COHERE. He/She will coordinate the Spanish Cure Research project, and will be responsible for our participation in the European EPICCAL initiative for pediatric HIV Cure. He/She will have direct supervision from a postdoctoral research fellow

and a senior researcher, both experts in the field of HIV Infection. He/She will actively participate in a multidisciplinary group (CoRISpe) aiming to address the main determinants of the viral reservoir in HIV infection in children, integrated by basic and clinical researchers from different institutions, including the platform integrated by CORISPE and the HIV Biobank, The Unit of Infectious Diseases-HIV at Hospital Ramon y Cajal, and the group leaded by Dr Muñoz-Fernandez at the Immunobiology Laboratory-HGUGM, Madrid.

The ideal candidate to get involved in this project should be interested in the particular field of pediatric research. Interest in Infectious Diseases and particularly HIV Infection would be also valuable. By means of his/her participation in the study, the pre-doctoral research fellow will acquire experience in clinical research in pediatrics, as well as advanced epidemiology and statistics. The platform integrated by the Immunobiology Laboratory- HIV Biobank at the Gregorio Marañón Hospital, represent the perfect place to develop skills in basic immunology and biology lab, and offers the opportunity to deepen into the basic lab. The student will be directly involved in transport, process and storage of biologic samples, according to normalized procedures. The lab offers the necessary equipment and required software, available for research purposes.

GROUP LEADER

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Research project/Research group website:

http://idipaz.es/PaginaDinamica.aspx?IdPag=65&Lang=EN