

CHAART I (Cardiovascular Status of HAART Therapy in HIV-Exposed Infants and Children)

This is a five year prospective longitudinal multi-site cohort study of HIV-uninfected infants and children born to HIV infected mothers. Funded by the National Institutes of Health-National Heart, Lung, and Blood Institute (R01-HL072705-01), CHAART 1 aims to determine the impact of highly active antiretroviral therapy (HAART) on the developing cardiovascular system, the evolution of HAART-associated cardiovascular changes over time, and the association between cardiovascular measurements with HAART exposure through the analysis of serial echocardiograms.

The University of Miami serves as the Administrative Coordinating Center for CHAART and is led by principal investigator, Dr. Steven Lipshultz, Professor and Chair of Pediatrics, with the assistance of Dr. James Wilkinson, Professor of Pediatrics and Epidemiology and Public Health. Nationally, the study is composed of five clinical centers that include Baylor College of Medicine, University of Illinois at Chicago, Boston Children's Hospital, Boston Medical Center, and Columbia University. Through this multi-site collaboration, CHAART I successfully enrolled 167 children and obtained over 300 echocardiograms on these children up to two years of age.

As a result of CHAART I, we hope to uncover the incremental cardiovascular effects of limited exposure to HAART during early life, illuminate the aspects of the basic cellular mechanisms related to the effects of mechanical load to the heart, the contribution of HAART to active myocardial injury and levels of neurohormonal activation, in addition to the amount of cardiac inflammation associated with potential cardiotoxicity.

CHAART 2 (Cardiovascular Status of HAART Therapy in HIV-Infected Infants and Children)

This is a five year prospective longitudinal multi-site cohort study of HIV-infected infants and children born to HIV infected. Funded by the National Institutes of Health-National Heart, Lung, and Blood Institute (R01-HL078522), CHAART 2 will use the NIH-sponsored Women and Infants Transmission Study (WITS) and the Pediatric Pulmonary and Cardiovascular Complications of Vertically Transmitted HIV Infection (P2C2) HIV-Infected pediatric cohorts to determine how left ventricular function and structure are affected by cumulative intensity of exposure to highly active anti-retroviral therapy.

The University of Miami serves as the Administrative Coordinating Center for CHAART and is led by principal investigator, Dr. Steven Lipshultz, Professor and Chair of Pediatrics, with the assistance of Dr. James Wilkinson, Professor of Pediatrics and Epidemiology and Public Health. Nationally, the study is composed of seven clinical centers that include Baylor College of Medicine, University of Illinois at Chicago, Boston Children's Hospital, Boston Medical Center, Columbia University, University of Puerto Rico, and State University of New York (SUNY)-Brooklyn. Through this multi-site collaboration, CHAART 2 successfully enrolled 81 children and obtained over 150 echocardiograms on these children over the course of five years.

As a result of CHAART 2, we will know more about the cardiovascular effects of exposure to HAART during early life and will understand whether or not prevention, monitoring and therapeutic strategies are necessary. The results of CHAART 2 will allow a clear understanding of HAART-associated cardiotoxicity in the HIV-infected pediatric population.