ABSTRACT

Liver disease is a major cause of death in HIV infected persons in the United States. While advances in antiretroviral therapy have significantly reduced HIV-related mortality, co-infection with hepatitis C virus (HCV), is widespread and accelerates progression of liver fibrosis to cirrhosis and liver carcinoma. In addition, substance abuse accelerates HIV disease, and may facilitate progression of liver fibrosis. **The primary goal** of this proposal is to continue to follow the existing **M**iami **A**dult **S**tudies on **H**IV (**MASH**) cohort, its specimen repository and database, and expand it from the current 881 to 1,500 study participants. The purpose is to generate collaborative studies to investigate **the impact of cocaine**, by far the most prevalent drug of abuse in South Florida, **on HIV infection, HIV/HCV co-infection, and on long-term morbidity** with a **focus on liver disease** in this population with disparities in access to care**.** HIV and HCV un-infected cocaine users and non-users will also be recruited to allow determination of **the impact of cocaine use alone, as well as the interaction of cocaine use with HIV, HCV, and HIV/HCV co-infection.** As new and more effective treatments and access to care for HIV, HCV and drug abuse become available, maintaining a well-characterized cohort, specimen repository and database will create a strong resource platform for current and future collaborative research. Observing the uptake of new HCV treatments and potential new cocaine cessation programs in this at-risk population with health disparities will provide data on barriers and facilitators to effective treatments to prevent long-term morbidity and mortality. We have followed the MASH cohort of 881 participants for up to 12 years with excellent retention rates, and have created a specimen repository and a database. The MASH **cohort** in Miami **is unique** because it will be a mostly Hispanic cohort with a large number of African Americans, women, non-injector drug users, with predominantly heterosexual HIV-transmission etiology. We propose to (1) compare the progression of liver fibrosis over four years among cocaine users and non-users in HIV+/HCV-, HIV+/HCV+, HIV-/HCV+, and HIV-/HCV-, using a novel non-invasive diagnostic device, the Magnetic Resonance Elastography (MRE). We also propose to (2) compare the pattern over four years of biomarkers and identify genetic markers associated with the mechanisms of liver fibrosis among cocaine users and non-users. Understanding the role of cocaine use in the context of HIV and HIV/HCV co-infections and lack of lasting effects of treatments for cocaine use cessation are crucial in order to gain insights into the pathogenesis and disease outcomes, and to provide the basis for **identifying antifibrotic therapies such as oxidative stress, which are amenable to intervention**. These studies will be critical for program development, appropriate interventions, and for improving health in this population.