

THE ACUTE UFO STUDY: Acute HCV Infection in Young Injectors

PI: Kimberly Page-Shafer

CO-Is: Paula Lum, Judith Hahn, Stewart Cooper, Eric Delwart, Mike Busch

PROJECT STAFF: Research Associates: Peter Davidson, Jennifer Evans, Leslie Tobler, Paulo Telles, Wendy Hartogensis;

PROJECT STAFF: Martha Montgomery, Gina Limon, Pam Axelson, Alya Briceno, Alice Asher, Clara Brandt, Noah Gaiser, Erin Atunez, Robert Thawley, Noah Glaser, Michelle Yu. Affiliated UFO staff (UFO VAX Study): Caycee Cullen, Jamye Ford, Ro Giuliano, Nicole Tilsner.

PROJECT DESCRIPTION

This study is a four-year continuation of the Acute UFO study. Young injection drug users (IDU) constitute a distinctive high risk and understudied group with high rates of hepatitis C virus (HCV) infection. The Acute UFO study has identified 22 incident HCV infections, 19 of which are being followed prospectively. We will continue immunological studies of the spectrum of cytotoxic T lymphocyte (CTL) responses and evolution within CTL targets (“epitopes”) in early infection, to identify early correlates of viral resolution, critical for defining correlates of protective immunity and thus future vaccine development. We will now include genotype 3 infections in these analyses. We will expand our investigation of factors that may be associated with determining candidacy for early antiviral treatment. Finally, we will incorporate epidemiological and molecular virology methods to study HCV infectivity and transmission dynamics of acute HCV between young IDU in injecting and sexual partnerships using phylogenetic analyses coupled with epidemiologic data.

INTERESTING FINDINGS

Beginning 1997, young (<30 years) injectors in San Francisco have been offered participation in multiple studies under the shared title of the ‘UFO study’. Younger IDU have higher parenteral and sexual risk behaviors and higher incidence rates of HIV, HBV and HCV infection than older injectors.

The UFO Study 1997-1999: The first UFO Study was a cross sectional study conducted over the period 10/97 – 11/99. The aims of that study were to assess prevalence of HIV, hepatitis B virus (HBV) and hepatitis C virus (HCV) infections. We established high seroprevalence of HCV among young IDU. In addition we published on HIV prevalence and risk factors, high overdose rate and HBV vaccine adherence. In total 706 individuals participated.

The UFO study 1999-2002: UFO-1 and UFO-2: The first longitudinal UFO study was a 3-year NIDA funded study of HIV and HCV infections (UFO-1) and HBV immunization schedules (UFO-2). We established high rate of HCV seroconversion (25% ppy) and risk factors for HCV seroconversion, tested adherence to and efficacy of accelerated HBV vaccine schedules in a randomized controlled trial and documented high rates of overdose and risk factors for overdose. We also established the utility of using nucleic acid amplification testing for the early identification of HCV infections.

The UFO-3 Study 2002-2004: The UFO-3 study was a NIDA-funded longitudinal study and extends our successful research focused on HCV infection. The primary aims of this two year study were to study incident HCV infection, confirm the utility of NAT testing for identifying acute and serosilent HCV infection, and examine immunological correlates of viral clearance in newly infected young injectors by enrolling them into a sub-study of acute HCV infection (named Acute UFO study). HCV incidence is 31% per 100 person years of observation. As of February 2008, we enrolled 53 persons acutely infected with HCV in the longitudinal study. The median number of return visits has been four. Incidence of HCV infection remains high at an annualized rate of 31% per year.

