

Project title: Genetic polymorphisms and characteristics of social networks of people who inject drugs (PWID) in Athens

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An outbreak of HIV-1 infection among people who inject drugs occurred in Athens, Greece between 2011 and 2013. Transmission Reduction Intervention Project (TRIP) was one of the interventions to control this outbreak. TRIP aimed to reduce HIV transmission by identifying and linking to care people who had recently been infected with HIV and were probably highly infectious. TRIP participants were interviewed and nominated individuals of their social/risk network who, in turn, were invited to be interviewed, tested, and, if necessary, linked to care. TRIP, in Athens, involved data from 356 individuals with a prevalence of HIV infection at 40%. An initial social network analysis of TRIP data showed that, within a large network component of 241 people - where each member was linked directly or indirectly to any other member of the component - there was a sub-component of 29 HIV-negative participants. This sub-component of HIV-negative individuals identified in a dense network of people with a high prevalence of HIV is of particular interest and needs further investigation.

The aim of this project is to examine the potential role of genetic polymorphisms in HIV transmission among members of social/risk networks of PWID and to investigate the characteristics of these social/risk networks.

Two groups will be involved in the study: a) the group of 29 HIV-negative individuals and b) a control group of 30 HIV-positive individuals who will be randomly selected from the large component of 241 individuals. Genotype analysis will be performed for three polymorphisms of cytokine-encoding genes associated with risk of HIV infection and for two additional polymorphisms after a literature search of Genome Wide Association Studies (GWAS) and meta-analyses of GWAS. Pajek software will be used to perform social network analysis. Sub-components, k-cores, cliques, and centrality measures (degrees, betweenness, closeness) will be estimated. An attempt will be made to find and use specific statistical methods for social networks where the observations are not independent. The results could be used to design prevention projects.

The project is funded by the 2018 "Asklepios" Grant program of Gilead Sciences Hellas (www.asklepiosgileadgrants.gr) with the amount of 10,000 euros.