Yale Study Examines “Treatment as Prevention” Strategy for Elimination of Hepatitis C

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Expanding hepatitis C virus (HCV) treatment among people who inject drugs could significantly help reduce new infections of the liver virus in the United States — and could potentially eliminate HCV in at-risk populations in as little as 10 years, according to new research from Yale University recently published in The Lancet.

The strategy, known as “treatment as prevention,” or TaSP, hypothesizes that curing hepatitis C among at-risk individuals can, in the long run, help put a major dent in new transmissions of the virus. While TaSP has proved highly effective in reducing the spread of HIV, few studies thus far have investigated its efficacy with regard to viral liver disease.

For the study, infectious disease experts Alexei Zelenev, PhD, and Frederick Altice, MD, and their research team used data from 1,574 people who inject drugs to model different treatment as prevention strategies. Using five graph models, the team employed a network-based study designed to reflect how hepatitis C would spread among these high-risk social networks. They experimented with varying levels of HCV prevalence (30 percent, 60 percent, 75 percent or 85 percent) as well as treatment coverage rates (0 percent, 3 percent, 6 percent, 12 percent or 24 percent) to see which prevention strategies would work best.

Ultimately, the researchers found that when hepatitis C prevalence is higher than 85 percent in a population of people who inject drugs, treatment as prevention does not substantially reduce the spread of HCV. However, when a group’s baseline prevalence was 60 percent or lower, researchers discovered that treating 12 percent or more of individuals in the group was, in fact, effective at preventing new transmissions, with the potential to eliminate the virus completely in the group within 10 years.

Researchers also noted that assigning treatment randomly throughout the population (rather than targeting just those with the greatest number of injection partners) was the most effective strategy at preventing new transmissions. They concluded the study by stating that with sufficient expansion in treatment coverage among people who inject drugs, HCV treatment as prevention can, in fact, work.

The study was funded by the National Institute on Drug Abuse and can be accessed online here.
