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COMMENTARY

Can treatment, without prevention, eliminate hepatitis C among men who have sex with men?

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With the introduction of direct-acting antiviral (DAA) therapy for hepatitis C virus (HCV) infection came the hope that these highly effective treatments that prevent progression of liver disease would also be highly effective at preventing new infections. With this optimism, in 2016, the World Health Organization (WHO) presented a new goal, elimination of HCV as a public health threat, defined as a combination of a 65% reduction in HCV-attributed mortality and a 90% reduction in incidence of new infections by 2030.[1]

Men who have sex with men (MSM), initially those with HIV infection and more recently those receiving pre-exposure prophylaxis (PrEP) against HIV infection, have become a risk group for HCV infection over the last two decades and have therefore become a focus for elimination of HCV. Mathematical modelling studies performed to assess the effect of DAA therapy on elimination efforts among MSM predicted that a reduction in behaviours promoting transmission would also be needed to reach the WHO elimination target.[2–4] But as intrarectal deposition of seminal HCV is the primary mode of sexual transmission of HCV among MSM,[5–7] and as condom use has continued to decline with the successes of HIV treatment and PrEP, there are no available behavioural interventions for MSM to prevent HCV.

Without behavioural interventions and absent a vaccine, treatment has been the only available approach to effect elimination. In this context, Chromy and colleagues report in this issue of Journal of Viral Hepatitis[8] that after restrictions on prescribing of DAA in clinical practice were lifted in Vienna in September 2017, the annual number of primary HCV infections was higher than prior to availability of DAA, a significant proportion of these infections were in MSM without HIV infection, including those receiving PrEP, and reinfections were also common. Evaluations of incidence rates of primary HCV infection and HCV reinfection have been performed in a number of other locales, mostly in Europe and Australia, before and after restrictions on prescribing of DAA were similarly lifted, with mixed findings. For primary infection, some locales found little or no decline in rates, similar to the report from Chromy and colleagues in Vienna[9,10] and some locales found greater reductions in rates but measured only in the short term,[11–14] and in Switzerland, a longer-term reduction was found, over a period of two years.[14] For reinfections, which are a better measure of elimination efforts as they occur among those who are part of sexual networks with high HCV prevalence and participate in behaviours that mediate HCV transmission, most locales found little or no decline in rates,[9,11,14–16] with the exception of a short-term decline in the Netherlands.[13]

The lack of significant decline in primary infection rates in some locales and the lack of decline in reinfection rates in most locales are not auspicious for meeting the WHO elimination goal among MSM if we continue the current practice of relying on diagnosing and treating HCV in routine clinical care. But the successes in other locales, albeit short-term, suggest that more broad success may be possible if we improve efforts beyond what is done mostly as routine clinical care, by creating robust dedicated HCV elimination programs, which would expand HCV diagnosis and treatment by integrating public health and treatment.

The core components of a robust elimination program would be active screening coordinated with administration of treatment to minimize duration of viraemia and therefore minimize the likelihood of onward transmission, in contrast to the passive screening and uncoordinated treatment typical in clinical care. Active screening would include increased frequency of both routine and targeted HCV testing; improved case finding by using real-time phylogenetic analyses, shared among groups internationally to address the re-seeding of one locale from others[17]; and contact tracing, as we do for other sexually transmitted infections. Connecting testing and treatment, similar to the approach with HIV infection, should be a cornerstone of a robust elimination program. Point-of-care viral testing should be widely available, and a positive test followed immediately by administration of pan-genotypic DAA, which eliminates the delay of genotype testing, to significantly decrease time to treatment. Obtaining DAA through

subscription plans, in which locales purchase unlimited numbers of treatment courses for use within a defined time period, enables truly unrestricted access to DAA and creates an incentive for locales to treat infections as quickly as possible without concern about per-patient cost. Finally, a coordinated program can address and mitigate physician bias against treating HCV in patients with active substance use, who are at high risk for onward transmission. Many of these individual approaches have already been proposed or employed in different locales. Bringing them together as comprehensive, robust HCV elimination programs may help to improve upon the current efforts and hopefully meet the WHO elimination goal by 2030.

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