What is the impact of medication for opioid use disorder treatment on HIV/HCV outcomes?

Injection drug use is still a primary driver of the HIV/AIDS epidemic across the world.[56] A recent example is the small community of Austin, Indiana, where 170 new HIV infections occurred in the 8 months between November 2014 and June 2015 among people misusing the prescription opioid pain reliever oxymorphone (Opana®) via injection.[6] People who inject drugs frequently share their needles and other injection equipment, enabling viruses such as HIV and hepatitis C (HCV) to spread between people.

Medications for opioid use disorder treatment can reduce transmission of HIV and HCV by reducing risk behaviors in people who inject drugs and can improve HIV- and HCV-related outcomes by treating those not engaged in injection opioid use who might otherwise transition to injection, linking those with HIV/HCV infection to appropriate treatment,[57,58] and improving adherence to HIV/HCV treatment.[59,60] These improvements depend on accessibility of medications for opioid use disorder to people who need it and coordinating medication delivery with HCV/HIV screening and treatment.

Treatment with methadone or buprenorphine is associated with reduced injection drug use risk behaviors. Meta-analyses have shown a reduction in risk behaviors including a 32 to 69 percent reduction in illicit opioid use, a 20 to 60 percent reduction in injection drug use, and a 25 to 86 percent reduction in sharing of injection equipment.[61,62] Treatment with extended-release naltrexone also reduced HIV risk behaviors compared to placebo.[31]

Methadone and buprenorphine treatment are also associated with lower HCV infection rates in young adults who inject drugs, while other treatments and detoxification alone are not.[63] Methadone treatment is associated with low rates of contracting HCV overall,[64] with mathematical modeling suggesting that it can prevent 22.6 new HCV infections per 100 treated people who engaged in injection drug use, per year.[65,66] Methadone treatment also reduces both HIV risk behaviors and HIV infection, with better outcomes for people who inject drugs who are in treatment (3.5 percent contracting HIV vs. 22 percent), and better outcomes for longer treatment duration and for continuous (versus interrupted) treatment.[67–69]

A study comparing the effects of methadone and buprenorphine treatment on HIV risk from injection behaviors and HIV risk from sexual behaviors showed equal and significant reductions in risky injection behaviors. Risky sexual behaviors were reduced in both male and female methadone patients but were higher in male patients on buprenorphine.[70]

Mitigating Factors

There are several known interactions between medications used to treat HIV or HCV and both methadone and buprenorphine.[71,72] These could require an adjustment of dosage or revision of the treatment plan, and highlight the need for integrated care. For example, some patients are reluctant to begin highly active antiretroviral therapy (HAART) because of worries that it will interfere with their methadone treatment, so treatment providers should consider revised methadone doses for these patients.[72]

Contracting HCV while on methadone is associated with continued injection drug use.[73] Some studies have shown methadone detoxification alone to be associated with increased rates of contracting HIV, so ongoing treatment with this medication is key to reducing transmission of viral infection.[74]

Possibility of Dual Therapeutic Potential

One recent report demonstrates the potential of buprenorphine to counteract a neuroinflammatory process that is involved in HIV-associated neurocognitive disorders, suggesting that buprenorphine could potentially be simultaneously therapeutic for opioid use disorder and HIV.[75,76] Opioid use disorder medications are also associated with increased adherence to HAART for the treatment of HIV.[59,60] Some providers hesitate to treat HCV in people who inject drugs, but a naltrexone implantation clinic showed rates of sustained virologic response in their patients that were comparable to clinics treating non-injection-drug-using patients.[77]