Injectable Implant ARV

Researchers have devised a means of injecting an antiretroviral under the skin that hardens into a dissolvable and removable implant.

January 7, 2019 By Benjamin Ryan

Researchers have devised a means of injecting into the muscles a mix of an antiretroviral (ARV) and other materials that hardens into a removable implant that provides months of HIV medication as it gradually dissolves. Promising tests of this technology in mice and monkeys have raised hopes that such a drug-delivery mechanism may one day help address the problem that can compromise the efficacy of HIV treatment as well as pre-exposure prophylaxis (PrEP): poor adherence to a daily drug regimen.

Researchers designed an injectable formulation consisting of Tivicay (dolutegravir), a polymer and a solvent. They found that a single dose given to humanized mice and rhesus macaques effectively delivered the ARV, suppressed HIV and, among mice that were HIV negative, protected against multiple vaginal exposures of the virus.

Even 283 days after the injection with the ultra–long-acting Tivicay, one third of the mice still had detectable drug in their plasma.

The hardened implant was easily removed via a small incision in the skin. The implants were well tolerated in the animals, with little or no signs of toxicities.

Study author Martina Kovárová, PhD, an assistant professor at the University of North Carolina School of Medicine in Chapel Hill, says the removability of the implant “will be important in the future in case of an adverse reaction or pregnancy while the delivery system is in place. This gives the formulation a significant advantage over other long-acting injectables that are currently in clinical trials."

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