Up-and-Coming Long-Acting Treatment

A new long-acting injectables HIV drug shows promise in monkey study.

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A promising monkey study has teed up human trials of a new long-acting injectable antiretroviral (ARV) from Navigen known as CPT31.

The drug's developers hope CPT31 could be injected as infrequently as every three months and, as the research in monkeys has suggested, would work both as pre-exposure prophylaxis (PrEP) against HIV and as treatment for the virus. Human trials of the drug should be underway by the end of 2020.

"Our hope is that CPT31 will provide extended viral suppression with a lower dose and reduced side effects," says Brett Welch, PhD, a senior director of technology and strategy at Salt Lake City–based Navigen.

Welch and his colleagues injected macaque monkeys that did not have SHIV (a hybrid simian-human form of HIV) with a single dose of CPT31. A few days after the injection, they exposed the animals to a very high amount of SHIV. None contracted the virus.

The investigators found that CPT31 blocks the vast majority of HIV strains circulating around the globe.

To investigate how well the drug worked as ARV treatment, the scientists injected a single dose of CPT31 into macaques that had untreated SHIV and very high viral loads. Over the course of about 30 days, the animals' viral loads declined by about 100-fold. But during the subsequent two or three weeks, the animals' viral levels rebounded as SHIV developed resistance to CPT31.

Next, the investigators took macaques that had a fully suppressed SHIV viral load thanks to a standard ARV regimen. They injected these monkeys with CPT31, discontinued their other ARVs and continued CPT31 for an additional 12 weeks. They found that the injectable drug prevented the virus from rebounding during that time.

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