The HIV Treatment Pipeline

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“Depending on when you test positive for HIV, you could be looking at up to eight decades of treatment,” says Tim Horn of Treatment Action Group. “We need drugs that are gentler, kinder, better and cheaper.”

New antiretroviral treatments in the pipeline include:

- Two-drug oral combos. ViiV Healthcare and Janssen have begun Phase III trials of an oral two-drug regimen including Tivicay (dolutegravir) and Edurant (rilpivirine).

- Long-acting treatment. A long-acting injectable formulation of ViiV’s cabo-tegravir and Janssen’s Edurant showed promise in a recent Phase IIb study. The combo, given every eight weeks, is entering Phase III trials and may hit the market in 2019. Cabotegravir is also under investigation as PrEP, also dosed every eight weeks, with a possible approval in 2020. Much farther back in the pipeline is Merck’s MK-8591, an ARV that may require only weekly oral dosing, may permit months between injectable doses and may work as PrEP or as part of a treatment regimen.

- Monoclonal antibodies. Infusions of monoclonal, or cloned, antibodies may become an alternative to ARVs. One, called VRC01, has shown particular promise, successfully combating HIV in a Phase I study. The antibody is now in Phase III trials as PrEP (dosed every eight weeks), with results expected in 2022. Two other antibodies, including PRO 140 and ibalizumab, each recently entered Phase III trials as treatment.

- Chronic inflammation treatments. Finding ways to reduce the inflammation that’s associated with even well-controlled HIV could lower the risk of various conditions linked to aging. One major placebo-controlled trial, called REPRIEVE, is looking at whether giving people with HIV a

statin—the meds in this drug class are used to control cholesterol—may reduce their risk of disease, including heart attacks or cancer. Results are expected in 2021.

- New ARV classes. Researchers are developing maturation inhibitors, such as BMS-955176, as well as all-oral attachment inhibitors, such as fostemsavir, that work against dual-tropic HIV, meaning that the virus latches on to both the CCR5 and CXCR4 coreceptors on immune cells. The sole approved oral attachment inhibitor, Selzentry (maraviroc), works only for CCR5-tropic virus.

- Generic combo tablets. With several ARVs losing patent protection in the coming years, generic manufacturers will start producing all-generic combination tablets in the United States. Big questions include whether generics will actually be much cheaper and whether insurers will give them preference over brand-name drugs even if the latter drugs have lower toxicities. There may also be mixed combo tablets containing both generics and brand-name drugs.

- Cure. A small army of scientists is exploring multiple avenues toward giving HIV an utter KO. A combination approach will likely be necessary for success. Generally, experts believe that a cure is many years, if not decades, away. In the interim, this field of study may produce ways to improve on existing treatments and further mitigate the harmful effects of the virus.

To read the related article, “Antiretrovirals: a Success Story,” which looks back at 20 years of effective combination HIV treatment, click here. And to read another related piece, “Milestones in the Era of Effective HIV Treatment,” click here.

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