NEW HIV DRUGS AT CROI 2017

By Lynda Dee

There were a number of interesting new HIV drug presentations at Conference on Retroviruses and Opportunistic infections (CROI) 2017 held in Seattle, WA from February 13 thru 16, 2017. These studies ranged from two drug combinations for HIV to new long-acting drugs that are administered by injection once monthly and an entirely new class of drug to fight HIV.

Tivicay is a very powerful HIV integrase inhibitor that was tested alone against HIV. Unfortunately, Tivicay alone was not effective against HIV, producing a rate of 9% resistance as opposed to Tivicay plus 2 or 3 drug combinations that only showed a rate of 1% HIV resistance to the combinations. This result was not unexpected as we have known for many years that more than one drug in our current HIV drug arsenal is necessary to effectively combat HIV.

The results of a maintenance study using Tivicay plus Endurant, a non-nucleoside inhibitor (NNRTI), were much more successful. One thousand participants in two studies taking 3 or 4 drugs were switched to Tivicay plus Endurant and maintained undetectable viral loads on the two drug combination for 48 weeks, leading researchers to conclude that the combination of Tivicay plus Endurant is not inferior to 3 to 4 drugs at 48 weeks.

Viral loads and side effect profiles were similar in both groups. Non-serious nose and throat inflammation, headaches, diarrhea and upper respiratory infections were more prominent in participants on Tivicay plus Endurant. Using 2 drugs instead of 3 could revolutionize side effects as well as the expensive cost of long-term HIV therapy.

Bictegravir, a new Integrase inhibitor, is being studied versus Tivicay with all participants also taking Descovy. Bictegravir does not require boosting with another drug to make it effective against HIV which should result in less side effects. It also has a good resistance profile and drug-drug interaction profile (how one drug affects the other when they are taken together). Tivicay was 94% effective against HIV at week 24 and had 91% effectiveness at week 48. Bictegravir was 97% effective at both weeks 24 and 48 and resulted in CD4

increases of 248 versus only 192 with Tivicay. Nausea and diarrhea occurred in both arms and markers for kidney side effects were decreased in both arms.

Ninety-six week data was presented in participants on doravirine, a new NNRTI, versus Prezista plus Norvir and Truvada or Epzicom also being taken in both study arms. Doravirine is being developed in hopes of replacing Sustiva, another NNRTI that can have serious central nervous system side effects. There was an 84% viral load decrease in participants in the doravirine arm versus an 80% drop in the Prezista arm at week 48. CD4 T cells also increased by 193 with doravirine versus 186 in the Prezista arm. There were similar side effect profiles in both arms. Rash or neuropsychiatric symptoms typically seen with Sustiva were uncommon in both arms. But the jury is still out on whether doravirine will be as effective against HIV resistance as Sustiva. Doravirine is currently being co-formulated with 3 other drugs for study.

A new class of drugs called Capsid inhibitors which interfere with HIV disassembly early in the HIV life cycle and assembly late in the HIV life cycle has been under study by Gilead Sciences for the last 10 years. This new class of drug may also be more powerful than drugs in our existing HIV armamentarium. Although there appears to be a high resistance barrier to HIV, resistance was detected.

The current drug in this class being studied is known as GS-CA1. It has a long half-life and can be administered by either long-acting intravenous (in the vein) or SubQ injections (in the arm muscle). Once monthly animal studies with a single SubQ injection are currently underway.

A once monthly long-acting intramuscular injection (in the buttocks) combination of long-acting cabotegravir plus Endurant is planned after both drugs were successfully combined and administered orally, resulting in no detectable viral loads for 144 weeks. Participants will first receive cabotegravir orally to be sure no side effects occur before long-acting cabotegravir in injected.

This is a very exciting time for new HIV drugs. These new drugs may lead to less side effects, more powerful drugs to combat HIV, the use of only 2 drugs instead of 3 or 4 and long-acting injectable drugs that are administered once monthly. Stay tuned for more information on the progress of these exciting new drugs that may be easier to take for some and may also result in less side effects.