Doravirine (Pifeltro)

Table of Contents

- Doravirine Pifeltro Editor's Summary
- Drug Summary
- Key Clinical Trials
- Adverse Effects
- Resistance
- Key Drug Interactions

Drug Summary

Doravirine is a non-nucleoside reverse transcriptase inhibitor (NNRTI) that is well tolerated and dosed once daily, with or without food. Doravirine is indicated in combination with other antiretroviral agents for the treatment of adult patients with HIV who have no prior antiretroviral treatment history. Doravirine retains activity in the presence of common NNRTI drug-resistant mutations (e.g. K103N, Y181C, G190A) and thus may have clinical utility for individuals with resistance to other NNRTIs, depending on the specific NNRTI mutations present. Treatment failure with doravirine can result in emergence of resistance-associated substitutions that may confer cross-resistance to efavirenz, etravirine, nevirapine, and rilpivirine. Unlike the NNRTI rilpivirine, there are no CD4 count or HIV RNA level restriction for the use of doravirine. In addition, doravirine does not have restrictions for use in combination with proton pump inhibitors. Importantly, doravirine in combination with two NRTI’s was studied in head-to-head randomized clinical trials as a comparison to efavirenz plus two NRTI’s or boosted darunavir plus two NRTI’s, but doravirine has not been studied head-to-head versus integrase inhibitors. In addition, the only single-tablet coformulation with doravirine includes the NRRI backbone tenofovir DF-lamivudine (as opposed to tenofovir alafenamide-emtricitabine), which may limit its utility. Overall, doravirine is a well-tolerated NNRTI that currently is indicated for use only in antiretroviral-naive individuals, but, in the future it is likely that doravirine will be used more often for antiretroviral-experienced individuals, especially those with resistance to NNRTIs.

Key Clinical Trials

In the phase 3, randomized-controlled DRIVE AHEAD trial, investigators compared doravirine-tenofovir DF-lamivudine to efavirenz-tenofovir DF-emtricitabine as therapy for treatment-naive individuals DRIVE AHEAD. A total of 364 adults were randomized to each arm and 48 weeks results demonstrated non-inferiority of the doravirine regimen by FDA snapshot (proportion of participants with HIV RNA below 50 copies/mL was 84.3% in the doravirine arm versus 80.8% in the efavirenz arm by intention-to-treat analysis). Results also showed that less rash, central nervous side effects, and lipid changes occurred in the doravirine arm and there were overall fewer treatment discontinuations due to adverse effects as compared to the efavirenz arm. In the phase 3 DRIVE FORWARD study, doravirine was compared to ritonavir-boosted darunavir as initial antiretroviral therapy, each with two NRTIs DRIVE FORWARD. In the primary analysis, there were 383 participants...
in each arm; at 48 weeks, doravirine was non-inferior to ritonavir-boosted darunavir (HIV RNA less than 50 copies/mL in 83.8% versus 79.9%, respectively). Overall rates of drug-related adverse events were similar between the two arms, though lipid parameters were more favorable in the doravirine group. In the open-label, active-controlled, non-inferiority DRIVE SHIFT trial, investigators enrolled 670 adults who had suppressed HIV RNA levels for at least 6 months and randomized them (2:1) to switch to once-daily single-tablet regimen of doravirine plus tenofovir DF plus lamivudine or to continue on their current antiretroviral regimen DRIVE SHIFT. Participants enrolled were taking two nucleoside reverse transcriptase inhibitors (NRTIs) plus either (1) a boosted protease inhibitor, (2) boosted elvitegravir, or (3) a non-nucleoside reverse transcriptase inhibitor.

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**Adverse Effects**

The adverse reactions that have occurred in 5% or more of persons taking doravirine are nausea, dizziness, headache, fatigue, diarrhea, abdominal pain, and abnormal dreams.

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**Resistance**

For a listing of the most common clinically significant mutations associated with doravirine (DOR) resistance, see the [NNRTI Resistance Notes on the Stanford University HIV Drug Resistance Database](https://hivdb.stanford.edu). 

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**Key Drug Interactions**

For complete information on doravirine-related drug interactions, see the [Drug Interactions section in the Doravirine (Pifeltro) Prescribing Information](https://www.hiv.uw.edu/page/treatment/drugs/doravirine).