

Frequently Asked Questions

Darunavir-Ritonavir (DRV/r) 400/50 mg Tablets

1. What are protease inhibitors?

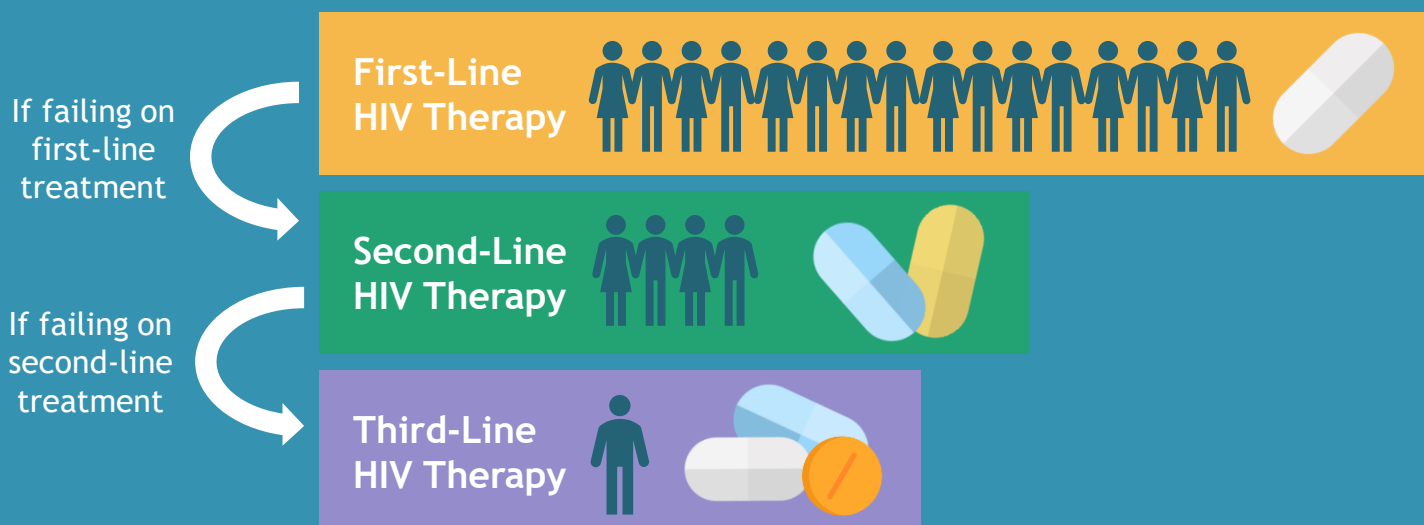
In the body, HIV undergoes a series of steps in order to replicate and spread further. Every antiretroviral (ARV) drug works by blocking a particular step in this process, which prevents HIV from replicating and spreading. One of the steps in this process involves something known as “protease”. Protease inhibitors (PIs) are the category of ARVs that prevent or inhibit protease from working correctly (thus stopping HIV’s replication). The three most common PIs are darunavir (DRV), lopinavir (LPV or ‘Kaletra’), and atazanavir (ATV).

Protease inhibitors need to be taken with a “booster” called ritonavir (RTV), which is also abbreviated with a lowercase ‘r’. This is why you may see ‘/r’ after the ends of the drug names such as DRV/r, ATV/r, or LPV/r. Without a booster, PIs are weaker in their ability to kill HIV. Boosting with ritonavir, which is also a PI, is therefore needed to strengthen the main protease inhibitors.

2. What is “treatment failure” and what are the different lines of therapy?

Treatment failure occurs when an HIV medication no longer works to control the virus and can be caused by adherence issues or by drug resistance (drug resistance is caused by changes to HIV’s body). If treatment failure occurs, new HIV medications are needed to keep the virus under control.

The first HIV medications taken by a person living with HIV are called “first-line”. If treatment failure occurs, the person will need to take new medications which are referred to as “second-line”. Some people may need “third-line” treatment if they experience treatment failure on second-line, although this is a very small number of people.



3. What is darunavir (DRV)?

Darunavir (DRV) is an ARV that helps control HIV when taken together with other ARVs. DRV is safe, potent, and can work for a long time if taken every day. DRV is part of the “protease inhibitor” category of ARVs.

4. What is DRV/ r (400/50 mg)?

DRV/r (400/50 mg) is a new DRV product specifically developed for use in second-line HIV treatment, and contains both darunavir and ritonavir in the same pill. It can be used by people who have never taken a protease inhibitor (such as LPV/r or ATV/r) before, or by people who have had resistance testing and do not have resistance to protease inhibitors.



5. How is DRV/r (400/50 mg) dosed?

DRV/r (400/50 mg) is taken as two tablets once a day (second-line use) and must be taken with other ARVs. Remember that HIV treatment is only complete if it is made up of at least three ARVs.

Number of Daily Tablets
DRV/r (400/50 mg)

6. What does DRV/r (400/50 mg) cost?

DRV/r (400/50 mg) currently costs US \$17.50 per pack of 60-tablets, which lasts for one month. This is slightly less expensive than LPV/r (200/50 mg), which is a widely used second-line ARV that is less potent and less tolerable than DRV/r (400/50 mg).

7. What are the benefits of DRV/r (400/50 mg)?

Compared to other protease inhibitors, DRV/r is better at controlling HIV and is more tolerable with fewer side effects. DRV/r also has a lower pill burden than LPV/r because only two tablets need to be taken once a day compared to two tablets twice a day with LPV/r.



Higher barrier to resistance



Better tolerability than LPV/r and ATV/r



Improved viral suppression from LPV/r



Slightly cheaper than LPV/r



Lower pill burden than LPV/r

8. How does DRV/r compare to other PIs used in LMICs?

Compared to LPV/r, DRV/r is better at controlling HIV (more effective) and is more tolerable with fewer side effects. Compared to ATV/r, DRV/r is equally as effective at controlling HIV but is more tolerable (ATV/r can cause the eyes to become yellow due to jaundice).

An additional benefit of DRV/r over LPV/r and ATV/r is that DRV/r can be used again in third-line treatment even if someone has previously taken a protease inhibitor and has experienced treatment failure. When taken after treatment failure on a different protease inhibitor, DRV/r is taken at a higher dose (1,200 mg of darunavir and 200 mg of ritonavir daily).

9. What does the WHO currently recommend regarding DRV/r in second-line?

The WHO currently lists DRV/r as an alternative option for use in second-line HIV treatment following failed treatment on dolutegravir (DTG). However, it is only listed as an alternative because, until recently, there has not been an affordable product available combined with ritonavir. The alternative recommendation in this case is not at all related to DRV/r’s efficacy or tolerability compared to other options; in fact, DRV/r is more effective and tolerable than other protease inhibitors.



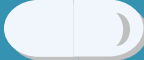

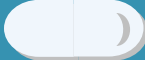
10. Should someone take DRV/r or dolutegravir for second-line HIV treatment?

Dolutegravir (DTG) is the preferred ARV for use in second-line treatment because it is very effective, has few side effects, and is relatively inexpensive. However, people will need a new ARV if DTG fails. DRV/r is the best option for people on second-line treatment who have already taken DTG or do not tolerate it.

11. Should DRV/r be saved for third-line treatment?

DRV has historically only been reserved for use in third-line treatment due to its previously high price. However, now that an affordable product is available, DRV/r no longer needs to be reserved for use in third-line. Additionally, given how potent and tolerable DRV/r is, using it in second-line may prevent people from needing third-line treatment.

If DRV/r is used in third-line it must be at a higher dose (1,200mg of darunavir and 200mg of ritonavir daily), and the DRV/r (400/50 mg) formulation cannot be used.

Second-Line DRV/r Dose	Third-Line DRV/r Dose	
AM Dose	AM Dose	PM Dose
DRV/r (400/50 mg) 	DRV (600 mg)  RTV (100mg) 	DRV (600 mg)  RTV (100mg) 

12. Can patients stable on other protease inhibitors be switched to DRV/r (400/50 mg)?

Yes, people who are currently taking other protease inhibitors and are virally suppressed can be switched to DRV/r (400/50 mg). However, this may depend on an individual’s clinical history and should be discussed with a clinician/care provider.

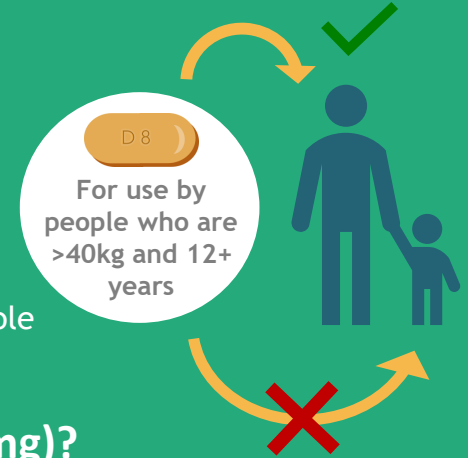
13. What are some common side effects of DRV/r?

All ARVs have side effects, though some have more frequent and more severe side effects than others. Fortunately, DRV/r has less frequent and fewer side effects than either LPV/r or ATV/r and has been generally well-tolerated in clinical trials/research.

The most common side effects of DRV/r are gastrointestinal, including nausea, vomiting, abdominal pain, and diarrhea, but these are less common with DRV/r compared to LPV/r. Skin rashes can sometimes appear, but typically are minor and go away in a few days to a week after starting treatment with DRV/r

14. Can children take DRV/r (400/50 mg)?

This formulation of DRV/r (400/50 mg) is not suitable for children and can only be used by people who weigh more than 40kg and are older than 12 years of age. There are other formulations of DRV that can be taken by children older than 3 years of age, but they are not currently available as low-cost generics.



15. Can pregnant women take DRV/r (400/50 mg)?

There have not been large clinical trials (research) looking at the use of DRV/r among pregnant women and so clinical recommendations vary. Pregnant women, or women who may become pregnant, wishing to start taking DRV/r should have a conversation with their care provider discussing the benefits and potential risks of DRV/r use during pregnancy. Your country's HIV treatment guidelines will guide the care provider's decision largely based on a pregnant woman's viral load status and her adherence history.

16. Can people being treated for tuberculosis (TB) take DRV/r (400/50 mg)?

DRV/r cannot be taken at the same time as rifampicin which is a common medicine used to treat tuberculosis. DRV/r can be taken at the same time as rifabutin, but rifabutin is often unavailable in low- and middle-income countries.

It is not advised to take DRV/r with rifapentine, which is a component of many new tuberculosis prevention regimens including 3HP and 1HP.

If you are taking DRV/r and diagnosed with TB, your HIV medication should be switched to DTG (50 mg twice daily) or LPV/r (800/200 mg twice daily) for the duration of rifampicin-based treatment and promptly switched back to DRV/r two weeks after TB treatment.

For more information on DRV/r (400/50 mg), talk to your healthcare provider!