



RITONAVIR (Norvir)

WHAT IS RITONAVIR?

Ritonavir, also called Norvir®, is a drug used for antiviral therapy. It is manufactured by Abbott Laboratories. Ritonavir is a protease inhibitor. These drugs prevent the protease enzyme from working. HIV protease acts like a chemical scissors. It cuts the raw material for HIV into specific pieces needed to build a new virus. Protease inhibitors “gum up” these scissors.

WHO SHOULD TAKE RITONAVIR?

Ritonavir was approved as an antiviral drug for adults and children with HIV infection. Most doctors start antiviral therapy when a person has some symptoms of HIV disease, has a T-cell count (CD4+ cells) below 350, or has a viral load (a measure of the amount of virus in the blood) over 30,000.

There are no absolute rules about when to start antiviral drugs. Some people want to “hit HIV hard and early”, starting with the most powerful drugs to preserve the immune system. Others want to save the strongest drugs until they are needed, later in the course of HIV disease. You and your doctor should consider your T-cell count, your viral load, any symptoms you are having, and your attitude about taking HIV medications.

If you take ritonavir with other antiviral drugs, you can reduce your viral load to extremely low levels, and increase your T-cell counts. This should mean staying healthier longer.

Ritonavir makes the liver work more slowly. This can increase the blood levels of some drugs, including other protease inhibitors. Some doctors combine ritonavir with other protease inhibitors to produce better blood levels.

WHAT ABOUT DRUG RESISTANCE?

The HIV virus is sloppy when it makes copies of its genetic code (RNA). Many new copies of HIV are mutations: they are slightly different from the original virus. Some mutations can keep multiplying even when you are taking an antiviral

drug. When this happens, the drug will stop working. This is called “developing resistance” to the drug.

If you take a protease inhibitor by itself, resistance develops within one month. When you take more than one antiviral drug at the same time, HIV mutates much more slowly and it takes much longer for resistance to develop.

Sometimes, if you develop resistance to one drug, you will also have resistance to other antiviral drugs. This is called “cross-resistance”.

Resistance can develop quickly. It is very important to take protease inhibitors according to instructions, on schedule, and not to skip or reduce doses.

HOW IS RITONAVIR TAKEN?

Ritonavir is taken by mouth as a liquid or capsule. The normal dose is 600 milligrams (mg) twice a day. The capsules are 100mg, so you will take 6 capsules every 12 hours. Ritonavir should be taken with meals, if possible.

Ritonavir is sometimes combined with other protease inhibitors. These combinations might use a different amount of ritonavir. Be sure you know how much ritonavir you are supposed to take.

During 1998, Abbott Laboratories noticed problems with the original ritonavir capsules. Production was stopped. Everyone taking ritonavir had to take the liquid form. Many people think the liquid version tastes bad. However, some people find the liquid more convenient. It will still be available.

Liquid ritonavir comes with a measuring cup. It takes 7.5mL (milliliters) of liquid (1-1/2 teaspoons) to equal the normal dose of 600 mg. The liquid version should **not** be refrigerated. Shake the bottle before taking each dose.

Your pharmacist must keep the new ritonavir soft-gel capsules refrigerated. You should keep ritonavir in your refrigerator, but it can also stay out at

room temperature (below 77 degrees F, or 25 degrees C) for up to 30 days.

WHAT ARE THE SIDE EFFECTS?

The most serious side effects of ritonavir are nausea, vomiting, gas, and diarrhea. Some people also experience tingling or numbness around the mouth, or find that foods taste strange. Side effects made almost one-third of people stop taking ritonavir.

For many people, the side effects of ritonavir lasted only 2 to 4 weeks. If they lasted beyond 4 weeks, in most cases they were permanent.

To reduce stomach upset with ritonavir, the manufacturer recommends starting with half the usual dose and increasing the drug on the following schedule:

Day 1: 300mg every 12 hours
Days 2-3: 400mg every 12 hours
Day 4: 500mg every 12 hours
Day 5 and after: 600mg every 12 hours

HOW DOES RITONAVIR REACT WITH OTHER DRUGS?

Ritonavir is broken down by the liver. It can interact with other drugs that use the liver. **Combining these drugs can change the amount of each drug in your bloodstream and cause an under- or overdose. Drugs to watch out for include Viagra, several antihistamines, sedatives, drugs to lower cholesterol, and anti-fungal drugs. Make sure that your doctor knows about ALL drugs you are taking.**

If you are taking ritonavir and ddl, you should take them 2-1/2 half hours apart.

Some birth control pills may not work if you are taking ritonavir. Talk to your doctor about how to prevent an unwanted pregnancy.

The herb St. John's Wort (See Fact Sheet 729) lowers the blood levels of some protease inhibitors. Tell your doctor about any herbs or other supplements that you use.

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