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An HIV Information Site & HIV Educational Resource Site (HIS & HERS)

Fortovase - Invirase - saquinavir

General Information

Saquinavir (Fortovase or Invirase) is always used as one component of a multidrug combination to suppress the human immunodeficiency (HIV) viral load.

Specifics

Saquinavir is the oldest protease inhibitor and one of the older antiviral drugs against HIV, and it is still being taken by many persons.

Saquinavir works by inhibiting the production of HIV's proteins. It is classified as a protease inhibitor (PI).

Dosing

There are several ways to take saquinavir, both as the only protease inhibitor in a combination of antivirals and mixed with other protease inhibitors.

The soft gel cap form of saquinavir (Fortovase) is better absorbed and is the form that is used when saquinavir is not given with another protease inhibitor such as ritonavir (Norvir), lopinavir/ritonavir (Kaletra), or indinavir (Crixivan). If another protease inhibitor is used, than the hard gel cap form (Invirase) is usually used.

If the hard gel form (Invirase) is used **WITHOUT** another protease inhibitor, not enough saquinavir may be absorbed into your system and this drug may not be effective and HIV may development resistance to this drug and other protease inhibitors.

This combination of ritonavir and saquinavir is termed "boosted saquinavir" because ritonavir increases the levels of saquinavir in the bloodstream. This boosted dosing is used when saquinavir is combined with nevirapine (Viramune) or efavirenz (Sustiva) or one must increase the dose of indinavir (Crixivan).

Without boosting with ritonavir or another protease inhibitor:

Take Fortovase soft gel caps 200 mg 6 three times a day with food. Fortovase must be taken with food or the absorption is poor which may cause the problems mentioned above (poor effectiveness and possible resistance to saquinavir and other protease inhibitors)

With boosting with ritonavir or another protease inhibitor:

Take Invirase 200 mg hard gel caps 5 twice a day plus ritonavir 100 mg one twice a day, both with food

Other medications may not mix well with saquinavir including some anticholesterol drugs, drugs for erection problems, blood thinners, herbal products, and antibiotics. Make sure your healthcare providers knows all the medications you are taking including any herbal and over the counter medications.

As with any antiviral drug or antibiotic, try not to ever miss a dose. If you miss doses or do not take the correct dose, you could lose the effectiveness of this medication or all of your medications, and HIV could become resistant to them all.

If you miss a dose and notice that you have done so within a few hours of its scheduled time, you may take the dose as usual and take the next dose at its regular time.

If you miss more than one dose, look at the reasons why you missed them and come up with a plan to avoid it in the future. For example, if you fell asleep too early, take the medicine earlier in the evening, with your later meal, set an alarm, or have someone appointed to wake you up for your medicine.

It is strongly recommended that you consider using weekly pill boxes and arrange all of your doses a week in advance. Buy a small pill box so that you can carry a dose or two of your medicines with you in case you are away from home.

Fortovase should be stored in a refrigerator.

Adherence

(this refers to your willingness, ability, and actual performance in taking your medications)

Most people take saquinavir without many side effects.

Possible side effects stomach upset, diarrhea, nausea, liver problems, increased fat (cholesterol and triglycerides) in the blood, and possibly diabetes. Fortovase seems more likely to cause diarrhea and belly pain.

Usually you will have blood tests done in the first month to look for the beneficial effects of saquinavir and any side effects.

Many minor side effects will either stay constant or get better with time. It is mainly the side effects that are severe or get worse that may cause significant health risks for you.

Possible Side Effects

The package insert for most drugs including saquinavir is often overwhelming and scary with perhaps an overemphasis on side effects. We have

summarized the important and more common problems here.

All drugs of this type can cause or contribute to abnormal fat redistribution characterized by an enlarged belly, thinning of the face, arms, or legs. In most cases this would be also accompanied by elevated cholesterol levels, elevated triglyceride levels, and perhaps a tendency to develop diabetes. To help minimize these possible problems, try to eat a healthy diet and get some exercise. If you are gaining weight, it is not just caused by the medications; it is also due to eating too many calories for your level of activity. Eat less and move more!

Interactions

This refers to the way that saquinavir affects other medications

Many other drugs have interactions with saquinavir that may be helpful, harmful, or even deadly.

Make sure that you tell your healthcare provider about all of your medications including over-the-counter ones.

Some medications should NOT be taken at all with saquinavir:

Antihistamines: terfenadine (Seldane), astemizole (Hismanal)
 Drugs to increase esophagus and stomach movement: cisapride
 Drugs to regulate heart rhythm: amiodarone (Carderone, Pacerone), quinidine (Quinidex), flecainide (Tambocor), propafenone (Rhythmol, Rhythmol SR), bepridil
 Ergot derivatives for migraine headaches: dihydroergotamine (D.H.E. 45), ergonovine, ergotamine, methylergonovine (Methergine)
 Drugs to treat mental health problems (Tourette's syndrome): pimozide (Orap)
 Sedatives/sleeping pills: midazolam (Versed), triazolam (Halcion)
 All statins (drugs to decrease cholesterol) other than atorvastatin (Lipitor), pravastatin (Pravachol)
 Natural remedies: St John's wort, garlic capsules
 Tuberculosis treatment: rifampin (Rifadin, Rimactane, Rifamate)
 Drugs to prevent seizures: carbamazepine (Tegretol), phenobarbital

Certain drugs should be used only very cautiously:

Drugs to prevent seizures: phenytoin (Dilantin)
 All erectile dysfunction drugs: sildenafil (Viagra), tadalafil (Cialis), vardenafil (Levitra)
 Drugs to prevent rejection of transplanted organs or bone marrow: cyclosporine (Neoral, Sandimmune), tacrolimus (FK506, Prograf), sirolimus (Rapamune)
 Drugs to treat mycobacteria or TB-like infections: Rifabutin (Mycobutin)
 Pain medication: methadone (Dolophine, Methadose)
 Oral contraceptive pills (another form of contraception should be used in addition)
 Statin drugs: atorvastatin (Lipitor), pravastatin (Pravachol)

Report to you healthcare provider or go to an Emergency Room if you have severe side effects, increasing side effects, shortness of breath, uncontrollable diarrhea, fever, rash, weakness, jaundice (eyes and skin turn yellow,) muscle pain, nausea and vomiting so that you cannot hold down your food and liquids.

You can download this handout in PDF format by clicking [HERE](#).

You can download the handout for Invirase from the drug company [HERE](#).

11.10.2004