Resistance

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HIV can become resistant to the drugs used to treat it. This is because HIV changes, or mutates, slightly every time it reproduces itself. Some of these mutations are in the part of the virus that is targeted by anti-HIV drugs and can mean that anti-HIV drugs don't work as well against some strains of the virus.

How to reduce your risk of resistance

The most important thing you can do to reduce your risk of developing drug resistance is to take your HIV treatment properly. Taking your treatment properly is often called adherence, and it's been shown that you need to take all, or nearly all, your doses of anti-HIV drugs correctly to give your treatment the best chance of working.

Good adherence includes taking all your doses at the right time, in the right amount, and in the right way (for example, taking with or without food as instructed). It's also important to make sure that you avoid taking your anti-HIV drugs with other medicines or drugs that can interfere with the way your body processes them. Your HIV doctor or pharmacist will check for this and it is important to tell them about anything you are taking.

Poor adherence can mean that there's not enough medicine in your body to fight HIV, and this can mean that strains of the virus that have resistance to anti-HIV drugs can reproduce and become the main strain of HIV in your body.

Getting your viral load to undetectable levels means that you have a very low risk of developing drug-resistant HIV. For that reason the aim of HIV treatment is an undetectable viral load. Undetectable viral load is usually defined as below 50 copies/ml. Until recently, this was the lowest detectable level for tests most commonly used in routine viral load monitoring. There are now some ultra-sensitive tests that can measure below 20 copies/ml.

Also, people whose viral load remains high or rebounds whilst taking anti-HIV drugs may still experience a sustained rise in CD4 count, and delayed disease progression, though the reason why this occurs is not well understood. Whilst resistance is one reason for viral load rebound, it is not the only reason.

Resistance tests

You should have a test to check for drug-resistant HIV before you start HIV treatment, or if your viral load increases and you need to change treatment.

About 10% of new infections with HIV involve virus that is resistant to one or more anti-HIV drugs. This can limit HIV treatment options.

The results of these tests can help you and your HIV doctor choose the anti-HIV drugs with the best chance of working against your HIV.

Cross-resistance

If you develop resistance to one anti-HIV drug then there is a chance that you'll also have developed resistance to other drugs that you haven't yet taken, if they work against HIV in a similar way. This is called cross-resistance.

Changing treatment because of resistance

If your viral load increases it is generally recommended that you change to a completely new combination of anti-HIV drugs. The results of your resistance test will help guide the choice you and your doctor make.

Newer types of anti-HIV drug have been developed called entry inhibitors and integrase inhibitors. They work in a different way to existing anti-HIV drugs and this means that they can be important new treatment options for people who have taken a lot of anti-HIV drugs in the past.

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