Lipodystrophy (changes in body shape)

Created *6 Jan 2009 - 11:47am*

A significant side effect [1]An unwanted effect caused by the administration of drugs. Onset may be sudden or develop over time. linked to antiretroviral treatments is a condition known as lipodystrophy. The term refers to the unusual or abnormal distribution of fat throughout your body and is linked to particular classes of drugs – protease inhibitors are associated with fat accumulation (lipohypertrophy, where fat accumulates around the trunk of the body, the breasts and sometimes the upper back) and nucleoside reverse transcriptase inhibitors are linked with lipoatrophy (fat loss from limbs, face and buttocks).

Increasingly the two patterns of fat changes (loss in some areas and gains in others) are seen as distinct. Not everyone taking drugs from these classes will get the conditions (the estimation is that about 20% of people with HIV will experience this, and women are more likely to than men), and certain drugs are more closely associated with the conditions than others. Fat accumulation tends to appear more quickly than fat loss, but both syndromes tend to emerge relatively slowly.

The strongest associations with specific drugs are d4T with lipoatrophy and ritonavir with lipohypertrophy. The drug d4T is very rarely prescribed now in Australia because of this association and because there are other drugs available that can give the same antiviral [2]A medication or substance which is active against one or more viruses. May include anti-HIV drugs, but these are more accurately termed antiretrovirals. control without this side effect [3]

Older protease inhibitors such as indinavir, nelfinavir and saquinavir are also associated with fat accumulation, while the older nucleoside analogues [4]A type of anti-HIV drug that works by inhibiting a stage of the HIV life cycle called reverse transcription. Non-nucleosides work in a similar way, but are chemically different. including AZT and ddI are related to fat loss. If you are taking any of the drugs in this list you may want to be monitored for signs or symptoms of body fat changes. The NNRTI drug efavirenz has also been associated with lipodystrophy, particularly with breast enlargement.

Recent research shows that lipodystrophy appears to be more prevalent in women than in men and arguably the negative effects of changes in body and face shape are experienced more acutely, because such societal emphasis is placed on women's appearance. The fat accumulation associated with protease inhibitors may increase fat deposits around your trunk and sometimes on the back of the neck, and breasts can become enlarged. At the same time you may lose fat from your arms, legs, bottom and face. This can be distressing. The physical appearance of lipodystrophy may be mild, moderate or severe.

While the exact mechanisms that cause lipodystrophy are imperfectly understood, the changes are not simply cosmetic, but are accompanied by underlying metabolic changes in the way that the body processes fats and sugars. There is evidence that this increases women's risk of cardiovascular disease (heart attack [5]A life-threatening emergency in which the blood supply to the heart is suddenly cut off, causing the heart muscle (myocardium) to die from lack of oxygen. and stroke). Women who are taking anti-HIV drugs associated with fat accumulation and higher levels of fats in the blood (lipids) need to be monitored and a change of HIV drugs or specific lipid-lowering agents may be required. If you are taking protease inhibitors, ask your doctor to regularly monitor your blood fats [6]A type of fat in the blood. Elevated triglyceride levels may be a side effect of some anti-HIV drugs., glucose and cholesterol [7]An essential component of cell membranes and nerve fibre insulation, cholesterol is important for the metabolism and transport of fatty acids and the production of hormones and Vitamin D. Cholesterol is manufactured by the liver, and is also present in certain foods. High blood cholesterol levels have been linked to heart disease and may be a side effect of some anti-HIV medications. levels for any changes.

Regarding the processing of sugar, the evidence is less clear. Women with HIV taking treatments have high rates of blood sugar abnormalities (such as insulin resistance [8]A diabetes-like condition in which, while adequate amounts of insulin are produced by the pancreas, the body does not respond normally to the action of insulin. In the wider community, insulin is related to obesity, while in HIV it may be related to lipodystrophy. and diabetes mellitus [9][Diabetes mellitus] A disorder in which sugars in the diet cannot be metabolised into energy due to a lack of the enzyme insulin. Late-onset diabetes mellitus may be a long-term side effect of some anti-HIV drugs.) but recent studies show this to be linked with body shape and traditional risk factors like being overweight or obese and having a family history of abnormalities rather than HIV treatments themselves.

Managing lipodystrophy

The first step in managing lipodystrophy is to consider changing your HIV drugs. Which drugs you change to will be determined by your past HIV drug history and any resistance or intolerance that you might have. However, there are some agents that have significantly better profiles in terms of avoiding lipodystrophy than others.

There is evidence that switching to a protease inhibitor-sparing regimen or switching to the newer protease inhibitor atazanavir, can reverse some of the metabolic disorders associated with lipohypertrophy (fats in the blood). For fat loss, switching from d4T to abacavir and/or tenofovir may be effective. AZT causes fat loss to a lesser extent than d4T, but both AZT and ddI are nevertheless associated with the fat loss syndrome to a degree. In the NNRTI class, nevirapine is not associated with either lipoatrophy or lipohypertrophy, while efavirenz is associated with increasing lipids, though to a lesser extent than the protease inhibitors.

Taking medication to reduce lipids can be very effective in reducing harmful levels of fats in the blood, even while you continue taking the protease inhibitors that increase lipid levels. There is some evidence that fish oils too can be helpful for blood fats [10]A fat.. However, neither fish oils nor additional medications have been shown to reverse the physical appearance of body fat accumulation to date.

Research in this area is ongoing, so if you have experienced changes in your body shape you should talk to your doctor about the most up to date research and put a treatment plan together. However, long-term avoidance of ARV [11]A medication or other substance which is active against retroviruses such as HIV. is not a good option, as not treating HIV when you need to can be life-threatening.

Lifestyle factors are also really important in reducing cardiovascular risks. So being physically active, not smoking and reducing dietary intake of 'bad' cholesterol (LDLs or low density lipoproteins) and increasing 'good' cholesterol (HDL or high density lipoproteins) all have important roles to play – this means eating more olive oil and omega-3 fish oils, and less animal fat.

Diet and exercise alone, however, have not been shown to significantly improve body shape changes associated with lipodystrophy in clinical [12]Pertaining to or founded on observation and treatment of participants, as distinguished from theoretical or basic science. studies. Although common sense suggests that increasing lean muscle mass and decreasing fat might mask some of the changes (we all also know that doing this is a lot easier said than done.) Being overweight or obese appears to increase the likelihood of experiencing lipodystrophy for women.

‹ Coping in the first few weeks [13]up [14]Drug resistance › [15]

- Lipodystrophy and lipoatrophy

Links:
[1] http://www.napwa.org.au/glossary/term/469
[2] http://www.napwa.org.au/glossary/term/123
[3] http://www.napwa.org.au/glossary/term/471
[4] http://www.napwa.org.au/glossary/term/104
[5] http://www.napwa.org.au/glossary/term/103
[6] http://www.napwa.org.au/glossary/term/114
[7] http://www.napwa.org.au/glossary/term/88
[8] http://www.napwa.org.au/glossary/term/99
[9] http://www.napwa.org.au/glossary/term/95
[10] http://www.napwa.org.au/glossary/term/100
[11] http://www.napwa.org.au/glossary/term/122
[12] http://www.napwa.org.au/glossary/term/475
[13] http://www.napwa.org.au/resource/treat-yourself-right/coping-in-the-first-few-weeks
[14] http://www.napwa.org.au/resource/treat-yourself-right/making-decisions-about-treatment/side-effects
[15] http://www.napwa.org.au/resource/treat-yourself-right/making-decisions-about-treatment/drug-resistance