The Haemophilia Society

HÆMOFACT

A.I.D.S.

RELEASE No 4

THIS FACTSHEET CONTAINS IMPORTANT INFORMATION

concerning

ACQUIRED IMMUNE DEFICIENCY SYNDROME

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"NEW" VIRUSES IN AIDS AND HEPATITIS: LAV/HTLV-3 AND DELTA AGENT

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The possibility that the **acquired immunodeficiency syndrome** (AIDS) might be caused by an unusual virus has always been a strong one. Two groups of workers, in Paris and the USA, have isolated viruses which seem likely candidates. Called LAV (lymphadenopathy associated virus) by the French group, and HTLV-3 **(human T-cell lymphoma-leukaemia virus 3)** by the Americans, the viruses are probably the same. The virus doesn't cause leukaemia - the HTLV designation arose because it belongs to the same family as a different agent (HTLV-1), which may rarely do so.

There's no doubt that identification of the LAV/HTLV-3 virus is a major step forward. Although tests for the virus itself may take some while to be developed, tests for antibodies to it have now been established in this country and will become widely available in the very near future. We can expect these tests to be rapidly applied to blood donor and blood product screening. It should also be possible, although this will take longer, to develop a vaccine which may help protect against AIDS.

Using these new tests,antibodies to LAV/HTLV-3 have been found in the blood of about a third of a group of English haemophiliacs. What does this mean,and how does the presence of antibodies relate to the T-lymphocyte abnormalities detedtable in many haemophiliacs, and the risk of contracting AIDS? We don't yet know. The presence of antibodies implies past exposure to LAV/HTLV-3, but this in itself isn't too surprising. Most haemophiliacs have antibodies to a variety of different viruses in their blood, probably as a result of repeated exposure to small amounts of these viruses

in transfused blood products. The presence of antibodies is usually taken as evidence of immunity to infection, and perhaps one reason why the risk of AIDS in haemophilia is so low (around 1 in 1000) is that many patients are immune to it. There are probably other reasons too, and LAV/HTLV-3 may not be the whole answer to the problem of immune deficiency (see Haemofact No.3). Nevertheless, important progress has been made.

Whilst AIDS is a relatively new problem for haemophiliacs, infection with **hepatitis B virus** (HBV) is an old one, which is fast on the way to being solved. In the Western World, very sensitive 'third generation' tests for HBV have been routinely applied to blood donor screening for several years, and the risk of acquiring HBV infection from blood products has fallen dramatically. Most haemophiliacs have antibodies to HBV in their blood, implying past exposure and immunity to HBV. For those who haven't been exposed, ***vaccination is now available.*** For reasons which are not understood, a small proportion (perhaps 5-10%) of people who contract acute hepatitis B don't subsequently develop antibodies, but become 'chronic carriers' of the virus. HBV which is present in their blood during the initial acute attack is not cleared as it usually is, and can persist for many years. Such carriers of HBV can remain completely well. In others, however, there may be exacerbations of hepatitis, and sometimes progressive liver damage. Why the course of the infection should differ so much between different individuals is unclear, but one possible explanation has recently emerged. This is that some carriers of HBV can acquire a 'superinfection' with another virus called delta agent **(hepatitis D virus)**, which seems to have the capability to cause recurrences of hepatitis and, probably, to accelerate liver disease.

Delta agent can't exist in the body without HBV, so the possibility of infection with the virus only arises in the course of acute HBV infection or, more commonly, in a

chronic carrier of HBV. Although the agent seems to occur most frequently in Italy, it can be transmitted by blood products of non-italian origin. Prevention of delta infection is achieved in the same way as prevention of HBV - by effective screening of blood donors for HBV. Hopefully, further technical advances in screening will eliminate all transfusion-transmitted HBV and delta infections. For the small minority unlucky enough to be carriers of HBV, and therefore at risk of delta infection, anti-viral drugs now undergoing clinical trial look a promising approach.

Although currently the subject of a great deal of interest, LAV/HTLV-3 and delta agent are of course only two of the many infective agents, both known and unknown, which may contaminate blood products. Improved donor screening will help to reduce risk, but it won't entirely remove it. Major efforts are now being made to sterilize clotting factor concentrates, most commonly by heat treatment, and products made both by commercial companies and the NHS are now being clinically assessed. Preliminary results suggest improvement but not perfection. In the longer term, we hope that risk-free 'synthetic' concentrates will become available. This is unlikely to be achieved for several years.

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HAEMOFACT is a leaflet series produced by the Haemophilia Society. They are issued from time to time on topics of interest and concern to people with haemophilia.

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