AIDS AND ITS PREVENTION IN THE UNITED KINGDOM - A POSITION PAPER

1. Cases in the UK

Since 1981 up to the end of November 1984 a hundred and two cases of AIDS had been identified. Forty-four cases had died. The majority of cases were in male homosexuals. However three heterosexual male cases had haemophilia A and two of these have died. Further epidemiological details are supplied in Annex 1 a report from the Communicable Disease Surveillance Centre (CDSC).

2. Causative Agent

It is now accepted that the isolates of retrovirus HTLV III (human T cell lymphotropic virus/LAV lymphadenopathy associated virus) are similar and are probably the causative agent of AIDS either singly or in association with other unknown agents.

3. Development of Tests for HTLV III

Since the isolation of HTLV III numerous publications describing the prevelance of antibody to HTLV III in high risk groups have been made. As far as the UK is concerned the study reported by the team led by at the Chester Beatty Institute and at the Middlesex Hospital using a competitive radioimmunoassay (RIA) is of major interest. It reported:-

> 'Two thousand persons in the UK were examined for antibodies to HTLV III. Of patients with AIDS 30/31 were sero positive as were 89 per cent of patients with persistent generalised lymphadenopathy, 17 per cent symptomless homosexual men, 34 per cent haemophiliacs receiving pooled clotting factors and 1.5 per cent intravenus drug absuers. None of more than a thousand unselected blood donors were sero positive.'

Since this study further antibody tests have been undertaken mainly in haemophil recipients of blood and blood products and some population studies are being unc taken at PHLS.

4. The Wider Availability of the Antibody Test

virus isolate and the cell culture in which it grows has been licensed to five pharmaceutical firms in the USA to develop tests and eventually a vaccine. The isolate currently being used in the UK for research work was sent by to on a scientific exchange basis. at the Virus Reference Laboratory at Colindale also obtained permission to use this isolate for research and an RIA test similar to that developed by at the Middlesex is now available at PHLS Colindale. In order to obtain sufficient test reagents for the National Blood Transfusion Service (NBTS) wrote in August to Assistant Secretary for Health, DHHS asking for his help in allowing the use of this isolate to develop tests for the NBTS. (Annex 2). An unhelpful reply to this request was finally received on the 14 November 1984 (Annex 3). By the time the response from was received had succeeded in isolating the virus from a British patient. A holding reply has been sent to

and have negotiated with Wellcome to use the British isolate to develop a UK test. Wellcome have sub-contracted CAMR Porton where appropriate containment facilities are available to produce the antigen. It is understood that the Wellcome/CAMR initial effort will be directed to produce antigen which could be used by the Blood Products Laboratory (BPL) to make the screening test for use in the Regional Transfusion Centres (RTCs). Wellcome want to develop a test for use in laboratories outside the NBTS and also a vaccine from a genetically manufactured virus antigen in due course.

It is not possible to predict when this test will be available for universal use in the RTCs because a number of scientific problems have to be overcome, but with luck it may be available although less well validated at about the same time that the test from the USA will be on the market, that is in the first quarter of 1985. The UK RIA test is particularly suitable for Regional Transfusion Centres who already use a similar technique for the detection of hepititis B antigen.* The USA tests are based on ELISA which requires new apparatus and new techniques in the transfusion centres. They are also likely to be more costly. Representatives of US firms seeking advice on marke ting these tests have been quoting the cost as a pound a test to DHSS officials.

*It is also more sensitive and specific than ELISA techniques and there will be fewer false positive results.

Wellcome will be looking for reassurance that they will be paid adequately for the antigen supplied to the BPL but it seems unlikely that their charges will reach anything like the USA level.

5. Significance of the Test to Antibody HTLV III

The test identifies antibody in an individual who has been exposed to the virus. It is presumed that a viraemia preceeds the development of antibody but unknown how long this lasts before detectable antibody is apparent. Chimpanzees sero convert in about two weeks after innoculation with AIDS material. There will therefore be a latent period before antibody develops in which an individual infected with the virus can pass it on. A test for antigen is clearly the ultimate satisfactory test. In the meantime it can be assumed that presence of antibody indicates infectivity. The significance in antibody with regard to development symptoms or alternatively protection against AIDS is unknown.

6. Blood Transfusion and AIDS

Although no one has yet contracted AIDS from a blood transfusion in the UK there are three sero positive recipients of blood from a donor in Wessex who now has AIDS. There may well be other donors who are unaware that they are infected.

In the USA there are over 80 cases of AIDS contracted through blood transfusion. Although the prevalance of AIDS infected blood donors in the UK will be very low transfusion is the way in which AIDS will spread into the general population affecting men, women and children. The only way to prevent this is to institute screening of all blood donations. The consequences of not introducing screening could result in more cases of transmission of AIDS from blood donations and the patient population refusing to accept transfusions. Not only increasing the length of stay in hospital following operations or accidents but also mortality.

Routine screening for hepatitis B and syphilis is carried out on all blood donations. One in a thousand donors are found positive for hepatitis B. One in 100,000 donors are found positive for syphilis.

Approval by MS(H) is awaited of a revised leaflet substantially unchanged since it was agreed by DHSS officials and Regional Transfusion Directors (RTDs) in mid-1984. This will help to educate potential blood donors in the high risk group for AIDS as publication of CMO's statement and local publicity at donor sessions have also succeeded in doing.

7. Introduction of a Test for Antibody to HTLV III into RTCs

A meeting of the NBTS Working Group on AIDS (a panel of expert advisers) was held on the 27 November. It was agreed there that a screening test for HTLV III antibody should be introduced to all RTCs as soon as possible. The group advised that the test should be made available to all centres simultaneously as there was no certainty that any Region was less likely to attract potential carriers of AIDS virus than others. It was accepted that if the test had only limited availability then the Centres serving the major conurbations should have priority. However, certain RTDs think that this will produce problems (see pilot trials).

8. Pilot Trials

Pilot trials are needed prior to the introduction of the screening test to all RTCs. North London Blood Transfusion Centre is particularly suitable because of the great interest and expertise the Director and her consultant and scientific colleagues have in virus infections of blood. However, they have evidence that homosexual men knowing that screening for AIDS is being undertaken will not declare their predelictions and will donate blood in order to discover their antibody status. They feel apprehensive about attracting a large number of donors who could have positive results. Furthermore they are not confident that general practitioners would know how to deal adequately with donors referred to them and consider that a special counselling service should be available to them. In order to attract homosexuals away from blood donor sessions they would like to see facilities for antibody tests in STD clinics.

On this evidence it is clear that once an HTLV III antibody test is introduced to a centre, it will need to be used continuously in order to ensure, that no one at high risk undeterred by requests not to donate would do so and remain unidentified if they were antibody positive. Institution of screening needs to follow on a pilot test without interruption.

In view of these difficulties it has been agreed with a North London Centre that a pilot trial could be mounted using a similar test but testing for hepatitis core antigen. This would enable logistical problems involved in the test to be sorted out.

9. HTLV III Antibody Positive Patients and Donors

As described in para 8 there is concern about the position of counselling to those found positive for HTLV III antibody because of the level of knowledge about its significance with regard to development of the full blown AIDS. Currently it is believed that as many as ten per cent of HTLV III positive individuals may develop the disease.

A meeting of Departmental officials has been arranged for mid-January to precede a meeting of expert advisers to discuss how best to deal with those individuals identified as positive for antibody. The need for their surveillance, by whom, and the means of alerting those involved in counselling and keeping them in touch with latest developments in this very rapidly changing field will be amongst the topics to be considered at these meetings.

10. Reference Centres

As a screening test is established in Regional Transfusion Centres there will be a need for a Reference Centre to validate any positive results and to monitor the sensitivity and specificity of the test and its further development. of the Middlesex Hospital who devised the test is in a position to undertake this role provided he has further support. An application from for funding such a project will be presented to the Supply Regional Liaison Group in mid-January. It is hoped that this application will be fully supported.

11. Research

The MRC Working Group on AIDS chaired by is responsible for co-ordinating research work on AIDS. Five research projects into various aspects of AIDS are being funded by the MRC. The DHSS is supporting two of them namely that of an investigation into the immunology and etiology of AIDS at the Middlesex Hospital Medical School and epidemiological study of the relationship of AIDS in patients with disorders of blood coagulation to its possible acquisition through treatment with blood products, Public Health Laboratory Service, Manchester.

12. AIDS in Blood Products

Three haemophiliac patients have contracted AIDS in the UK. It is believed that all three were infected through the use of commercial Factor VIII. Two of these patients have died from AIDS. At least 24 other cases are known to have the AIDS related syndrome (ARS). 800 haemophiliacs in the UK have now been tested for HTLV III antibody: the incidence of HTLV III antibody was about 35 per cent. However 75 per cent of patients with severe haemophilia have antibody. (Of 4,000 haemophiliac patients in the UK 2,000 can be considered to be severe.)

Haemophilia Reference Centre Directors have recently met. They will shortly be recommending Haemophilia Centre Directors to use heat treated Factor VIII in the treatment of their patients. Sufficient heat treated Factor VIII is available from BPL to treat new patients and children only. BPL will not be able to heat treat all its Factor VIII until April 1985. It is probable that Haemophilia Reference Centre Directors will prefer to use commercial heat treated Factor VIII than the untreated BPL product, although some have signified their willingness to use it.

Commercial heat treated Factor VIII has until now only been prescribable on a named patient basis because the CSM has been unwilling to license a product known to convey non A non B hepatitis. Commercial firms producing heat treated Factor VIII have now been invited to submit license variation applications to

the CSM for approval as there is now some evidence that HTLV III is inactivated by heat. Heat treatment will reduce the potency of Factor VIII by approximately 15 per cent. This has implications for the plasma supply required for self-sufficiency.

Haemophilia Reference Centre Directors intend to recommend that patients should be advised to use barrier methods of contraception and also to discourage patients relatives from being blood or organ donors.

13. Interim Guidelines for Clinical Laboratory Staff Dealing with Patients and Specimens from Patients with AIDS.

In 1983 the Advisory Committee on Dangerous Pathogens (ACDP) was asked by the Department for advice on appropriate measures for the protection of hospital staff who deal with AIDS patients and specimens taken from them for pathological investigation. Guidelines of conduct in both clinical laboratory work drafted by a working party have now been agreed by ACDP and have been submitted for Ministerial and Management Board approval. It is hoped to publish these early in the New Year.

The constantly changing state of knowledge about the disease and its presumed causative agent have led the committee to recommend Interim Guidelines to be reviewed within 12 months. The preface to the Guidelines invites comments from those to whom they are circulated and these coupled with any new scientific information will be taken into account when a review of the Guidelines is undertaken next September. There is some indication that one or two of the recommendations in the section dealing with laboratory containment might be considered too restrictive for practical working. There is no doubt that ACDP's advice is eagerly awaited in the field. The rising number of cases of AIDS and the recently published account of sero conversion in a nurse receiving a needle stick injury are adding to the already considerable anxiety that exists amongst health staff on risks of their contracting the infection.