ACQUIRED IMMUNE DEFICIENCY SYNDROME

AIDS

GENERAL INFORMATION
FOR DOCTORS

MAY 1985
CONTENTS

1. AIDS - General Information for Doctors

   The definition of AIDS and reporting of cases 2
   The Cause 2
   HTLV III 3
   Risk Factors 3
   Clinical Presentation of AIDS 4

       non specific symptoms 4
       the lungs 5
       the skin 5
       the central nervous system 5
       the alimentary tract 6
       lymphomas and other tumours 6
       lymphadenopathy 7
       summary 7

   Laboratory investigations 8
   Special investigations 9
   Guidance on measures to control spread 9
   Counselling 10
   Safety guidelines for health workers 10
   Public Health provisions 11

2. The Acquired Immune Deficiency Syndrome

   A paper prepared by the PHLS Communicable Disease Surveillance Centre 12-15
DEFINITION OF AIDS AND REPORTING OF CASES

The first case of AIDS in the UK was reported in 1981. In 1982 a surveillance scheme was set up by the PHS Communicable Disease Surveillance Centre (CDC) at Colindale and the Communicable Diseases (Scotland) Unit, Glasgow, with the object of following the course of the outbreak. The case definition adopted is that in use at the Centers for Disease Control (CDC), Atlanta, Ga, USA, and is as follows:

"(i) A reliably diagnosed disease that is at least moderately indicative of an underlying cellular immune deficiency. For example, Kaposi's sarcoma in a patient aged less than 60 years, or opportunistic infection.

(ii) No known underlying cause of the cellular immune deficiency nor any other cause of reduced resistance reported to be associated with the disease".

This definition has also been accepted by many other countries and by the World Health Organisation (WHO) Collaborating Centre for AIDS.

By the end of February 1985, 132 cases of AIDS (126 males, 6 females), of whom 58 had died, had been reported within the United Kingdom to the Communicable Disease Surveillance Centre. The majority of the cases (97 or 74 per cent) have been reported from London. The remainder have been scattered throughout the country, almost all in the larger towns. (In the United States by the end of 1984 there had been 7,691 cases and 3,661 deaths.)

Doctors who have patients with AIDS under their care are invited to assist in the maintenance of a complete register of cases by reporting them in strict confidence to the Director, Communicable Diseases (Scotland) Unit, Royal Infirmary, Edinburgh, EH3 9YW (tel 0131-552 2266). The details required should be confirmed with CD(S)U.

THE CAUSE

It now seems almost certain that the cause of AIDS is a virus first reported from France and termed Lymphadenopathy Associated Virus (LAIV). A virus which is almost certainly identical has been separately isolated from AIDS patients in the USA, where it has been termed Human T-cell Lymphotropic Virus type III (HTLV-III). This nomenclature is used hereafter.
HTLV-III DISEASE

HTLV-III has been isolated from a range of persons who do not meet the full CDC definition of AIDS. As in many virus diseases infection with HTLV-III has a wide spectrum of clinical expressions: from those individuals who are asymptomatic, to the minority who are severely affected and develop AIDS (Fig 1). It is important to point out that the majority of infected individuals are asymptomatic.

![Diagram](image)

FIGURE 1.

In a few patients a self limiting glandular-fever-like illness characterised by fever, macular rash, and lymphadenopathy within a few days of infection has been reported but it seems likely that in the majority of cases infection is unaccompanied by symptoms or signs. The incubation period between infection and development of AIDS is prolonged and has been found to vary from between 15 and 58 months.

RISK FACTORS

Probably the most important factor in making a diagnosis of AIDS is to think of it. In order to assist diagnosis the distribution of cases within the risk groups identified in the USA and the UK is given in Table 1. By far the largest proportion has occurred in homosexual men. Intravenous drug abusers sharing infected equipment including syringes and needles have been an important group in the USA but so far only one such case has occurred in the UK (in March 1985). Others are likely to follow, however.

A diagnosis of AIDS should also be kept in mind in relevant circumstances in persons (regardless of race or sex) who have lived recently in Central Africa and in the female partners of bisexual men. The children of women with HTLV-III infection are also at risk.
The risk of infection as a result of blood transfusion is extremely low. Infection with HTLV-III has occurred as a result of treatment with Factor VIII and Factor IX. Heat treated Factor VIII is now available and in use and is likely to eliminate the risk of transmission. Careful epidemiological and laboratory studies have shown that hepatitis B vaccine does not transmit HTLV III infection. As far as intramuscular immunoglobulins are concerned the method of preparation in the UK is regarded as a sufficient safeguard against transmission.

**TABLE 1**

AIDS CASES (as at 28 February 1985)

<table>
<thead>
<tr>
<th>Patient Group</th>
<th>Total Cases in USA</th>
<th>Total Cases in UK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>(i) Homosexual/bisexual</td>
<td>6293</td>
<td>72</td>
</tr>
<tr>
<td>(ii) Intravenous drug abusers</td>
<td>1478</td>
<td>17</td>
</tr>
<tr>
<td>(iii) Haemophiliacs</td>
<td>62</td>
<td>&lt;1</td>
</tr>
<tr>
<td>(iv) Blood transfusion recipients</td>
<td>104</td>
<td>1</td>
</tr>
<tr>
<td>(v) Female sexual partners of men at risk</td>
<td>68</td>
<td>&lt;1</td>
</tr>
<tr>
<td>(vi) Children of affected mothers</td>
<td>104</td>
<td>1</td>
</tr>
<tr>
<td>(vii) Caribbean connection (Principally Haiti)</td>
<td>280</td>
<td>3</td>
</tr>
<tr>
<td>(viii) Central African connection</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(ix) Insufficient data or unknown</td>
<td>308</td>
<td>4</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>8697</strong></td>
<td></td>
</tr>
</tbody>
</table>

**CLINICAL PRESENTATION OF AIDS**

a. **NON-SPECIFIC SYMPTOMS**

Patients with AIDS may present with vague symptoms including lethargy, weight loss and night sweats. Fever, joint pains, rash, diarrhoea and enlarged lymph glands may also occur. The list of diseases with which a patient with AIDS may present includes many opportunistic infections and a few rare malignancies. However the commonest presentations are *Pneumocystis carinii* pneumonia (60 per cent) and Kaposi's sarcoma (25 per cent). **IF CLINICAL AIDS IS SUSPECTED URGENT REFERRAL TO HOSPITAL IS INDICATED. PATIENTS WITH AIDS ARE SEVERELY IMMUNOSUPPRESSED. EARLY REFERRAL OF PATIENTS WITH AN OPPORTUNISTIC INFECTION MAY RESULT IN APPROPRIATE TREATMENT FOR THE INFECTION WHICH IS OFTEN SUCCESSFUL.**
b. **THE LUNGS - PNEUMOCYSTIS CARINII PNEUMONIA (PCP)**

Typically patients with PCP present with a persistent non-productive cough, shortness of breath on exercise and fever of several weeks duration. The patient is often tachypnoeic at rest without other findings on physical examination. On presentation a chest X-ray may show interstitial lung shadowing or it may be clear. Blood gas analysis and other lung function tests, including estimating the carbon monoxide transfer factor, may be helpful. There is usually a marked hypoxia even if the chest X-ray is clear. In such a case if the patient is in a risk group the diagnosis of pneumonia (PCP) should be considered. Although the disease may have had a slow onset, deterioration is normally rapid after presentation unless treatment is given. Such patients require urgent admission to hospital. As soon as possible after admission transbronchial lung biopsy should be considered to establish the diagnosis. Although PCP is the most likely diagnosis other infections may produce such a presentation alone or in concert with *Pneumocystis carinii*. These include cytomegalovirus, mycobacterial and cryptococcal infection which may require different or additional treatment.

c. **THE SKIN - KAPOSI'S SARCOMA**

Kaposi's sarcoma occurring in patients with AIDS may look insignificant on initial presentation to the clinician. At this point it may consist only of a localised red or purple, flat or raised lesion anywhere on the skin (or hard palate) and may mimic a bruise, an angioma, or a pyogenic granuloma. In an at-risk individual the persistence of even a trivial skin lesion should raise the desirability of referral to a dermatologist, a genito-urinary medicine/sexually transmitted diseases clinic or a physician interested in AIDS. General practitioners are advised not to attempt a skin biopsy where Kaposi's sarcoma in an AIDS patient is suspected. Another dermatological presentation of AIDS is severe mucocutaneous herpes simplex usually taking the form of locally invasive and progressive ulceration (perianal or perioral). A number of other non-specific skin complaints are common among AIDS patients including fungal infections, folliculitis and eczema.

d. **THE CENTRAL NERVOUS SYSTEM**

Central nervous system involvement is relatively common. Presenting symptoms include lethargy, depression, personality change, impairment of intellectual functions such as short-term memory, confusion, fits, headaches, and/or ataxia, focal neurological signs such as hemiplegia or dysphasia may also occur. Toxoplasmic or less often fungal infections, cerebral abscesses, herpes simplex encephalitis and cerebral lymphoma are important treatable causes of space-occupying lesions, best shown initially on CT scanning. Infection with papovavirus may lead to progressive multifocal leucoencephalopathy, which has characteristic CT scan
appearances. Cryptococcal or tuberculous infection may present as subacute meningitis with minimal symptoms and signs. Where these have been excluded a common background to neurological abnormalities is diffuse cerebral atrophy; this progressive disorder may be due to an opportunistic infection such as cytomegalovirus, but recent evidence points to direct infection of brain cells with HTLV-III as the major cause.

Retinal lesions are common and include non-specific cotton wool spots or larger exudates associated with pneumocystis or toxoplasma infection. Haemorrhages, choroidoretinitis and vascular occlusions may be part of an aggressive cytomegalovirus retinitis, which may rapidly lead to blindness. Examination of the fundi is a valuable diagnostic aid.

e. THE ALIMENTARY TRACT

AIDS may present with oral and oesophageal candidiasis. Intractable diarrhoea may also occur. Investigation of the diarrhoea does not always reveal a cause but diagnoses to consider include cytomegalovirus enterocolitis or other involvement of the bowel with Kaposi's sarcoma, cryptosporidiosis or mycobacteria.

Although in healthy individuals, cryptosporidiosis is normally a self limiting condition, it poses particular problems in the presence of immunosuppression such as is seen in AIDS patients. Cryptosporidium may not be seen on a direct smear examination of a stool specimen unless the preparation is acid-fast stained. Concentration of the stool specimen may be necessary.

f. PYREXIA OF UNKNOWN ORIGIN (PUO)

AIDS may present as a pyrexia of unknown origin. The pathogens most frequently responsible are cytomegalovirus, mycobacterium tuberculosis or atypical mycobacteria. In immunocompromised patients the mycobacterium frequently does not excite a granulomatous reaction so diagnosis may be difficult. Tuberculosis may be miliary and it may be necessary to stain tissue biopsies including marrow for acid fast bacilli. Pneumocystis carinii pneumonia may also initially present as a PUO.

g. LYMPHOMAS AND OTHER TUMOURS

It is clear that although falling largely outside the formal surveillance definition of AIDS; B-cell lymphomas, often with extensive extranodal disease, are part of the spectrum of complications of HTLV-III infection. This must be borne in mind when patients present with progressive enlargement of lymph nodes unlike the more usual minor lymphadenopathy referred to in section (h). Some patients have developed Hodgkin's disease in association with HTLV-III infection. Other tumours, such as squamous carcinoma of the anus and cloacogenic carcinoma of the ano-rectum have been described in homosexual men; their relationship to HTLV-III infection is however uncertain.
h. LYMPHADENOPATHY AND MINOR ILLNESS ASSOCIATED WITH HTLV-III INFECTION

HTLV-III infection is already widespread in certain groups at risk (e.g. in homosexuals with multiple sexual partners and in haemophiliacs). Estimates vary as to what percentage of infected individuals will ultimately develop AIDS, but it may be of the order of 10 per cent. Many more patients will however develop less serious illness with which they may present to their doctor. The commonest symptoms are non-specific and are described on page 4. They may mimic infectious mononucleosis. The commonest signs are lymphadenopathy bilaterally in three or more sites which may fluctuate and persist for months, and hepatosplenomegaly. Rashes (dermatitis, folliculitis, tinea, shingles and impetigo) occur commonly in this group as does oral candida (thrush). The majority of patients with lymphadenopathy alone seem generally to have a good prognosis and have rarely progressed to fully developed AIDS in the succeeding 3-4 years. Patients in whom lymphadenopathy is seen in association with major weight loss, unexplained diarrhoea, fever, oral candidiasis and lymphopenia should be followed more closely as they are more likely to progress to AIDS. Other patients may have these symptoms without lymphadenopathy as part of a prodromal disorder. Unexplained thrombocytopenic purpura may be associated with HTLV-III infection.

Some patients with prodromal disorders may show raised ESR, anaemia, lymphopenia, or thrombocytopenia but other patients with lymphadenopathy may have a normal haematological picture. A polyclonal rise in immunoglobulin is commonly associated with these minor variants. Blood tests are not necessary prior to referral.

If blood is taken from a person suspected of having AIDS or an HTLV-III related condition then the procedures outlined in the section on Laboratory Investigations (p8) should be followed.

i. Summary

Remember the possibility of AIDS and HTLV-III infection when seeing patients in high risk groups. Examine in particular for enlarged lymph nodes and look at the skin and oral cavity. If symptoms or signs suggest low grade HTLV-III disease refer early. If AIDS itself is suspected, urgent referral is indicated to an infecti diseases physician or to a genito-urinary medicine (GUM) or sexually transmitted disease clinic. Referral should not be delayed whilst waiting for laboratory results.
LABORATORY INVESTIGATIONS

If blood is taken from a person suspected of having AIDS or an HTLV-III related condition then the following procedures outlined in the ACDP Guidelines issued by SID (SID/DS/95/10) should be observed.

a. When blood or other specimens are to be taken, gloves and a disposable plastic apron and/or gown must be worn and discarded safely after use. Eye protection is recommended.

b. Only the minimum essential quantity of blood should be drawn and then only by designated staff who are trained and experienced. Those who withdraw blood or other body fluids must ensure that the outside of any specimen container is free from contamination.

c. Disposable units must be used for blood collection. Needles must be removed from syringes before the blood is discharged into the specimen container and immediately discarded into a puncture-proof disposable bin used solely for that purpose and designed for incineration. Only needle-locking syringes or similar units should be used to aspirate fluid from patients. Accidental puncture wounds in staff must be treated immediately by encouraging bleeding and liberal washing with soap and water. Any such accident or contamination of broken skin or mucous membranes must be promptly reported to and recorded by the person with overall responsibility for the work.

d. Specimens must not be sent to the laboratory without a standing agreement between the clinician and senior laboratory staff. They must be in robust screw-capped and leak-proof containers (evacuated or not) bearing a hazard warning label. Securely capped specimen containers should be sent in separate sealed plastic bags, kept upright if possible and transported to the laboratory in a sound secondary container which can be disinfected. The accompanying request forms must be kept separate from the specimen to avoid contamination and also clearly indicate the hazard. Pins, staples or metal clips must not be used to seal the bags and for safety, the carrying handles of the secondary container should not be attached to the lid.
SPECIAL INVESTIGATIONS

i. The HTLV-III antibody test should become more widely available in 1985. It indicates, if the result is positive and confirmed, that the patient has definitely been infected with HTLV-III. As already mentioned however, this does not imply that the patient concerned will develop AIDS, but on the basis of present knowledge they should be regarded as being capable of transmitting the disease. A negative test is a good indicator of the absence of infection, but on rare occasions a patient with a negative test may be in a viraemic phase prior to antibody production. Patients who have previously been positive may become semi-negative in the final stages of clinical AIDS. The Department will issue guidance about the HTLV-III antibody test in due course.

ii. The test for lymphocyte subsets is only available in certain specialised centres. HTLV-III is "lymphotropic" for a special subset of lymphocytes - the T helper cells. That is to say that the virus replicates within these cells and brings about damage to the immune system by destroying them. Too much reliance should not be placed on the level of these cells in the blood as a low helper cell count may improve spontaneously in an HTLV-III positive patient and a patient may even present with AIDS with a normal helper cell count. The deficit in such cases may be functional rather than numerical.

GUIDANCE ON MEASURES TO CONTROL SPREAD

This guidance is not only for patients with AIDS and their families and friends but also for persons with positive HTLV-III antibody tests and members of the risk groups shown in Table 1. HTLV-III appears to be transmitted principally by sexual intercourse - predominantly between male homosexuals - or by transfusion or inoculation of blood or blood products. There is no evidence to date that social contact with others presents a risk of transmission of infection. Furthermore, there is no evidence that the infection is transmissible by airborne droplets resulting from coughing or sneezing, nor by sharing washing, eating and drinking utensils, other articles commonly in general use or sharing of toilet facilities. Infection has not been detected in family contacts apart from sexual partners or children born to infected mothers.

There is a risk of infecting others by sexual intercourse. Sexual partners should be restricted where possible to established relationships. In the present state of knowledge both homosexual and heterosexual anal intercourse should be avoided.
Although spread by saliva has not been documented, intimate exposure of others by oral-genital contact or by intimate kissing should be avoided. Mutual masturbation appears to be safe. The efficacy of condoms in preventing infection with the AIDS virus is not proven, but the consistent use of protective sheaths will probably reduce transmission and is therefore recommended.

Infection may also be transmitted by the sharing of needles and syringes. Devices which have punctured the skin, such as hypodermic needles, ear piercing equipment, tattooing needles and acupuncture needles must be safely discarded unless proper facilities (for instance in a hospital) for steam sterilisation by autoclave are available. Needles and equipment coming into contact with blood should whenever possible be disposable. Razors, toothbrushes or other implements which could become contaminated with blood must not be shared. After accidents resulting in bleeding, contaminated surfaces should be cleaned liberally with household bleach, freshly diluted one part bleach to 10 parts water.

PERSONS INFECTED BY HTLV-III AND IN AT RISK GROUPS SHOULD NOT DONATE BLOOD, PLASMA, OTHER BODY TISSUES (e.g BONE MARROW), BODY ORGANS, OR SPERM. THEY SHOULD NOT SIGN OR CARRY ORGAN DONOR CARDS.

Individuals with a confirmed sero-positive test should inform their medical and dental advisers that they are antibody positive prior to any blood tests being taken or surgical procedures including dental work being undertaken so that appropriate precautions can be taken.

COUNSELLING

Further consideration will require to be given to the appropriate means of providing, within the National Health Service, counselling and support of AIDS sufferers, their contacts and those found to be HTLV-III antibody positive. Support is also available from some community based groups, such as Scottish AIDS Monitor, 23 Dublin Street, Edinburgh, EH1 5EG, the Terrence Higgins Trust Ltd BM AIDS, 34 South Moulton Street, London WC1N 3XX, and the Haemophilia Society, PO Box 9, 16 Trinity Street, London SE1 1DE. The Chairman of the Scottish Group of the Haemophilia Society is Mr R A Cowe, 106 Houston Gardens, Uphall, Falkirk, West Lothian.

SAFETY GUIDELINES FOR HEALTH CARE WORKERS have been issued by SHED (entitled "AIDS - Interim Guidelines by AIDS" (DS(85)10)). These relate to the care of AIDS and persistent generalised lymphadenopathy patients in hospital, and also deal with the handling of blood specimens and secretions.