

discovery of the etiologic agent is only the first step, albeit an optimistic one, on a long and weary road before fundamental discoveries are translated into practical advances.'

Phenomenal progress has been made in the short period since AIDS was discovered but much still has to be learnt. Continuous surveillance will be necessary to monitor the disease. Although no end is yet in sight, we may draw some comfort from the Scriptures — 'This too will pass.'

### Addendum (September 1986)

The present status of AIDS cases in the RSA is: (i) South African residents — 30 cases comprised of homosexual/bisexual men (26), heterosexual (1), blood transfusion AIDS (1) and haemophiliacs (2); all these are white males; and (ii) of the non-South African residents seen in Johannesburg, 2 each were from Malawi and Zambia and 1 each were from Zaire and Haiti; 4 were black males, 1 a white male and 1 an Indian female with thalassaemia. Twenty-five AIDS patients have so far died.

This study was supported in part by the South African Medical Research Council. I wish to thank the members of the Serology Department of the University of the Witwatersrand for their assis-

tance in this study and all the doctors who referred patients for investigation. Finally, I would like to thank Professor J. Metz, Director, South African Institute for Medical Research, for his support and guidance.

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# HTLV-III infection in the RSA

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The diagnosis of the acquired immune deficiency syndrome (AIDS) and AIDS-related complex (ARC) was initially based on strict clinical and laboratory criteria of acquired immune deficiency. Specific diagnostic tests for HTLV-III infection only became available after the isolation of the causative virus in France in 1983 and subsequently in the USA and elsewhere.

There are at present about 12 000 patients with AIDS and 1 million infected people in the USA, where attempts to control the infection are being complicated by increasing heterosexual transmission. A similar pattern is emerging in both Western and Eastern Europe.

In the RSA commercially available enzyme-linked immunosorbent assay (ELISA) kits are in the process of evaluation by several laboratories and blood transfusion services. However, the sero-epidemiological data presented here are the somewhat limited currently available ones based on immunofluorescent antibody assay (IFA) to demonstrate specific HTLV-III serum antibodies.

## Methodology

The specific diagnosis of HTLV-III infection was established by the IFA using either the H 9/HTLV-III RF infected cell

line<sup>1</sup> or a locally developed cell line infected with local HTLV-III isolates.<sup>2</sup>

The subjects tested were mainly from high-risk groups, namely homosexuals and people with coagulation defects. In one survey sera collected for other purposes were tested, including a number of sera from baboons and vervet monkeys.

## Results

The first cases of AIDS in the RSA were recognized in Pretoria in 1982 and affected 2 international flight stewards with homosexual contacts in the USA.<sup>3</sup> One of the patients at present being monitored in Pretoria is a seropositive bisexual who is married with 1 child (Dr G. J. Ras — personal communication).

A breakdown of the total number of AIDS cases seen in the RSA is shown in Table I (Dr R. Sher — personal communication). There have been a total of 21 patients with AIDS; 14 have died. Three of the 4 heterosexuals were foreigners and the fourth contracted the infection from a blood transfusion. The number of new AIDS cases is increasing annually and in 1985 AIDS was diagnosed in a bisexual patient, who has since died.

The results of several sero-epidemiological surveys in the RSA have been published. In Johannesburg<sup>4</sup> 77 out of 375 male homosexuals (20.5%) were seropositive including 13/13 AIDS and 36/46 patients with ARC. Taking into account that this was a highly selected group the authors suggested that the

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**TABLE I. INCIDENCE OF AIDS IN THE RSA**

Subjects	No.	No. of cases reported each year	
<b>Homosexuals</b>	<b>16</b>	<b>1982</b>	<b>3</b>
		<b>1983</b>	<b>1</b>
<b>Heterosexuals</b>		<b>1984</b>	<b>8</b>
<b>Zaire</b>	<b>2</b>		
<b>Austria</b>	<b>1</b>		
<b>Blood transfusion recipient (RSA)</b>	<b>1</b>		
<b>Bisexual</b>	<b>1</b>	<b>1985</b>	<b>9</b>
<b>Total</b>	<b>21</b>		

Deaths 14/21.

(4,7%) tested by the Natal Institute of Immunology were seropositive (Dr P. Brain — personal communication).

In Bloemfontein all of the 15 homosexuals tested were seronegative.

## Conclusions and discussion

HTLV-III infection is established in the RSA, with 21 known AIDS cases, and the numbers are increasing annually. More than 10% of homosexuals tested were seropositive. Infection in haemophiliacs in the great majority of cases correlates with the use of imported as opposed to local blood products for treatment. A few haemophiliacs have apparently been infected by local blood products and donated blood has been responsible for the death of a heterosexual male from AIDS.

The incidence of antibodies in the general population is not known, but this information will be forthcoming when the blood transfusion services start screening donated blood.

Evidence for heterosexual spread of HTLV-III infection in the RSA is at present lacking, but it can be expected to occur for the following reasons: 1 bisexual patient died of AIDS in 1985 and there is at least 1 known seropositive bisexual; spread to heterosexuals can occur through blood and its products; an unknown factor is the possible spread of infection from bisexuals on visiting ships, an aspect that warrants investigation; some of the several hundred thousand migrant workers in the RSA may bring infection from neighbouring countries where heterosexual spread is already established.

While the screening of donated blood will help to limit the spread of infection, the possibility of infectivity of donated blood, which is in the incubation period of AIDS before seroconversion, is a blind spot in diagnosis. Culturing the virus for infectivity would be impractical, but nucleic acid technology to demonstrate viral genome in the cultured peripheral blood lymphocytes would be worth investigating as a diagnostic technique in selected cases.

The pattern of infection in the RSA as revealed by clinical cases and sero-epidemiology excludes the RSA as the original source of AIDS and indicates that infection is at an early stage of development and lags behind that in the USA. It is imperative that the RSA benefit from the experience of other countries by instituting effective control measures in an attempt to contain the infection until more specific methods of treatment are evolved.

The establishment of the Advisory Group on AIDS by the Department of National Health and Population Development is an important step in co-ordinating the planning and implementation of effective control measures. These will include the availability of diagnostic and counselling services; ensuring that donated blood and its products are safe, as well as donated tissues and semen; and the prospective follow up of contacts, including neonates and children at risk.

I should like to express my sincere appreciation to my colleagues for their co-operation, as cited in the text.

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overall incidence in male homosexuals in metropolitan Johannesburg is probably between 10% and 15%.

In metropolitan Cape Town a total of 265 homosexual volunteers were tested at the University of Stellenbosch Medical School at Tygerberg and 28 (10,5%) were seropositive, 7 of these were patients with ARC and an eighth died of AIDS (Table II — unpublished results). One of the patients with ARC has been followed up since 1982 and we have isolated HTLV-III from his peripheral blood on two occasions as well as from the peripheral blood of 3 other patients including the AIDS patient who died (unpublished results).

**TABLE II. INCIDENCE OF HTLV-III SEROPOSITIVE REACTORS IN METROPOLITAN CAPE TOWN**

	Risk group	
	Homosexual	Haemophiliac
<b>Seropositive</b>	<b>28/265 (10,5%)</b>	<b>5/95</b>
<b>Symptomatic</b>	<b>8/265 (3%)</b>	<b>1/95</b>
<b>Death from AIDS</b>	<b>1/265</b>	

A survey in Johannesburg of paediatric patients with bleeding disorders revealed 43 out of 49 (88%) seropositive reactors among those treated with imported blood products while only 1 out of 29 treated with local products was seropositive (Dr R. Sher — personal communication). This relative safety of local products was confirmed in our laboratory where we found only 5 out of 95 haemophiliacs seropositive, 1 of the 5 suffering from ARC (Table II). The Western Cape is virtually self-sufficient for blood products for treating haemophiliacs, but 4 of the 5 seropositive patients had received imported products and 1 had apparently only received local products.

At the University of Cape Town virology laboratory a total of 18 seropositive reactors were found, of whom 5 homosexuals and 2 haemophiliacs were also included in our series (Professor J. Moodie — personal communication).

Sera which had been collected for other purposes were screened at the National Institute for Virology in Johannesburg and all 661 were negative as were sera from 61 baboons and 18 vervet monkeys.<sup>1</sup> However, more specific and sensitive tests indicate that there may be cross-reaction between HTLV-III and a simian virus.<sup>5</sup>

In Durban 6 out of 56 homosexuals were found to be seropositive and 1 of the 6 has ARC (Dr I. Windsor — personal communication). In addition 9 out of 192 homosexual men