



# EPIDEMIOLOGY BULLETIN

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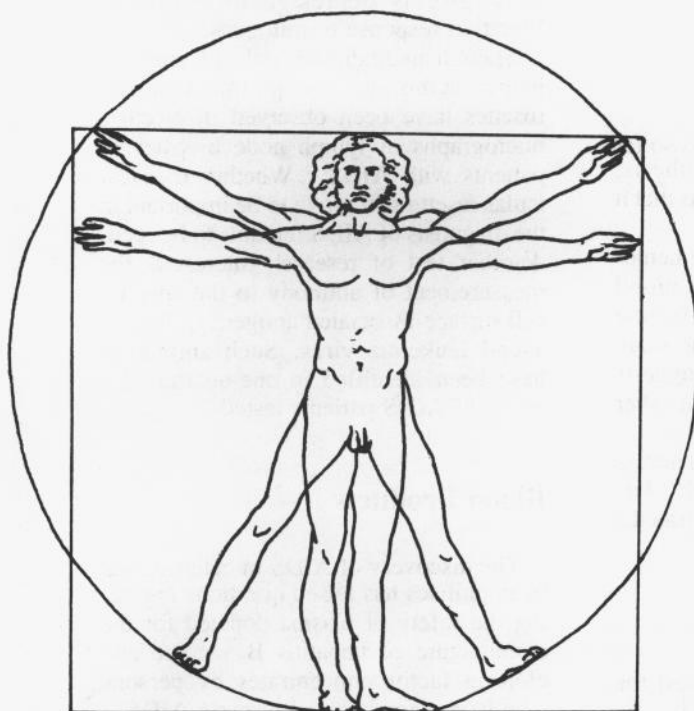
## Acquired Immune Deficiency Syndrome

Acquired Immune Deficiency Syndrome (AIDS) first came to attention in 1979. It is seen predominantly among homosexuals (about 75% of the cases), intravenous drug abusers (12%), Haitian immigrants to the United States and in persons with hemophilia A.<sup>1</sup> However, each group contains many persons who probably have little risk of acquiring AIDS.

It is associated with immunosuppression and a profound susceptibility to opportunistic infections, and is eventually fatal in many patients. All races have been affected, and the age range has been 25-44 years. There is also preliminary evidence suggesting that children living in high-risk households are susceptible to AIDS.<sup>2</sup> The immunosuppression is of the cell-mediated type but its cause is not known. Immunoglobulin levels are normal or elevated, and neutrophil function appears normal.<sup>3</sup>

### Case Definition

The Centers for Disease Control (CDC) defines AIDS "as a disease, at least moderately predictive of a defect in cell-mediated immunity, occurring in a person with no known cause of diminished resistance to that disease." Such diseases include Kaposi's sarcoma (KS) in persons



less than age 60 years, *Pneumocystis carinii* pneumonia (PCP) and other opportunistic infections due to one or more of the following: aspergillus, candida, cryptococcus, cytomegalovirus, nocardia, strongyloides, toxoplasma, zygomycetes or atypical mycobacteria.<sup>1</sup> Severe and often fatal PCP is the commonest of these opportunistic infections, accounting for 51% of primary diagnoses.<sup>4</sup>

### Statistics

As of June 20, 1983, physicians and health departments in the United States

had reported a total of 1,641 cases of AIDS.<sup>4</sup> Of these patients, 644 (39%) are known to have died.

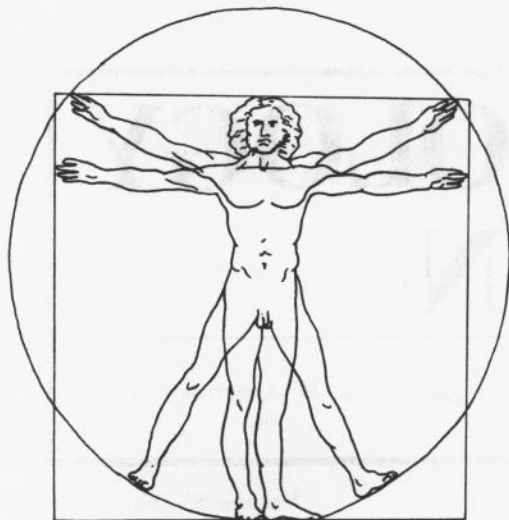
Almost 80% of reported AIDS cases in the United States have been from six metropolitan areas (New York City, San Francisco, Miami, Newark, Houston, Los Angeles).<sup>1</sup> For patients who have had AIDS for two years or more, the mortality is 65%.<sup>5</sup> In Virginia 19 cases have been reported as of July 13, 1983 (seven in 1982 and twelve in 1983). Five of these patients have died.

### Clinical Features

In most patients AIDS presents with one or more of the following: fever, anorexia, weight loss for which no cause is readily apparent, oral thrush, extreme fatigue and lymphadenopathy. Subtle neurological signs have also been reported,<sup>6</sup> as has chronic diarrhea.<sup>7</sup>

These symptoms persist over a period of months or years before diseases such as KS or PCP develop. In KS, the first manifestation is usually the development of purplish cutaneous nodules of the lower extremities. The combination of fever, adenopathy and dark blue to violaceous plaques or nodules on cutaneous or mu-

Continued on page 2



cosal membranes in a homosexual man is highly suggestive of KS associated with AIDS.<sup>8</sup>

### Etiology

The causative agent of AIDS has so far been elusive. The leading hypothesis, based on epidemiologic evidence, is that it is an infectious agent.

The occurrence of AIDS among hemophiliacs, individuals receiving blood transfusions, sexual partners and offspring of AIDS cases, and individuals who share needles in the use of illicit drugs, suggests that the agent is present in blood or other body fluids.

It appears that intimate contact is necessary for the transmission of AIDS.<sup>5</sup> Airborne spread has not been demonstrated.<sup>9</sup>

### Screening Tests

There is no specific laboratory test for AIDS. However, if the diagnosis is sus-

pected, an appropriate way to begin screening is to determine the total lymphocyte count which is low (less than 1000/cu mm on at least two occasions at least two weeks apart).

Due to the defective cell-mediated immunity, AIDS sufferers do not react to skin tests (PPD, candida, mumps, etc). The best antigen for evaluating cell-mediated immunity is streptokinase-streptodornase. Unfortunately, it is no longer commercially available.<sup>10</sup> If there is lymphopenia and evidence of anergy to cutaneous antigens, it would be reasonable to estimate the quantity of T-helper lymphocytes which, if decreased, would support the diagnosis of AIDS.<sup>3</sup> T-suppressor cells may also be increased, causing an alteration of the ratio of helper to suppressor cells (in normal blood the ratio is about 2:1).<sup>3,11</sup> Lymphocytes of AIDS cases also show grossly depressed in vitro proliferation response to mitogens.

Though undoubtedly only of research interest at this time, cytoplasmic vesicular rosettes have been observed in electron micrographs of lymph node biopsies of patients with AIDS.<sup>12</sup> Whether the vesicular rosette will prove to be important in the diagnosis of AIDS remains to be seen. Another test of research interest is the measurement of antibody to the specific cell surface-associated antigens of human T-cell leukemia virus. Such antibodies have been identified in one-quarter of a group of AIDS patients tested.

### Blood Products

The discovery of AIDS in heterosexual hemophiliacs has raised questions regarding the safety of plasma donated for the manufacture of hepatitis B vaccine and clotting factor concentrates by persons who have unrecognized or early AIDS.

However, it is comforting to note that the hemophiliacs with AIDS described so far had received clotting factor concentrate from a number of lots which had been infused into several hundred other hemophiliacs without, apparently, resulting in AIDS.<sup>13</sup> The risk of transmission of AIDS by this route appears, therefore, to be small. Nevertheless, physicians involved in the care of hemophiliacs must now be alert to this risk.

It has been suggested that since factor VIII concentrates are prepared from pooled plasma from 2,000 to 5,000 donors, and Cryoprecipitate on the other hand is prepared from plasma of individual

donors, the risk of transmission of AIDS may be much less if Cryoprecipitate is used.<sup>14</sup>

A small number of AIDS cases who had other known risk factor had received a blood transfusion prior to onset. Here again, the risk of transmission appears to be very small.

### Hepatitis B Vaccine

Some concern has been expressed regarding the possi-

## AIDS in Virg

<b>Age (mean)</b>	34.7 years
<b>(range)</b>	21-55 years
<b>Gender</b>	100% male
<b>Race</b>	72% white 17% black 6% other
<b>Residence</b>	11% Region I 33% Region II 11% Region III 17% Region IV 17% Region V
<b>Associated Diseases</b>	40% Pneumonia 28% Kaposi's 17% Dissemination 11% Dissemination 6% Cryptosporidiosis 6% Toxoplasmosis
<b>Risk Group</b>	67% Homosexual 33% Unknown

### Announcement

**AIDS was made  
an officially  
reportable disease  
on July 25, 1983.**

bility of transmission of AIDS via hepatitis B vaccine, but there is no data to support this. In fact, the recommendations of the Immunization Practices Advisory Committee on Hepatitis B vaccine have been reaffirmed;<sup>15</sup> and all persons at high risk for hepatitis B should receive hepatitis B vaccine, be-

cause the known risk of hepatitis B for persons in high-risk groups far exceeds the theoretical risk of vaccine-induced AIDS.

It is extremely unlikely that any infectious agent could survive the purification and inactivation procedures utilized in the manufacture of hepatitis B vaccine.

## Recommendations

The published guidelines to prevent the transmission of AIDS and precautions for health care and laboratory workers are still applicable.<sup>9,16</sup> In essence, for health workers the precautions are the same as employed in caring for patients with hepatitis B virus infections. The most important points to be noted are:

- As an interim measure, people who might have AIDS or are at an increased risk of developing AIDS, should not be accepted as blood donors.
- Health care professionals should adhere strictly to blood and secretion precautions when caring for patients with AIDS.
- Needles and syringes should be handled with scrupulous care.
- Homosexuals should be advised that sexual intercourse with multiple partners increases the probability of developing AIDS.
- Sexual contact should be avoided with persons known or suspected to have AIDS.

## Reporting

We are in the process of attempting to make AIDS an officially reportable disease. The Division of Epidemiology wishes to thank those physicians who have nevertheless reported AIDS voluntarily, and requests all physicians and hospitals to do so.

Suspected cases *not in a known high risk group* are given highest priority, and should be reported by calling (804) 786-6261; others may be reported by mail.

(Submitted by A. Martin Cader, M.D., Director, Bureau of Communicable Disease Control.)

## Editor's Note:

Because of the AIDS epidemic, Pen-

tamidine supplies have become short in the U.S.A. This drug is available from CDC for the treatment of PCP.

CDC has requested that physicians and hospitals help conserve supplies of this drug by: a) saving reconstituted but unused drug for inclusion in the next day's dose and, b) returning unused drug to CDC if an AIDS patient should expire during a course of treatment.

## References

- <sup>1</sup> MMWR 1982; 31 (37): 507-514.
- <sup>2</sup> JAMA 1983; 249: 2345-2349.
- <sup>3</sup> Clin Microbiol Newsletter 1982; 4 (24): 169-171.
- <sup>4</sup> MMWR 1983; 32 (24) 309-311.
- <sup>5</sup> Infection Control; 1983; (4): 79-80.
- <sup>6</sup> JAMA 1982; 248 (22): 2941-2942.
- <sup>7</sup> Postgraduate Medicine 1983; 73 (5): 138-144.
- <sup>8</sup> JAMA 1982; 247: 1739-1741.
- <sup>9</sup> MMWR 1982; 31 (43): 577-580.
- <sup>10</sup> JAMA 1983; 249: 3209-3211.
- <sup>11</sup> JAMA 1983; 249: 3277.
- <sup>12</sup> N Engl J Med 1983; 308: 819-822.
- <sup>13</sup> JAMA 1983; 249: 745-746.
- <sup>14</sup> N Engl J Med; 1983; 308: 94-95.
- <sup>15</sup> MMWR 1982; 31 (34): 465-467.
- <sup>16</sup> MMWR 1983; 32 (8): 101-103.

## About the *Bulletin*

We are currently several issues behind schedule. The delay was caused by the unanticipated necessity to change printing contractors. Now that we have a new contract, we hope to have your issues up to date in the near future. We took advantage of the delay to improve the quality of the *Bulletin*; a new logo has been designed to symbolize epidemiologic methods, and the text of all future issues will be typeset. We apologize for any inconvenience the delay may have caused you.—Ed.

# Virginia

## —a Profile

I (Northwest)  
II (Northern)  
III (Southwest)  
IV (Central)  
V (Eastern)

*Cystis carinii* pneumonia  
sarcoma  
nated Atypical Mycobacterial infection  
nated Cytomegalovirus infection  
poridiosis  
smosis  
xual or bisexual  
n (under investigation)

Month: May, 1983

Disease	State					Regions				
	This Month	Last Month	Total to Date		Mean 5 Year To Date	This Month				
			1983	1982		N.W.	N.	S.W.	C.	E.
Toxic Shock Syndrome	1	2	4	2	—	1	0	0	0	0
Measles	9	10	21	14	516	4	3	0	0	2
Mumps	1	10	20	29	58	0	0	0	0	1
Pertussis	14	5	37	7	5	0	2	0	12	0
Rubella	0	0	1	8	75	0	0	0	0	0
Meningitis—Aseptic	6	16	54	37	34	1	2	2	0	1
Other Bacterial	21	21	123	88	84	3	3	6	7	2
Reyes Syndrome	0	1	5	2	9	0	0	0	0	0
Legionellosis	2	6	12	5	4	0	0	0	1	1
Hepatitis A (Infectious)	7	10	53	86	102	0	1	3	1	2
B (Serum)	28	54	230	184	184	1	7	1	7	12
*Non-A, Non-B	5	8	38	33	20	1	2	0	0	2
Shigellosis	8	8	57	67	207	1	1	4	0	2
Tuberculosis	42	50	174	232	—	—	—	—	—	—
Salmonellosis	84	109	387	410	365	16	13	10	23	22
Syphilis (Primary & Secondary)	43	49	246	251	240	1	7	6	10	19
Gonorrhea	1467	1614	7709	8186	8456	—	—	—	—	—
Rocky Mountain Spotted Fever	4	4	8	7	14	0	2	0	2	0
Rabies In Animals	67	87	341	181	43	6	59	2	0	0
Meningococcal Infections	9	9	42	32	40	1	1	2	3	2
Influenza	40	175	848	268	2227	4	1	8	0	27
*Campylobacter Infections	40	42	159	84	41	9	4	4	7	16
Kawasaki's Disease	5	7	25	5	8	0	0	0	2	3

\* 3 years.

**Counties Reporting Animal Rabies:** Arlington 2 raccoons; Clarke 1 raccoon; Fairfax 3 foxes, 2 bats, 46 raccoons; Fauquier 1 raccoon; Frederick 1 raccoon; Loudoun 1 skunk, 3 raccoons; Page 1 skunk; Prince Wm. 2 raccoons; Rockingham 1 skunk; Scott 1 skunk; Shenandoah 1 bat; Washington 1 skunk.

**Occupational Illnesses:** Occupational pneumoconiosis 18; Occupational hearing loss 7; Asbestosis 2.

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