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Provisional Public Health 53

Service Inter-Agency  
Recommendation for Screening  
Donated Blood and Plasma for  
Antibody to the Virus Causing  
Acquired Immunodeficiency

Syndrome

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## บทความ

### Provisional Public Health Service Inter-Agency Recommendations for Screening Donated Blood and Plasma for Antibody to the Virus Causing Acquired Immunodeficiency Syndrome

In March 1983, the U.S. Public Health Service issued inter-agency recommendations on the prevention of acquired immunodeficiency syndrome (AIDS) (1). Included was the recommendation that members of groups at increased risk for AIDS should refrain from donating plasma and/or blood. That recommendation was made to decrease the risk of AIDS associated with the administration of blood or blood products, which accounts for about 2% of all reported AIDS cases in the United States.

Evidence has shown that a newly recognized retrovirus is the cause of AIDS. Although this virus has been given several names, including human T-lymphotropic virus type III (HTLV-III) (2), lymphadenopathy-associated virus (LAV) (3), and AIDS-associated retrovirus (ARV) (4), it is referred to as HTLV-III in this discussion. Tests to detect antibody to HTLV-III will be licensed and commercially available in the United States in the near future to screen blood and plasma for laboratory evidence of infection with the virus. The antibody tests are modifications of the enzyme-linked immunosorbent assay (ELISA), which uses antigens derived from whole disrupted HTLV-III (5).

There is considerable experience with the ELISA test in research laboratories, but much additional information will be gathered following its widespread application. In the early phases of testing, a number of false-positive tests may be encountered. Adjustments in interpretation are anticipated as more is learned about the performance of the test in an individual laboratory and about the specific proportion of falsely positive or falsely negative tests in the screening setting where the test is used.

The present recommendations concern the use of these tests to screen blood and plasma collected for transfusion or manufactured into other products. They are intended to supplement, rather than replace, the U.S. Food and Drug Administration's recently revised recommendations to blood and plasma collection facilities and the earlier inter-agency recommendations (1). Additional public health applications of these tests in the understanding and control of AIDS will be described in a subsequent report.

#### BACKGROUND

##### Antibody Detection Studies

The ELISA test has been used in many research programs for detecting antibodies to HTLV-III in patients with AIDS and with AIDS-related conditions. In different studies, HTLV-III antibody was found to range from 68% to 100% of patients with AIDS, and in 84%-100% of persons with related conditions, such as unexplained generalized lymphadenopathy (5-7). Serologic surveys have yielded variable seropositivity rates in groups at increased risk for AIDS: 22%-65% of homosexual men (8-11), 87% of intravenous-drug abusers admitted to a detoxification program in New York City (12), 56%-72% of persons with hemophilia A (13,14), and 35% of women who were sexual partners of men with AIDS (15). In contrast to

the above groups, HTLV-III antibody has been detected in fewer than 1% of persons with no known risks for AIDS (4-10).

The time needed to develop a positive antibody test following infection is not known. Data regarding the interval between infection with HTLV-III and seroconversion are limited. A nurse who sustained a needle-stick injury while caring for an AIDS patient developed antibody between 4 and 7 weeks following exposure (16). Additionally, a recent study described several asymptomatic individuals infected with HTLV-III for more than 6 months in the absence of detectable antibody (17,18). Nonetheless, currently available ELISA tests can be expected to identify most persons with HTLV-III infection.

#### Virus Isolation Studies

HTLV-III has been isolated from blood, semen, and saliva and has been recovered from many individuals in the presence of antibody (19,20). HTLV-III has been isolated from the blood of 85% or more of seropositive individuals with AIDS (21), lymphadenopathy, or other AIDS-associated conditions (2) and from three of four mothers of infants with AIDS (2). The virus has also been isolated from asymptomatic seropositive homosexual men and hemophiliacs, and has been recovered from 95% of seropositive high-risk blood donors who had been implicated in the transmission of AIDS through transfusion (21). The recovery of HTLV-III from these high-risk donors 2 or more years after their initial donation provides evidence that viremia may persist for years in both asymptomatic and symptomatic individuals. HTLV-III has also been isolated from some asymptomatic seronegative persons, but this is the exception (17).

#### Modes of Transmission

Epidemiologic data suggest that the virus has been transmitted through intimate sexual contact; sharing contaminated needles; transfusion of whole blood, blood cellular components, plasma, or clotting factor concentrates that have not been heat treated; or from infected mother to child before, at, or shortly after the time of birth. No other products prepared from blood (e.g. immunoglobulin, albumin, plasma protein fraction, hepatitis B vaccine) have been implicated, nor have cases been documented to occur through such common exposures as sharing meals, sneezing or coughing, or other casual contact.

#### Natural History of Infection

Information about the course of infection with HTLV-III is incomplete, but the majority of infected adults will not acquire clinically apparent AIDS in the first few years after infection. In some studies 5%-19% of seropositive homosexual men developed AIDS within 2-5 years after a previously collected serum sample was retrospectively tested and found to be seropositive. An additional 25% developed generalized lymphadenopathy, oral candidiasis, or other AIDS-associated conditions within the same interval (11,22). The long-term prognosis for most persons infected with HTLV-III is unknown.

#### SCREENING BLOOD AND PLASMA

##### Initial Testing

Persons accepted as donors should be informed that their blood or plasma will be tested for HTLV-III antibody. Persons not wishing to have their blood or plasma tested must refrain from donation. Donors should be told that they will be notified if their test is positive and that they may be placed on the collection facility's donor deferral list, as is currently practiced with other infectious diseases, and should be informed of the identities of additional deferral lists to which the positive donors may be added.

All blood or plasma should be tested for HTLV-III antibody by ELISA. Any blood or plasma that is positive on initial testing must not be transfused or manufactured into other products capable of transmitting infectious agents.

When the ELISA is used to screen populations in whom the prevalence of HTLV-III infections is low, the proportion of positive results that are falsely positive will be high. Therefore, the ELISA should be repeated on all seropositive specimens before the donor is notified. If the repeat ELISA test is negative, the specimen should be tested by another test.

##### Other Testing

Other tests have included immunofluorescence and radioimmunoprecipitation assays, but the most extensive experience has been with the Western blot technique (22), in which antibodies can be detected to HTLV-III proteins of specific molecular weights. Based on available data, the Western blot should be considered positive for antibody to HTLV-III if band p24 or

gp41 is present (alone or in combination with other bands).

#### Notification of Donors

If the repeat ELISA test is positive or if other tests are positive, it is the responsibility of the collection facility to ensure that the donor is notified. The information should be given to the donor by an individual especially aware of the sensitivities involved. At present, the proportion of these seropositive donors who have been infected with HTLV-III is not known. It is, therefore, important to emphasize to the donor that the positive result is a preliminary finding that may not represent true infection. To determine the significance of a positive test, the donor should be referred to a physician for evaluation. The information should be given to the donor in a manner to ensure confidentiality of the results and of the donor's identity.

#### Maintaining Confidentiality

Physicians, laboratory and nursing personnel, and others should recognize the importance of maintaining confidentiality of positive test results. Disclosure of this information for purposes other than medical or public health could lead to serious consequences for the individual. Screening procedures should be designed with safeguards to protect against unauthorized disclosure. Donors should be given a clear explanation of how information about them will be handled. Facilities should consider developing contingency plans in the event that disclosure is sought through legal process. If donor deferral lists are kept, it is necessary to maintain confidentiality of such lists. Whenever appropriate, as an additional safeguard, donor deferral lists should be general, without indication of the reason for inclusion.

#### Medical Evaluation

The evaluation might include ELISA testing of a follow-up serum specimen and Western blot testing, if the specimen is positive. Persons who continue to show serologic evidence of HTLV-III infection should be questioned about possible exposure to the virus or possible risk factors for AIDS in the individual or his/her sexual contacts and examined for signs of AIDS or related conditions, such as lymphadenopathy, oral candidiasis, Kaposi's sarcoma, and unexplained weight loss. Additional laboratory studies might include tests for other sexually transmitted diseases, tests of immune function, and where available, tests for the presence of the virus, such as viral culture. Testing for antibodies to HTLV-III in the individual's sexual contacts may also be useful in establishing whether the test results truly represent infection.

#### RECOMMENDATIONS FOR THE INDIVIDUAL

An individual judged most likely to have an HTLV-III infection should be provided the following information and advice:

1. The prognosis for an individual infected with HTLV-III over the long term is not known. However, data available from studies conducted among homosexual men indicate that most persons will remain infected.
2. Although asymptomatic, these individuals may transmit HTLV-III to others. Regular medical evaluation and follow-up is advised, especially for individuals who develop signs or symptoms suggestive of AIDS.
3. Refrain from donating blood, plasma, body organs, other tissue, or sperm.
4. There is a risk of infecting others by sexual intercourse, sharing of needles, and possibly, exposure of others to saliva through oral-genital contact or intimate kissing. The efficacy of condoms in preventing infection with HTLV-III is unproven, but the consistent use of them may reduce transmission.
5. Toothbrushes, razors, or other implements that could become contaminated with blood should not be shared.
6. Women with a seropositive test, or women whose sexual partner is seropositive, are themselves at increased risk of acquiring AIDS. If they become pregnant, their offspring are also at increased risk of acquiring AIDS.
7. After accidents resulting in bleeding, contaminated surfaces should be cleaned with household bleach freshly diluted 1:10 in water.
8. Devices that have punctured the skin, such as hypodermic and acupuncture needles, should be steam sterilized by autoclave before reuse or safely discarded. Whenever possible, disposable needles and equipment should be used.
9. When seeking medical or dental care for intercurrent illness, these persons should inform those responsible for their care of their positive antibody status so that appropriate evaluation can be undertaken and precautions taken to prevent transmission to others.

10. Testing for HTLV-III antibody should be offered to persons who may have been infected as a result of their contact with seropositive individuals (e.g., sexual partners, persons with whom needles have been shared, infants born to seropositive mothers).

Revised recommendations will be published as additional information becomes available and additional experience is gained with this test.

Reported by Centers for Disease Control; Food and Drug Administration; Alcohol, Drug Abuse, and Mental Health Administration; National Institutes of Health; Health Resources and Services Administration.

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รายงานย่อยอทิวัตกโรค - นครนายกEltor cholera - Nakhon Nayok

วันที่ 5 พฤศจิกายน 2527 สำนักงานสาธารณสุขจังหวัดนครนายกได้รับแจ้งจากโรงพยาบาลนครนายกว่าตรวจพบเชื้อทิวัตกโรค biotype Eltor, serotype Inaba จากผู้ป่วยหญิงไทย อายุ 40 ปี อาชีพรับจ้างท่านา อยู่บ้านเลขที่ 16 หมู่ที่ 3 ตำบลลาลิกา อำเภอเมือง จังหวัดนครนายก เข้ารับการรักษาที่โรงพยาบาลนครนายก เมื่อวันที่ 2 พฤศจิกายน

จากการสอบถามโรคทราบว่าเริ่มป่วยเมื่อ 2 พฤศจิกายน 2527 ด้วยอาการอุจจาระร่วงอย่างแรงเกินกว่า 20 ครั้ง อาเจียน ปวดท้อง เป็นตะคริวตามกล้ามเนื้อสาเหตุของการเจ็บป่วยครั้งนี้ได้ความว่า เมื่อวันที่ 1 พฤศจิกายน ได้รับประทานหอยย่าง (ไม่ระบุชนิด) ร่วมกับสมาชิกในครอบครัวอีก 4 คน เข้าใจว่าเป็นการย่างที่ไม่สุกจากการทำ Rectal swab ผู้สัมผัสในครอบครัวอีก 4 คน พบว่าเป็น Healthy carrier 2 คน ส่วนอีก 2 คน ไม่พบเชื้อทิวัตกโรคหลังจากเจ้าหน้าที่ดำเนินการควบคุมและป้องกันโรคอย่างเข้มแข็งแล้ว ไม่มีผู้ป่วยรายใหม่เกิดขึ้นในหมู่บ้านนี้อีก

ผู้รายงาน เจ้าหน้าที่ระบาดวิทยา จังหวัดนครนายก

Monitoring susceptibility of bacterial pathogens  
to commonly used antimicrobials

การเฝ้าระวังความไวของเชื้อแบคทีเรียต่อยาปฏิชีวนะสัปดาห์ที่ 29-40 (2527)

ผลการเฝ้าระวังความไวและการต่อต้านยาปฏิชีวนะที่ใช้กันทั่วไปของแบคทีเรีย 9 ตัว โดยคณะกรรมการตรวจจากศูนย์วิทยาศาสตร์การแพทย์เขต และหน่วยชั้นสูตร สาธารณสุขต่าง ๆ ทั่วประเทศ รวม 11 จังหวัด (ราชบุรี ชลบุรี จันทบุรี ระบุรี พิษณุโลก อุตรดิตถ์ นครราชสีมา ขอนแก่น สงขลา สุราษฎร์ธานี และนครศรีธรรมราช)

โดยรายงานผลเป็นสัปดาห์ ผลการตรวจของสัปดาห์ 29-40 เป็นดังนี้

<u>Organism</u>	<u>Antibiotic</u>	<u>Total tested</u>	<u>Sensitivity ( % )</u>
<u>V. cholerae</u>	Tetracycline	6	100.00
<u>S. typhi</u>	Chloramphenicol	150	98.00
	Ampicillin	159	67.30
	SMX/TMP	133	99.25
<u>Shigella spp.</u>	Ampicillin	130	16.92
	SMX/TMP	117	79.49
<u>H. influenzae</u>	Ampicillin	36	80.56
<u>N. gonorrhoea</u>	Penicillin G.	15	60.00
<u>S. aureus</u>	Methicillin	595	97.31
<u>P. aeruginosae</u>	Amikacin	1116	95.88
	Carbenicillin	751	45.94
	Gentamycin	1094	50.82
<u>Klebsiella spp.</u>	Kanamycin	1057	54.68
	Gentamycin	1018	79.56
<u>E. coli</u>	SMX/TMP	518	48.84
	Kanamycin	554	44.94

## ສອນກາຮັດໂຮກ

ອທິວາຕົກໂຮກ ( Eltor cholera ) ສັບດາທີ່ຮະຫວ່າງວັນທີ 27 ມັງກອນ - 2 ກຸມພາພັນທຶນ 2528 ໄດ້ຮັບຮາຍງານຜູ້ປ່ວຍ 55 ຮາຍ ຕາຍ 1 ຮາຍ ຈາກ 8 ຈັງຫວັດ ເປັນຜູ້ປ່ວຍທີ່ມີວັນເຮີ່ມປ່ວຍ ຮະຫວ່າງວັນທີ 27 ມັງກອນ - 2 ກຸມພາພັນທຶນ 51 ຮາຍ ຕາຍ 1 ຮາຍ ວັນທີ 20 - 26 ມັງກອນ 2 ຮາຍ ວັນທີ 13 - 19 ມັງກອນ 1 ຮາຍ ວັນທີ 6 - 12 ມັງກອນ 1 ຮາຍ ຈັງຫວັດທີ່ຮາຍງານ ຜູ້ປ່ວຍຮາຍໃໝ່ ເຂົ້າມາໃນສັບດາທີ່ນີ້ເຄືອ.-

- ກຽງເທັນາທັນາຄ ຊ ຮາຍ ທີ່ເຂັດພະໂໂນນິງ ເຂດດູສີຕ ແລະ ເຂດນາງກະປີ ເຂດລະ 1 ຮາຍ
- ສຸມທຽບສາຄ ຊ ຮາຍ ທີ່ອຳເກົດເມືອງ
- ອ່າງທອງ 1 ຮາຍ ທີ່ອຳເກົດປ່າໄມໂກ
- ນະບູຮີ 45 ຮາຍ ຕາຍ 1 ຮາຍ ທີ່ອຳເກົດເມືອງທັງໝົດໃນຈຳນວນນີ້ 44 ຮາຍ ຕາຍ 1 ຮາຍ ເປັນນັກໂທໜ້າຍໃນເຮືອນຈຳນາງຂວາງແລະ ຮາຍທີ່ຄື່ງແກ່ກ່ຽວມ ອາຍຸ 42 ປີ
- ນະຄອນສົງລະອົມບັນດາ 1 ຮາຍ ທີ່ອຳເກົດຕາຄລື
- ນະຄອນຫຼວງວຽງຈັນ 1 ຮາຍ ທີ່ອຳເກົດບັນດາ
- ສົງລາ 2 ຮາຍ ທີ່ອຳເກົດເມືອງ
- ສຸກເກົມ 1 ຮາຍ ທີ່ອຳເກົດອົມລັກ

ຮັບຮາຍງານຜູ້ປ່ວຍຕັ້ງແຕ່ຕົ້ນປີທີ່ວັນປະເທດປ່ວຍ 94 ຮາຍ ຕາຍ 2 ຮາຍ ຜູ້ປ່ວຍທັງໝົດຄວາມເຂື້ອທິວາຕ່າງໆ ເລືດທ່ອງ ອີນານາ

### ໂຮກຕິດຕໍ່ອັນດຽບ

#### ອທິວາຕົກໂຮກ

ອາຟຣິກາ	ປ່ວຍ	ຕາຍ	ປ່ວຍ	ຕາຍ
ເຊັ່ນກາລ 10 ຕົວ.- 25 ພຍ. 436	53	ມາລີ	7-13 ມັກ.	10
26 ພຍ.- 2 ພົມ.	96	9		2
3-9 ພົມ.	49	4		
10-16 ພົມ.	20	4		

#### ກາພໂຮກ

ອາເມຣິກາ	ປ່ວຍ	ຕາຍ
ນະຄອນຫຼວງວຽງຈັນ 7 ກົມ.-11 ຕົວ. 9	2	