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Huey Lewis & the News Makes Donation to Establish Physician AIDS Training Center

A first-of-its-kind AIDS training program will begin at SFGH and UCSF thanks to a donation of \$225,000 by the popular Bay Area rock band Huey Lewis and the News. The program will be named the HLN Physicians AIDS Training Center.

"This will be the world's first dedicated program to train community physicians specifically in the care of AIDS patients, and there is a clear-cut need for it," said Paul Volberding, MD, director of AIDS Activities at SFGH.

Bob Brown, manager of the band, had seen a "60 Minutes" TV special on the AIDS epidemic last year featuring Volberding and the SFGH inpatient Ward 5A. This prompted Brown to meet with Volberding and then speak to members of the band, who were moved by the enormity of the AIDS problem in San Francisco.

The HLN Physicians AIDS Training Center will begin with a faculty of 20 from UCSF

and SFGH and initially will have up to 10 practicing community physicians as students. Volberding said the program first will be targeted to local physicians, then others from around the country and, eventually, from around the world.

AIDS Resource Program

Philip R. Lee, M.D.
Director

Patricia E. Franks
Coordinator

Institute for Health Policy Studies

University of California, San Francisco

1326 Third Avenue
San Francisco, CA 94143-0936

415/ 476-8263

The AIDS Resource Program is a program of information, education and training, technical assistance, and policy research and analysis linking communities nationwide in the fight against AIDS.
Supported by a grant from The Robert Wood Johnson Foundation.

ACQUIRED IMMUNODEFICIENCY SYNDROME

Constance B. Wofsy, M.D.

I. Introduction: AIDS (acquired immunodeficiency syndrome) is a condition that first appeared in 1979. It is thought to be caused by an infectious agent which by itself or in association with other factors, causes immunosuppression leading to the emergence of Kaposi's sarcoma (KS), pneumocystis pneumonia (PCP), and other opportunistic infections (OI).

A. Historic chronology of AIDS.

1. 1979: First noted.
2. July 1981: First announcement of KS and PCP to medical community (MMWR).
3. December 1981: Immunodeficiency found to be associated with KS and PCP (N Engl J Med).
4. Early 1982: "AIDS" coined as the name of the disease.
5. Spring 1982: Thought to be transmissible; infection control practices initiated.

B. Definition (CDC):

1. Biopsy or culture proven Kaposi's sarcoma or an infection that is moderately to highly predictive of a defect in cell-mediated immunity.
2. Occurring in a person without a previously recognized predisposing condition or cause of cell-mediated immune deficiency.

C. AIDS-related conditions:

1. Other malignancies:
 - a. Non-Hodgkin's lymphoma.
 - b. Squamous cell carcinoma: tongue, anus.
 - c. CNS lymphoma (defines AIDS).
2. Lymph node syndrome.
3. Idiopathic thrombocytopenic purpura.
4. Hematologic abnormalities: anemia, neutropenia.
5. Transient immunologic defects, e.g., altered HS ratios.
6. Unexplained fever, weight loss, and systemic symptoms (wasting) in individuals at risk for AIDS.
7. ? Asymptomatic carrier state.

D. Diagnosis: There is no diagnostic test at this time which has the sensitivity or specificity to detect individuals afflicted with AIDS.

1. Tests under evaluation for use in screening are:

- a. Alpha 1 thymosin.
- b. Beta 2 microglobulin.
- c. Acid labile alpha interferon.
- d. Helper:suppressor T cell ratio (H/S ratio).

II. Epidemiology (Table 1)

Table 1
REPORTED CASES OF AIDS AND CASE-FATALITY RATES BY DISEASE CATEGORY
JUNE 1, 1981 TO SEPT. 2, 1983, UNITED STATES

Disease Category	No. of Cases (% of Cases)		Deaths No. (%)		Case-Fatality Ratio
KS without PCP	614	(27%)	131	(15)	21%
Both KS and PCP	172	(50%)	98	(57)	43%
PCP without KS	1227	(8%)	533	(11)	56%
Other opportunistic infections	361	(15%)	176	(17)	44%
Total	2374	(100%)	968	(100)	38%

Material provided by the CDC.

- A. Age: 0-60, 90% are age 20-49.
- B. Sex: Male: 93% Female: 7% Total: 2500
- C. Race: Homosexuals: predominantly Caucasian.
 Heterosexuals: predominantly Black and Hispanic.
 All races reported (2 Asians).
- D. Geographic distribution (Tables 2, 3, and 3A).

Table 2
REPORTED CASES OF AIDS BY STANDARD METROPOLITAN STATISTICAL
AREA (SMSA) OF RESIDENCE, JUNE 1, 1981 TO SEPT. 2, 1983, UNITED STATES

SMSA of Residence	Cases	Percentage of Total Cases	Cases/Million Population
New York City	970	40.9	106.4
San Francisco	286	12.0	88.0
Miami	107	4.5	65.8
Newark	63	2.7	32.0
Los Angeles	161	6.8	21.5
Elsewhere, USA	789	33.1	3.9
Total	2374	100.0	10.5

Material provided by the CDC.

Table 3
REPORTED CASES OF AIDS FROM OUTSIDE THE UNITED STATES
JUNE 1, 1981 TO SEPT. 2, 1983

Country	Number of Cases
Western Europe	44
Haiti	36
Canada	27
Africa	5
So. America	2
Mexico	2
Caribbean	2
Middle East	2
Asia	1
Australia	1
Unknown	1
Total	123

Material provided by the CDC.

Table 3A
EUROPEAN AIDS
(as of November 1983)

Country	Number of Cases
France	94
West Germany	42
Belgium	42
United Kingdom	24
Switzerland	17
Denmark	13
Austria	7
Czechoslovakia	2
Netherlands	12
Total	243

6

E. Populations affected (Table 4).

Table 4
REPORTED CASES OF AIDS BY MUTUALLY EXCLUSIVE
RISK GROUPS AS OF 9/2/83, UNITED STATES

Risk Group	Percentage of Cases
Homosexual or bisexual men	71.8
IV drug users, no history of homosexuality	16.6
Haitians	4.8
Hemophiliacs	.7
No apparent risk group	6.1

Material provided by the CDC.

1. Females with AIDS: 109. IV drugs 52%, Haitian 9%, unknown 39%.
2. Infants and neonates: post-transfusion or born of infected mothers.
Not officially classified as AIDS by CDC.
30 cases: 16 male, 14 female.
Age at diagnosis: 4-42 mos., average 8 mos.
N.Y. - 11, CA - 6, FL - 6, NJ - 3, Other - 4.

III. Immunology**A. Immunologic abnormalities associated with AIDS.**

1. Neutrophil function: intact.
2. Humoral immunity: abnormal; polyclonal B cell activation. Decreased response to B cell mitogens.
3. Cellular immunity: markedly impaired.
 - a. Cutaneous anergy.
 - b. Lymphopenia.
 - c. Decreased H/S ratio.
 - d. Decreased antigenic and mitogenic responses.
4. Decreased natural killing.
5. Decreased interferon production.
6. Defects persist after resolution of PCP or regression of KS.

B. Tables 5 and 6.

Table 5
H/S RATIO IN VARIOUS POPULATIONS

	<u>Mean</u>	<u>Range</u>
Heterosexuals	2	1.5-2.5
Classic Kaposi's	2	1.5-2.5
Healthy homosexuals	.9	.2-2
Lymph node syndrome	.7	.2-1.5
Kaposi's sarcoma	.6	.1-1.5
PCP and OI	.2	.01-.5

Table 6
IMMUNE STUDIES IN SUBSETS OF AIDS PATIENTS

	<u>Homosexual</u>			<u>Heterosexual</u>	
	<u>KS</u>	<u>Lymph Node Syndrome</u>	<u>Healthy</u>	<u>KS</u>	<u>Normal</u>
N	22	8	19	6	22
H:S ratio	.48(+.35)	.70(+.25)	1.2(+.55)	1.79(+.84)	1.75(+.64)
Pokeweek mitogen (% of control)	30	42	75	82	100
PHA (% of control)	68	88	96	71	100

Modified from Stahl R, et al: Immunologic abnormalities in homosexual men. Am J Med 73:171, 1982.

IV. State of knowledge - AIDS

- A. Etiology: presumed to be viral.
- B. Transmission similar to hepatitis B (blood and semen; other bodily fluids unknown).
- C. Incubation (6-24 months; may be up to 36 months).
- D. Period of transmissibility: months prior to clinical illness.
- E. Diagnosis by the development of infection or malignancy.
- F. Treatment: none; treatment for KS and OI.
- G. Cures: none to date.

8

V. Lymph node syndrome**A. Criteria for diagnosis:**

1. Lymphadenopathy of at least three months duration involving two or more extrainguinal sites, confirmed by physician examination.
2. Absence of any current illness or drug use known to cause lymphadenopathy.
3. Presence of reactive hyperplasia in a lymph node, if biopsied.

B. Epidemiology: virtually identical to documented AIDS patients.**C. Associated findings:**

1. Constitutional symptoms in 15-50% of patients including fatigue >50%, fever 20-40%, night sweats 40%, >5 lb. weight loss 5-30%, splenomegaly c. 25%.
2. Immunologic alteration: H:S ratio mean .42, range .12-1.5 (normal ca. 2.0 mean).

D. Progression to AIDS: Various studies with 1-2 year followup = 2-20% develop KS, PCP or OI.**E. Relationship to AIDS** not defined. Does not constitute a diagnosis of AIDS.**VI. Kaposi's sarcoma****A. Subgroups.**

1. African.
2. Elderly European men.
3. Renal transplant patients.
4. AIDS.

B. Diagnosis.

1. Biopsy: oldest lesions best. Histology of KS in AIDS and other subgroups is identical. Endothelial cell origin.
2. Immunology: immune status in KS in elderly Europeans is normal. In AIDS immune function markedly impaired.
3. Treatment:
 - a. VP-16.
 - b. Vinblastine: 5-10 mg IV q week (ca. 50% complete or partial response).
 - c. Adriamycin, bleomycin velban (ABV): used infrequently; high incidence of OI.
 - d. Interferon: studies in NY, SF, LA.
 - e. Irradiation for local disease.
4. Prognosis: existence of "B" symptoms associated with poor prognosis.

VII. Opportunistic infections: evaluation

A. Methods of presentation of opportunistic infections.

1. Pulmonary.
2. CNS.
3. GI.
4. Fever.
5. Cutaneous.

B. Pulmonary presentation: Case presentation and initial evaluation.

1. Case:

A 29 year old gay male is admitted with two weeks of intermittent fever, cough, SOB and myalgias, associated with one month of fatigue and a 10 lb. weight loss. Smoker; uses nitrite inhalants; promiscuous lifestyle.

PMH: Syphilis X 2, GC X 2, no herpes, hepatitis or enteric infections.

PE: Temp. 105°F, resp. 38, pulse 120

Basilar wheezing, scant rales

Cervical, inguinal, axillary, and epitrochlear nontender adenopathy

8 mm reddish macule on forearm

Lab: ABG pO₂, 56, pC₂ 30, pH 7.45

CXR: diffuse, symmetrical, perihilar interstitial infiltrates

CBC: WBC 3,300 81P, 3B, 10 L, 6 mono, HCT 32, platelets 109,000

Cold agglutinins bedside (-), SMA-20 albumin 3.5, globulin 4.7, ESR 86

2. Differential diagnosis (1983).

- a. Pneumocystis pneumonia (PCP).
- b. Mycoplasma pneumonia.
- c. Cytomegalovirus (CMV).
- d. Kaposi's sarcoma (KS).
- e. Other opportunistic infection (OI).

3. Evaluation of a typical case.

- a. History: include sexual preference and habits, drug, nitrite, medication use, VD history including hepatitis, herpes, CMV. Pursue symptoms of stomatitis, odonyphagia, rectal disorders.
- b. Physical exam: usual exam with particular attention to:
 - (1) Cutaneous exam, especially perianal (herpes, Kaposi's).
 - (2) Lymph nodes.
 - (3) Fundoscopic (cotton wool spots).
 - (4) Oral (thrush, Kaposi's).
 - (5) Chest (PCP and other opportunistic pneumonias).
 - (6) Abdominal: hepatosplenomegaly (gay lymph node, Kaposi's, lymphoma).

c. Pulmonary evaluation:

- (1) Chest x-ray (diffuse interstitial infiltrates, CXR normal in c. 10% of confirmed PCP).
- (2) Arterial blood gases (decreased pO_2).
- (3) Pulmonary function tests [restrictive pattern, normal flow rates, decreased diffusing capacity (DLCO)].
- (4) Gallium scan (positive in some interstitial pneumonias including PCP. May be helpful in following a case of PCP or suggesting the diagnosis when CXR is negative).
- (5) Transbronchial or open lung biopsy: Process for routine bacteria, viruses, mycobacterium, fungus, Legionella. Include touch preps (Giemsa stain for pneumocystis, viral inclusion bodies)—pathology (H&E, acid fast and silver methenamine).

d. Other laboratory:

- (1) CBC/diff: neutropenia, lymphopenia, anemia (late).
- (2) Skin tests: PPD, mumps, Candida, Trichophyton, ca. 10% of normals may be nonreactive. Skin test reactivity has been seen in documented AIDS patients.
- (3) CMV culture: Semen (best), urine, blood (if dissemination suspected); lung biopsy material.
- (4) Serology: HBsAg; CMV, EBV, herpes, VDRL.
- (5) Immunologic studies: T and B lymphocyte numbers; helper:suppressor ratio determined with monoclonal antibodies. Functional studies (antibody production, mitogenesis, etc.).
- (6) Biopsies (if indicated):
 - (a) Transbronchial (TBB) or open lung. TBB very successful for PCP.
 - (b) Skin or mouth: any suspicious lesion for KS (older lesion best).
 - (c) Lymph node (not groin).
 - (d) Bone marrow (for AFB stain and culture).
- (7) Other: KOH mouth; herpes culture of ulcerative lesions; Crypto Ag; stool O&P; CT scan abdomen.

VIII. Pneumocystis pneumonia

A. Epidemiology.

1. Protozoan widespread in nature. Rarely reported in normal host.
2. Commonly seen in premature infants and immunocompromised patients.
3. Person-to-person transmission suspected but not documented. Clusterings of cases reported. Airborne spread documented in laboratory animals.
4. Infections presumed to be result of activation of latent infection. 63% of normal children have antibodies by age 4.

B. Clinical.

1. Presentation in AIDS series similar to compromised host series.
 - a. Fever 80%.
 - b. Dyspnea 80%.
 - c. Weight loss 75% (in AIDS).
 - d. Dry cough 70%.
 - e. Duration of symptoms (1 week-8 months).
 - f. Hypoxia (often marked).
 - g. X-ray: diffuse interstitial infiltrate, usually bilateral, especially perihilar, occasionally nodular. Normal chest x-rays have been reported in biopsy confirmed cases. (Hypoxia usually present.) Effusions rare. Gallium scan may be positive.

C. Diagnosis.

1. Transbronchial lung biopsy or open lung biopsies required in most cases. Giemsa touch preparations very sensitive.
2. Diagnosis rarely made on sputum or transtracheal aspirate. Bronchial washings often positive.
3. Methenamine silver touch prep always positive when tissue was positive in one series of 18 patients. Touch prep stained with Giemsa can be evaluated in 2-4 hours after biopsy.
4. As little as 24-48 hours of treatment may interfere with the ability to make diagnosis in leukemic patients. AIDS patients, however, clear pneumocystis slowly.
5. No useful serologic tests; Ab present in 70-80% of normals; Ag not helpful in establishing the diagnosis at this time.

D. Treatment.

1. TMP-SMX (20 mg/kg TMP, 100 mg/kg SMX/d) in 4 divided doses X 2-4 weeks; 3 weeks usual. Initial IV, finish p.o. Note high fluid requirement for IV administration. Side effects in 60-85%: rash, neutropenia, fever.
2. Pentamidine isethionate 4 mg/kg/d, IM once daily X 2-3 weeks. Must be obtained from the CDC (404/329-3670). Side effects: hypotension, nausea, vomiting, increased BUN, abnormal LFT's, hypoglycemia, inflammation at injection site.
 - a. AIDS: 47% require pentamidine vs 9% of standard immunocompromised patients with PCP (CDC data).

12

E. Outcome of treatment (Table 7).

Table 7
PNEUMOCYSTIS IN AIDS: RESULTS OF TREATMENT FIRST EPISODE

Drug	Total Cases	Survived	%
TMP/SMX	107	88	82
TMP/SMX Pentamidine (toxicity)	41	41	100
TMP/SMX Pentamidine (failure)	37	4	11
Pentamidine	9	4	44
Pentamidine (TMP/SMX toxicity)	<u>4</u>	<u>4</u>	<u>100</u>
Total	198	141	71

F. Prophylaxis.

1. TMP-SMX (5 mg/kg TMP; 25 mg/kg SMX/d). Use not established in this population. High incidence of side effects (rash, neutropenia).

IX. Other methods of presentation

A. CNS (Table 8).

Table 8
CLINICAL PRESENTATION OF CNS DISEASE IN AIDS

Clinical Features	Most Likely Diagnoses
Progressive dementia	Subacute encephalitis PML
Chronic meningitis	Cryptococcus M. avium intracellulare M. tuberculosis
Seizures or increased intracranial pressure	Toxoplasmosis CNS lymphoma
Retinal abnormalities	Cotton wool spots CMV Toxoplasmosis

B. GI (Table 9).

Table 9
PRESENTATIONS OF GI DISEASE

Clinical Features	Most Likely Diagnosis
Glossitis, stomatitis	Candida
Esophagitis	Candida, herpes
Diarrhea	CMV colitis M. avium intracellulare Cryptosporidium Isospora belli
Proctitis	Herpes

C. Cutaneous.

1. Kaposi's sarcoma.
2. Herpes - mucocutaneous.

D. Fever.

1. Any of the above.
2. Especially consider mycobacterium avium-intracellulare.

X. Opportunistic infections by category

A. Protozoal.

1. Pneumocystis pneumonia (ca. 85 % of those with OI).
2. Toxoplasmosis.
 - a. Strong predilection for the central nervous system.
 - b. Serologic evidence of infection by titer rise and IgM antibodies may be missing.
 - c. Treatment - pyrimethamine and sulfadiazine - prolonged treatment necessary.
3. Cryptosporidiosis and isospora: severe prolonged diarrhea. Diagnosis by bowel biopsy or special O & P techniques. No known cure.

B. Fungal.

1. Candidiasis: oral and esophageal. Thrush in a gay male not on antibiotics strongly suggests AIDS. Treatment: clotrimazole troches 5 p.o./d, nystatin vaginal suppositories qid to bid, H₂O₂ 50 % gargle, ketoconazole, amphotericin.
2. Cryptococcus: pneumonia and meningitis. Treatment: amphotericin and 5-fluorocytosine.

14

3. Aspergillosis - CNS or disseminated.
4. Other - disseminated histoplasmosis or coccidioidomycosis per se do not meet the definition of AIDS but should be viewed with suspicion in a person at high risk.

C. Viral.

1. Cytomegalovirus (CMV).
 - a. >90% of AIDS patients have evidence of past CMV infection (vs ca. 50% of general population).
 - b. Patients with AIDS often shed CMV in urine or semen, not necessarily associated with active disease due to CMV.
 - c. Disease associated with CMV includes pneumonia, colitis, retinitis, adrenalitis, mononucleosis and disseminated infection.
 - d. Diagnosis of CMV disease requires demonstration of CMV in tissue or blood. Note that culture may require several weeks. DNA probes available in some research centers.
 - e. No treatment currently available.
2. Herpes simplex virus (HSV): severe, progressive mucosal infections and esophagitis. Treatment: topical or intravenous acyclovir (IV form released November 1982). Topical: acyclovir ointment 5%, apply with finger cot q3h, IV 5-7.5 mg/kg IV tid x 7 days or longer.
3. Progressive multifocal leukoencephalopathy (PML): progressive CNS derangement seen in immunocompromised patients. Due to papovavirus. Treatment: none.

D. Bacterial.

1. Mycobacterium avium intracellulare - runyon group III. Progressive systemic disease. Clinical: fevers wasting. Diagnosis: tissue biopsy, lymph node, bone marrow, blood (green top into TB medium). Treatment: highly resistant to all routine antituberculous agents. Ansamycin and Clofazamine (experimental). Prognosis poor.

XI. Implications for medical practice

A. Infection control for AIDS patients and hospital workers.

1. Identify patients for whom infection control measures apply. This includes persons with:
 - a. AIDS as defined by the CDC case definition.
 - b. Chronic generalized lymphadenopathy.
 - c. Unexplained weight loss and fever in high risk groups.
 - d. Conditions requiring hospitalization or outpatient evaluation to "rule out" AIDS.
2. Private room strongly recommended. If shared, must not be in a room with an impaired host.
3. Needle and blood precautions - special labels "H/A precautions."
4. Secretion precautions.

5. Masks for sustained direct exposure to actively coughing patients.
 6. Sterilization of all instruments including lensed instruments.
 7. Pregnant women advised to avoid direct patient contact (CMV).
 8. Active education series for all personnel in hospitals caring for such patients.
- B. Recognize the syndrome early.
1. Mandatory inquiry about sexual and drug practices.
 2. Aggressive evaluation of pulmonary and dermatologic disease in high risk populations.
- C. Advice to patients:
1. Establish health insurance (for at risk group).
 2. Rest, good diet.
 3. Lifestyle counseling for risk reduction.
 4. If sexually active, avoid exchange of secretions, educate partner.
 5. No blood donations.
 6. Support groups.
- D. Reporting: report documented cases to AIDS Activity Center, CDC, Atlanta, Georgia, or to local Department of Health authorities.
- E. Prevention:
1. Counsel homosexuals and IV drug users about the newly recognized risks associated with this sexually transmitted and blood transmissible agent.
 2. High risk individuals advised through blood bank and social/political organizations to avoid blood donation.
 3. Ongoing studies by blood banks.
 4. Public education.
 5. Telephone numbers:
 - a. Nat'l AIDS hot line (Washington, D.C.): 800/342-2437 (342-AIDS).
 - b. AIDS KS Foundation, S.F.: 415/864-4376.
 - c. CDC AIDS Activities, Atlanta: 404/329-3472.
 - d. CDC Parasitic Diseases, Pentamidine Release, Atlanta: 404/329-3670.
- F. Questions:
1. Hepatitis B vaccine.
 2. HBIG.
 3. CPR.

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19

KAPOSI'S SARCOMA: TREATMENT OPTIONS AND NURSING MANAGEMENT

GAYLING GEE, RN, MS

I. Pathophysiology

- A. "Classical" Kaposi's Sarcoma
- B. "AIDS" Kaposi's Sarcoma
- C. Clinical presentation and course

II. Treatment options and side effects

- A. Vinblastine (Velban)
- B. Vincristine (Oncovin)
- C. Ectoposide (VP-16 / epipodophyllotoxin)
- D. Adriamycin/Bleomycin/Vinblastine (ABV)
- E. Interferon
 - Alpha
 - Gamma
- F. Interleukin-2
- G. ICRF-159 (Razoxin)
- H. Cis-retinoic acid (Isoretinoin)
- I. Dapsone
- J. Radiation therapy

III. Nursing management

- A. Assessment/Identification/Referral
- B. Education/Counseling/Support
- C. Chemotherapy side effects
- D. Immunotherapy side effects
- E. Radiotherapy side effects

19

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20

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