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EDITORIAL

Precautions for Patients Hospitalized with Acquired Immunodeficiency Syndrome

In June and July of 1981, the Centers for Disease Control (CDC) reported to the medical community an unprecedented occurrence of Kaposi's sarcoma and *Pneumocystis carinii* pneumonia among apparently previously healthy homosexual men.[1,2] One and a half years later, over 1,000 individuals with a similar illness characterized by unusual rare malignancies and opportunistic infections have been reported to CDC. Multiple detailed reports have appeared in the literature clearly documenting this unique pattern of disease,[3-6] and the number of cases continued to increase at approximately two to three cases per day in the United States with increasing case reports throughout Europe and Africa.[7]

Since a common denominator in all of these patients appears to be the development of a profound immunosuppressed state, the disease has been referred to as the acquired immunodeficiency syndrome (AIDS). Although the etiology of this disease continues to elude investigators, nearly all the patients with AIDS have demonstrated a selective impairment of the cell-mediated immune response characterized by depletion of the T-lymphocytes, specifically the inducer or T-helper lymphocytes.[8] This immunosuppression leads to the acquisition of opportunistic infections, including *Pneumocystis carinii* pneumonia, cryptosporidiosis, disseminated toxoplasmosis, cytomegalovirus, fungal and atypical mycobacterial infections. Other AIDS patients develop for equally unknown reasons, tumors such as Kaposi's sarcoma or diffuse undifferentiated non-Hodgkins lymphoma. The resultant mortality from these diseases is presently 37%, but in those patients who have had AIDS for two years or more, the mortality is an astounding 65%.

Because of the increasing number of identifiable cases, the evolving epidemiology and the associated high mortality, CDC recently outlined recommendations on the hospitalization of AIDS patients and precautions for clinical and laboratory staffs.[9] Since the etiology of AIDS is unknown, the recommendations were based on the epidemiology and apparent transmission of a probable viral etiologic agent. Certainly the predominance of homosexuality, Haitian refugees, intravenous drug abuse and exposure to factor VIII products suggest an epidemiology similar to hepatitis B virus infection. The reports of transfusion-acquired AIDS in a newborn,[10] the development of AIDS in children born to mothers with AIDS[11] and the increasing number of hemophiliacs receiving factor VIII concentrates[12] suggest transmission through blood products or parenteral injection. Since 74% of the affected patients acknowledge homosexuality, and due to the recent report of AIDS developing in female partners of male AIDS patients,[13] it appears that intimate, direct contact involving mucosal surfaces is involved in many other cases. Thus far, most surveys have failed to demonstrate any evidence for AIDS transmission to hospital personnel from contact with affected patient or clinical specimens. Similarly, airborne spread or interpersonal spread through casual contact has not been demonstrated.[9] Consequently, CDC in an issue of the *Morbidity and Mortality Weekly Report* recommended the following general guideline for clinical and laboratory staff caring for AIDS patients:

> At present, it appears prudent for hospital personnel to use the same precautions when caring for patients with AIDS as those used for patients with hepatitis B virus infection in which blood and body fluids likely

Address reprint requests to Thomas C. Quinn, M.D., The Division of Infectious Diseases, Department of Medicine, Johns Hopkins School of Medicine, Baltimore, MD 21205.

to have been contaminated with blood are considered infective. Specifically, patient-care and laboratory personnel should take precautions to avoid direct contact of skin and mucous membranes with blood, blood products, excretions, secretions, and tissues of persons judged likely to have AIDS.[9]

Identification of patients who have AIDS or "probable AIDS" is of course a critical factor in establishing hospital guidelines on isolation, and labeling a patient with AIDS should not be taken lightly since the associated morbidity, mortality and social implications are now well known by the public. Since the etiologic agent is unknown and the incubation period is prolonged (estimated at three to nine months), identification of patients with AIDS, "probable AIDS" or "pre-AIDS" is sometimes rather vague or arbitrary. Certainly the above precautions should be exercised on patients under 60 years of age with Kaposi's sarcoma; patients with opportunistic infections not associated with underlying immunosuppressive disease or therapy; patients with increased risks of AIDS (homosexual men, IV drug abusers, Haitians, and hemophiliacs) who have chronic unexplained generalized lymphadenopathy; and high suspect patients admitted for evaluation of AIDS.

When a patient with AIDS as qualified above is identified, the precautions recommended by CDC should be implemented immediately and considered as minimal precautions. The recommendations should not limit or restrict hospitals from implementing additional precautions. Patients with AIDS or "probable AIDS" should be hospitalized optimally in a private room, particularly for those too ill to use good hygiene. The room should be well marked as AIDS precaution which should include enteric and hepatitis B virus precautions.[14] Respiratory isolation does not appear warranted, and gowns should be worn when clothing may be soiled with body fluids, blood, secretions or excretions. Use of gloves, hand washing and proper disposal of contaminated items should be meticulously observed. All blood specimens, body secretions, excretions and tissue should be well labeled with "AIDS Precautions" or "Blood Precautions" and placed in a second bag for transport. Blood and organs of AIDS patients should not be donated.

Laboratory personnel should utilize gloves and hand washing when working with patient materials, and "biological safety cabinets (Class I & II) are advised whenever procedures are conducted that have a high potential for creating aerosols or infectious droplets.[9] All blood spills and laboratory work surfaces should be decontaminated with a disinfectant such as 5.25% sodium hypochlorite. Needles and syringes should be handled according to hepatitis B precautions.[14]

The associated high mortality of this disease, the unknown etiology and unclear modes of transmission have prompted many hospitals to implement even more stringent full isolation criteria. From the data collected from over 900 affected patients, nearly all of whom were hospitalized for prolonged periods requiring intensive medical care and extensive laboratory studies, full isolation procedures do not appear warranted. Patient care may be compromised under these conditions, and except for rare instances, are felt to be excessive. The CDC recommendations should be considered as the basic minimal requirements and additional precautions as supplemental. The availability of new information about this disease, its cause and modes of transmission, should be incorporated into any modifications of these precautions. As investigational studies intensify to determine the etiology of this disease, laboratory personnel and animal experimentation with AIDS material should incorporate even more stringent precautions to prevent transmission among animals and to research personnel. In my opinion, this research should be conducted under biosafety level three guidelines until more information is known regarding the infectious nature of the disease in both animals and man. Gowns, masks, goggles and gloves should be worn to protect personnel attending inoculated animals and their excreta. Only with these safeguards in the hospital and in the laboratory aimed at preventing accidents, ie, needle sticks, splashes, etc, can we adequately attempt to prevent transmission of this potentially fatal illness for which no known cure or prophylactic measures exist.

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Thomas C. Quinn, M.D.
Laboratory of Clinical Investigation
National Institute of Allergy and Infectious Diseases, NIH
and The Division of Infectious Diseases
Johns Hopkins School of Medicine