AIDS Surveillance and Health Education: Use of Previously Described Risk Factors to Identify High-Risk Homosexuals

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Abstract: Previously defined "risk factors" in homosexuals with Kaposi's sarcoma may not be causative of AIDS (acquired immune deficiency syndrome) but are an important tool in identifying segments of the homosexual population who are at increased risk for the development of AIDS and who may benefit from health education and surveillance efforts. The epidemiologic characteristics of such a group of homosexuals from a low incidence area (Pittsburgh, PA) are examined and several factors which may account for differences in incidence are briefly discussed (Am J Public Health 1984; 74:259-260.)

Since 1979, the Centers for Disease Control (CDC) has been investigating the development of Kaposi's sarcoma and opportunistic infections of various types in previously healthy persons. These lesions are presumed to be the result of an acquired, although unexplained, T-cell defect and the syndrome has been labeled "AIDS" (acquired immune deficiency syndrome). Homosexual or bisexual males account for the largest number of cases, but the syndrome has also been described in heterosexual males and females, a majority of whom abuse parenteral drugs, Haitian refugees, persons with Hemophilia A, and several infants, including one who had received multiple blood transfusions for erythroblastosis fetalis. The recent observation of immunodeficiency in two female sexual partners of males with AIDS, along with the frequent history of IV drug use in AIDS patients, suggest a transmissible etiology.

Although the risk factors probably vary among affected groups, it has been documented that male homosexuals with Kaposi's sarcoma have a higher rate of exposure to volatile nitrites and a larger number of sexual contacts when compared to age and race matched homosexual controls. These characteristics, while not necessarily causal, are significant in identifying the homosexual male population at increased risk for the development of AIDS.

Within the homosexual community, men who regularly frequent bath-houses for anonymous sexual encounters have not only a larger number of different lifetime sexual partners, but also are at greater risk for the development of venereal infection. These similarities in epidemiologic characteristics suggest that this subset of the homosexual population may represent a high-risk group for AIDS and that health education efforts, surveillance programs, and selective screening (when an appropriate test is developed) should be focused accordingly.

Utilizing para-professional venereal disease counselors from a local, multiservice community health agency with a significant percentage of male homosexual clients, an AIDS health education project was conducted at a homosexual bath house in Pittsburgh, PA. The investigators also wished to gather epidemiologic data on the participants to determine if there were any obvious epidemiologic differences which might rationalize differences in the frequency of AIDS among promiscuous homosexual males in Pittsburgh and New York City.

Methods

Participation in the study by bath-house clients was voluntary. Before receiving health education about AIDS, a questionnaire asking about age, racial-ethnic background, educational level, sexual practices, prior episodes of sexually transmissible disease, and drug usage was completed. Informed consent was obtained for venipuncture to collect serum to analyze for antibodies to cytomegalovirus by indirect immunofluorescence.

Results

A total of 48 respondents were surveyed. The average age was 32 years (range 19-56). Only one of the 48 participants was Black, the remainder were Caucasian. Seventeen identified themselves as bisexual while the remaining classified themselves as exclusively homosexual. All but seven respondents had experienced one or more episodes of sexually transmissible disease (STD), with the three most common, in decreasing order of frequency, being pubic lice, gonorrhea, and non-gonococcal urethritis (Table 1).

One-third of the respondents indicated a frequency of up to 100 different lifetime sexual partners, and nine reported greater than 1,000 (Table 2). The frequency of total STD episodes correlated well with sexual frequency (Table 2).

Only three of the respondents denied drug usage. Thirty-five of the respondents reported use of volatile nitrites and, for those completing questions about frequency, it was noted that nearly half had an exposure level to the drug greater than or equal to 500. The average usage of volatile nitrites by members of this population was greater than thrice weekly. Almost half of the sample reported travel to and subsequent sexual contacts in New York City within the past 24 months.

All but two of the participants had detectable levels of chronic phase antibody (IgG) to cytomegalovirus. An IgG antibody titer (reciprocal) of 128 was the mode. None demonstrated detectable IgM (acute phase) antibody to cytomegalovirus. None of the 48 participants had AIDS as per the CDC case definition, although two sexual partners had unexplained persistent extrainguinal lymphadenopathy.

Discussion

The data from these 48 participants indicates that a segment of the homosexual population in metropolitan Pittsburgh shares characteristics in common with AIDS victims in areas of higher incidence. A discussion of "risk factors" may be premature while a complete understanding of patho-
genesis is still forthcoming, but clearly, pronounced promiscuity and volatile nitrite use may still be considered significant identifying characteristics of a high risk subset within the homosexual population. Whether these two characteristics are merely "markers" or actually function directly in some inapparent way as co-factors in the disease process, their presence helps to identify a population which should receive health education about AIDS, particularly in the area of symptomatic presentation, and toward which surveillance efforts should be directed.

The frequent history of travel to and sexual contacts in New York City is of interest and attractive as a potential explanation of transmission from high to low incidence areas. If AIDS is secondary to a transmissible agent, its prevalence among sexually promiscuous homosexual males may be governed by some of the same principles elucidated in the study of enteric protozoa in this population,"i.e., that the prevalence of the pathogen is a result of both a large reservoir of infection (hyperendemic population) and its association with sexual behavior resulting in effective transmission.

If we assume that a transmissible agent is responsible for the disease process labeled as AIDS, we must also consider the possibility that patients presenting with the fully developed syndrome represent an extreme manifestation of the disease process, just as only a small percentage of homosexuals exposed to hepatitis B virus develop significant morbidity. This will remain supposition until researchers are able to identify the causative agent. However, the relatively small number of homosexual males affected compared to the large number presumably at risk may indirectly support this hypothesis. The documentation of homosexuals in metropolitan Pittsburgh who share "marker" characteristics with AIDS victims in high incidence areas probably indicates effective agent transmission behavior and, as the agent pool increases, health providers may expect to see more cases. In Pittsburgh in the six months following this project, the number of AIDS cases meeting CDC criteria has increased from three to nine. Although a heightened awareness of AIDS among practitioners may explain part of this increment, we must also assume that part of this increase results from an expansion of the agent pool.

REFERENCES


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