

Food Counseling For Persons Infected With HIV: Strategy For Defensive Living

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Synopsis

More than a million people in the United States are now infected with human immunodeficiency virus (HIV), and by 1991, the United States will record 270,000 cases of acquired immunodeficiency syndrome (AIDS). At present, there is no way to estimate the number of AIDS patients who will be living in 1991.

RECENT REPORTS (1,2) advised persons who are infected with human immunodeficiency virus (HIV) about food counseling intended to help them to avoid foodborne infections.

Mascola and coworkers (1) reported that while listeriosis, for example, is uncommon in acquired immunodeficiency syndrome (AIDS) patients, they are at greater risk of acquiring the infection than is the general population. Listeriosis is now considered to be primarily a foodborne disease that occurs far more frequently than was suspected even a decade ago (3). Although the listeriosis cases studied by Mascola and coworkers were among homosexual persons, the authors emphasized a food vector for the disease, rather than sexual transmission. Their advice for AIDS patients was to avoid raw milk and improperly pasteurized dairy products and to wash all raw fruits and vegetables well in order to avoid contamination from soil. They noted that raw milk or improperly pasteurized dairy products may cause brucellosis, campylobacteriosis, and salmonellosis.

Griffin and Tauxe (2) counseled AIDS patients about foods associated with salmonellosis. Although the original report on these cases described an increased risk of salmonellosis in homosexual male AIDS patients (4), Griffin and Tauxe argued

Intestinal diseases exert considerable morbidity and mortality on AIDS patients and persons with AIDS-related complex. The elevated frequency of certain intestinal infectious diseases in homosexual male AIDS patients has been attributed to sexual practices, but food seems a probable vector for some proportion of the infections in all AIDS-affected groups.

Intestinal infectious diseases and resulting systemic infections can be life-threatening to AIDS patients. The infections may serve as cofactors that hasten HIV disease progression to AIDS, but absolute proof of this hypothesis is lacking. The longer the HIV-infected person maintains good general health and avoids potentially lethal infectious diseases, the better are the chances that effective treatments will be developed and made available. Foodborne diseases are generally avoidable, and increased education of AIDS patients and their physicians as to their nature is the key to their prevention.

that food, not sexual transmission, is the probable vector for most of the observed salmonellosis cases. They advised AIDS and ARC (AIDS-related complex) patients to avoid consuming raw foods of animal origin, such as uncooked eggs, shellfish, meat, and milk. They stressed general principles of food hygiene and adequate cooking of food.

Food is an important vector for many infectious diseases that are expressed as acute gastrointestinal disturbances, but which can progress to septicemia, specific organ infection, and death (3). The risk of adverse outcome is greater for those whose immune systems are compromised.

AIDS and ARC patients suffer from a wide variety of gastrointestinal and other infections, including giardiasis, amebiasis, cryptosporidiosis, salmonellosis, campylobacteriosis, shigellosis, hepatitis A, and others (5, 6). The general population contracts a large percentage of fecal-oral route diseases by consuming contaminated food or water, and this probably is true as well for AIDS and ARC patients.

Health Impact

AIDS patients are at increased risk for septicemia caused by a variety of bacterial agents. Some,

such as *Salmonella* (7) or *Campylobacter* (8), may be recurrent and vary as to the ease and success of treatment. However, any bacterium, when blood-borne, may lead to septic shock and death.

Infectious Agents as Cofactors

One of the mysteries of AIDS is the varying lengths of time between infection by HIV-1 and the onset of clinical symptoms of AIDS or ARC (9). The variations may be explained partly by cofactors, such as infectious agents (9-11).

In order for HIV to infect a CD4+ lymphocyte (the main target cell for the AIDS virus), the lymphocyte must be activated by mitogen or antigen (9-11). HIV genetic material may then integrate into the DNA of the CD4+ cell, and the virus may become latent and remain so until the CD4+ cell is again activated (9-11). Bacteria, for example, are excellent stimuli of the immune system, activating immunocytes by their soluble exoproducts and their structural elements, which can act as mitogens or specific antigens. Bacteria, viruses, and protozoa all contain or produce numerous mitogens and antigens and could, therefore, activate CD4+ lymphocytes, facilitating either infection with HIV or HIV replication.

The prospect of gastrointestinal infectious agents acting as cofactors is speculative, but appears likely. However, without a reliable animal model for AIDS, it is difficult to prove that infectious agents (including gastrointestinal pathogens), through any of several mechanisms, either activate latent HIV in resting CD4+ cells, or enhance HIV replication (9).

The Need for Counseling

Many infectious diseases associated with HIV infection at any stage are related to lifestyle, but as pointed out by Mascola and coworkers (1), and Griffin and Tauxe (2), some may be foodborne. Foodborne diseases unquestionably pose a life-threatening risk to AIDS and ARC patients. The possibility that they play a cofactor role further underscores the need to avoid these common but generally avoidable infections (3).

The issue of who should counsel and whom should be counseled is complex and controversial. On the issue of listeric infection, for example, the World Health Organization Working Group on Foodborne Listeriosis (12) said that physicians are best qualified to give dietary advice to high-risk patients, such as pregnant women, especially when

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risk-benefit decisions must be made about particular foods. A recent report attributed 20 percent of sporadic listeriosis to consumption of raw hot dogs and undercooked chicken (13) and pointed out the type of information that AIDS and ARC patients should be given. There is an important difference between raw products of animal origin, such as raw poultry and meat, and foods which reasonably may be consumed without cooking, such as certain processed foods, and raw vegetables, such as lettuce.

However, public alarm about entire commodity groups, such as pasteurized dairy products, because of an extremely remote chance of post-pasteurization contamination, would appear unwarranted. Nonetheless, AIDS and ARC patients are the group at highest risk for most foodborne, potentially infectious agents. As such, they should be provided with all facts available to government agencies regarding the frequency of contamination of various ready-to-eat products. A great deal is known about the distribution of pathogenic and opportunistic microorganisms in foods. Federal agencies with food-related responsibilities should assist in a coordinated effort to educate physicians who treat AIDS patients about disseminating information to AIDS patients both directly and indirectly through means such as support groups.

At a minimum, AIDS and ARC patients should be made aware of the infectious agents present in raw agricultural commodities, such as outlined by Mascola and coworkers (1) and Griffin and Tauxe (2). Furthermore, patients should be instructed about proper handling and cooking procedures, as well as general hygienic practices. In many cases such instructions do not go beyond the information that should reach the public at large. For example, raw vegetables should be thoroughly scrubbed before they are consumed, and cross-contamination of foods should be avoided.

Cross-contamination can occur when foods intended to be consumed raw, such as salads, are

prepared on an unclean surface where raw, animal-derived foods, such as poultry products, have been prepared, or when cooked foods are placed on such an unclean surface before being served. Food-related hazards, commodity by commodity, and microbe by microbe, as well as practices relating to safe handling of each food type, should be discussed as completely as possible with AIDS and ARC patients.

Physicians need to counsel AIDS and ARC patients and HIV-seropositive persons on ways to avoid foodborne infections and to instruct them on how to avoid other infections as well. This type of information should be made part of an overall strategy of defensive living by HIV-infected persons, and particularly by AIDS and ARC patients.

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LETTERS TO THE EDITOR

Dr. Brandt Did Not List the Number One Cause of Preventable Death

Dr. Edward N. Brandt, Jr., laments, "One of my concerns about acquired immune deficiency syndrome (AIDS) is that it is beginning to attract so much attention that other things are being neglected" . . . in "Hard Choices in Public Health," July-August issue (1). Just 5 years ago, Dr. Brandt, then Assistant Secretary for Health, Department of Health and Human Services, announced that AIDS had been established as the Public Health Service's number one priority, complete with bi-weekly AIDS bulletin and a toll-free AIDS hotline (2). Other public health problems that Dr. Brandt now notes deserve high priority include drunk driving and drug abuse. Dr. Brandt's list does not include the number one cause of preventable premature death in the United States, cigarette smoking. This health problem saves one worrying about "shortcomings of legislative remedies," since to date Congress has not given responsibility or authority to any Federal executive agency to regulate the use of cigarettes. The smoking problem is a prime example of why Dr. Brandt observes, "It [the world of

public health] is also frustrating and conducive to cynicism." The one legislative accomplishment of warnings on cigarette packs is the negation of any liability on the part of cigarette manufacturers for their product. To date, the Supreme Court has declined to hear this matter. Between the early 1950s and 1980s lung cancer deaths have increased 381 percent in black males and 444 percent in black females. The August 1988 issue of *Ebony* has an advertisement: "Save a Dreamer," identifying the Miller Brewing Company, a division of Philip Morris, (the number one cigarette company in the United States) as the founding sponsor of the Thurgood Marshall Black Education Fund.

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