
Blood, virus: New links to AIDS

Several new puzzle pieces slid into place this week in the emerging profile of the hows and whys of acquired immunodeficiency syndrome (AIDS), the ravaging disease of the immune system that has afflicted more than 3,000 persons worldwide since its first appearance in 1981. A new study from the Centers for Disease Control (CDC) in Atlanta, Ga., strengthens assertions that the disease can be transmitted through blood transfusion, while researchers looking into a similar syndrome in monkeys report that "it is a virtual certainty" that the infectious agent in the animal disease is a virus.

Groups at by far the greatest risk for contracting AIDS continue to be homosexual and bisexual men (accounting for 71 percent of all reported cases) and intravenous drug abusers (17 percent), followed by Haitians, hemophiliacs, and the sexual partners of persons in these risk groups. But CDC scientists investigating AIDS cases around the world discovered 31 men and women who were not in a high risk group but who had received a blood transfusion within five years of diagnosis.

Despite the apparent link between transfusion and disease in these patients, CDC officials and national blood bank groups stressed that the risk of contracting AIDS from blood products is extremely small and probably decreasing every day as word is spread that members of the identified risk groups should not donate blood.

"Although the data from the Centers for Disease Control were not published until today, they had been extensively discussed, and the concept that AIDS may be spread by transfusion has been with us for over a year," writes Joseph R. Bove, head of Yale University School of Medicine's blood bank in New Haven, Conn. Bove's editorial accompanied the CDC report in the Jan. 12 *NEW ENGLAND JOURNAL OF MEDICINE*. "During that year, widespread and, at times, unreasonable concern about AIDS and transfusion has developed to such a point that a few persons have refused even to donate blood for fear of getting AIDS," he says, adding that, if unchecked, the "unfounded anxiety" could lead to a blood shortage.

Twenty of the patients in the CDC study had undergone surgery that required transfusions of numerous units of blood. The study underscores the need for physicians to continue to prescribe transfusions only when absolutely necessary, Bove and James W. Curran of CDC agreed.

Curran and his colleagues were able to compile complete donor records on 12 of the 31 patients and found in 11 cases at least one donor who later showed clinical signs of AIDS or belonged to a high risk group. None of the donors showed AIDS

symptoms at the time of donation, a clue that the disease may be transmissible through asymptomatic carriers, Curran says. Most of the 18 men and 13 women included in the CDC report had received large amounts of blood — averaging five times the amount used by a typical transfusion recipient.

While CDC sleuths track the transmission of human AIDS, scientists at the National Institutes of Health in Bethesda, Md., and the University of California at Davis report new evidence that "simian AIDS (SAIDS)," a disease related to human AIDS in symptoms and pathology (*SN*: 3/5/83, p. 151) is caused by a virus. Maneth Gravel led the team that inoculated eight healthy rhesus monkeys with either blood

or plasma from monkeys with SAIDS, after filtering it through a fine mesh expected to block all non-viral infectious agents. All the inoculated animals contracted SAIDS and six died within three months. Further findings since the report's acceptance for publication in the Jan. 6 *SCIENCE* confirm with "virtual certainty" that the infectious agent is a virus that "we've made a lot of progress toward identifying," Gravel told *SCIENCE NEWS*.

CDC statistics from the last half of 1983 indicate that the overall incidence of human AIDS may be declining, though officials say it will be several months before they can be certain that the apparent downturn is a significant trend.

— D. Franklin

State law halts pet research projects

Massachusetts dogcatchers will no longer be permitted to sell stray dogs and cats to medical research laboratories, according to a new public law banning what has been common practice for a quarter century. The statewide prohibition, which goes into effect next October, will eventually cover the importation of pound animals from other states as well, forcing research laboratories into the costly business of breeding experimental animals. Yet both the research community and anti-vivisectionism activists have supported the legislation as a compromise of their competing interests.

The compromise legislation was written by Rep. Ray Jordon as an alternative to a far more sweeping referendum designed by animal rights advocates, which if passed would have immediately banned the sale and importation of pet animals for research. It would also have permitted the New England Anti-Vivisectionist Society (NEAVS), a militant animal rights group, to police research laboratories—a step that, according to a Jordan aide, would have effectively ended research with dogs and cats. ProPets, an alliance of NEAVS and the more moderate Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA), had gathered 145,000 signatures on a petition, more than twice the number needed to get the referendum on the ballot; it was believed to have wide public support.

The compromise bill, signed into law by Governor Michael S. Dukakis in late December, will allow the continuation of "pound seizure"—the right of laboratories to buy unclaimed animals after 10 days—until October 1984, and it will allow laboratories to continue importing pound animals until October 1986. This timetable was requested by a coalition of research laboratories to avoid sabotaging ongoing research projects while breeding kennels are put in place. Just as importantly, the law permits the MSPCA, but not NEAVS, to join in public health service inspections of laboratories.

Despite these compromises, NEAVS official Amy Robinson hails the new law as a major victory for animal rights. Although NEAVS opposes all research involving animals, she emphasizes, research on former pets is especially egregious because it exploits the trust that these animals have learned. In addition, Robinson says, pound seizure is a violation of public trust: "The public has been duped into thinking that animal shelters exist to protect stray animals as orphanages protect children."

For the research community, the new law buys time. But according to Jackie O'Neill, director of community affairs at Harvard University in Cambridge, Mass., it also defuses a highly emotional and misunderstood issue. Pets rarely go unclaimed, she argues; the 5,000 dogs and cats that are sold to laboratories each year are most likely abandoned animals. (The remainder, more than 100,000 a year, are killed by the pounds, she notes.) Nevertheless, she says, the well-financed anti-vivisectionist movement has convinced the public that their pets are in danger, and the pet issue has recently dominated the larger debate about animals in research. "We felt that it was important to get the pet issue out of the discussion," she says.

Just how research laboratories will cope with the new restrictions remains unclear, according to Ronald Hunt, director of the Harvard Animal Resource Center. It is possible that several universities may set up a collaborative breeding facility, he says, but in any case the costs of research—especially cardiovascular and neurological research—will certainly increase. Laboratories purchase strays for a nominal fee—from \$3 to \$15 each—and even with the additional costs of treatment (pound animals are often in poor health), these animals can be made fit for research for about \$100. Animals must be at least one year old for most research, and the costs of raising such animals are, according to Hunt's estimate, at least five times as high.

—W. Herbert