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Discoverers of AIDS and Cancer Viruses Win Nobel

By LAWRENCE K. ALTMAN

The Nobel Prize in Medicine was awarded Monday to three European scientists who had discovered viruses behind two devastating illnesses, AIDS and cervical cancer.

Half of the award will be shared by two French virologists, Françoise Barré-Sinoussi, 61, and Luc A. Montagnier, 76, for discovering H.I.V., the virus that causes AIDS. Conspicuously omitted was Dr. Robert C. Gallo, an American virologist who vied with the French team in a long, often acrimonious dispute over credit for the discovery of H.I.V.

The other half of the \$1.4 million award will go to a German physician-scientist, Dr. Harald zur Hausen, 72, for his discovery of H.P.V., or the human papilloma virus. Dr. zur Hausen of the German Cancer Research Center in Heidelberg “went against current dogma” by postulating that the virus caused cervical cancer, said the Karolinska Institute in Stockholm, which selects the medical winners of the prize, formally called the Nobel Prize in Physiology or Medicine.

His discovery led to the development of two vaccines against cervical cancer, the second most common cancer among women. An estimated 250,000 women die of cervical cancer each year, mostly in poor countries.

This year’s Nobel Prize-winning research focused on two viruses that take many years to cause damage. Much of the research was carried out a quarter of a century or more ago.

Since its discovery in 1981, AIDS has rivaled the worst epidemics in history. An estimated 25 million people have died, and 33 million more are living with H.I.V.

In 1983, Dr. Montagnier and Dr. Barré-Sinoussi, a member of his lab at the Pasteur Institute in Paris, published their report of a newly identified virus. The Karolinska Institute said that discovery led to blood tests to detect the infection and to anti-retroviral drugs that can prolong the lives of patients. The tests are now used to screen blood donations, making the blood supply safer for transfusions and blood products.

The viral discovery has also led to an understanding of the natural history of H.I.V. infection in people, which ultimately leads to AIDS and death unless treated.

H.I.V. is a member of the lentivirus family of viruses. The French scientists were cited for identifying a virus they called L.A.V. (now known as H.I.V.) in lymph nodes from early and late stages of the infection.

“Never before has science and medicine been so quick to discover, identify the origin and provide treatment for a new disease entity,” the Karolinska Institute said.

Reached by the Nobel committee in Abidjan, Ivory Coast, where he is attending an international AIDS conference, Dr. Montagnier said, “The fight is not finished” and he was now working on a way to eradicate H.I.V. in those already infected. Dr. Montagnier now works at the World Foundation for AIDS Research and Prevention in Paris. For a brief time in the late 1990s, he worked at Queens College in New York City.

Nobel Foundation rules limit the number of recipients of its medical prizes to a maximum of three each year, and omissions often create controversy.

The dispute between Dr. Gallo and the French team spanned years and sprawled from the lab into the highest levels of government. Dr. Gallo, 71, now at the University of Maryland in Baltimore, worked for many years at the National Cancer Institute in Bethesda, Md.

While in Bethesda in 1984, a year after the French team's report, Dr. Gallo reported finding a virus that he called H.T.L.V.-3 and that was later shown to be nearly identical to the French L.A.V. After additional studies, Dr. Gallo said cultures in his laboratory had accidentally become contaminated with the French virus.

In 1986, Dr. Gallo and Dr. Montagnier shared a prestigious Lasker award, given in the United States; Dr. Montagnier was cited for discovering the virus and Dr. Gallo for determining that it caused AIDS.

In 1987, President Reagan and Prime Minister Jacques Chirac of France signed an agreement to share royalties and credit for the discovery.

But Maria Masucci, a member of the Nobel Assembly, told Reuters on Monday that "there was no doubt as to who made the fundamental discoveries."

Dr. Gallo told The Associated Press on Monday that it was "a disappointment" not to have been honored with the French team. Later, Dr. Gallo issued a statement congratulating this year's Nobel Prize winners and said he "was gratified to read Dr. Montagnier's kind statement this morning expressing that I was equally deserving."

Dr. John E. Niederhuber, the director of the National Cancer Institute, said Monday that Dr. Gallo "was instrumental in every major aspect of the discovery of the AIDS virus. Dr. Gallo discovered interleukin-2 (IL-2), an immune system signaling molecule, which was necessary for the discovery of the AIDS virus, serving as a co-culture factor that allowed the virus to grow. Numerous scientific journal articles, many co-authored by Dr. Gallo and Dr. Montagnier, cite the two scientists as co-discoverers of the AIDS virus."

Dr. Anthony S. Fauci, a virologist and immunologist who directs the National Institute of Allergy and Infectious Diseases, said in an interview, "The committee has a long history of awarding the prize to the person or group that makes the first seminal observation or discovery, and they did that in this case." He added, "Nobel Prizes are always associated with great joy and great sadness, depending on who wins and who you are."

The link between human papilloma virus and cervical cancer took years to gain acceptance. When Dr. zur Hausen proposed the connection in the 1970s, infection with papilloma virus was thought to cause nothing more serious than common warts, and the prevailing scientific view was that herpes type 2 virus caused cervical cancer. But Dr. zur Hausen consistently failed to find herpes type 2 DNA in cervical cancer cells using the newer molecular biology laboratory techniques.

In the 1980s, an American researcher said that financing agencies in the United States had rejected as unpromising his grant proposals to study links between papilloma viruses and cancer. The National Institutes of Health did not reply on Monday to questions about such proposals.

In 1983, Dr. zur Hausen discovered the first H.P.V., type 16, among biopsies of women who had cervical cancer. He went on to show that more than one H.P.V. type could lead to cervical cancer, in part by cloning H.P.V. 16 and another type, 18. Further research has shown that the two H.P.V. types are consistently found in about 70 percent of cervical cancer biopsies throughout the world, the institute said.

Of the more than 100 human papilloma viruses now known, about 40 infect the genital tract and 15 of them put women at high risk for cervical cancer. But in a vast majority of cases, the body's immune system clears H.P.V. before the viruses cause harm. It is chronic infection that is dangerous.

H.P.V. viruses account for more than 5 percent of all cancers worldwide. Some types of H.P.V. are found in cancers of the vulva, penis, mouth and other areas. Other H.P.V. viruses cause warts on the foot and elsewhere.

Dr. zur Hausen's research has led to development of vaccines that protect against strains of H.P.V. that cause most cases of cervical cancers. However, controversy has arisen over who should get the vaccines.

The United States Food and Drug Administration has approved one papilloma virus vaccine, Gardasil, for girls and women ages 9 to 26 and with advice that they get immunized before sexual activity begins. Because the vaccine was developed recently, doctors do not know for how long it will last.

The Nobel Prizes were created in the will of Alfred Nobel, the Swedish explosives inventor and manufacturer, who died in 1896. The first prizes were awarded in 1901.

An earlier version of this article referred incorrectly to the office Jacques Chirac held at the time of his 1987 agreement with President Reagan.

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