Françoise Barré-Sinoussi: the HIV hunter - FT.com

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By Andrew Jack

Thirty years ago, Françoise Barré-Sinoussi found an unidentified virus in a patient with Aids – work which won her a Nobel Prize. She talks about the continuing battle with the disease and her hopes of one day seeing a cure.

A black leather whip hangs from the filing cabinet in Françoise Barré-Sinoussi's new office. It may seem an unusual adornment for the woman who, 30 years ago, discovered the human immunodeficiency virus (HIV), written up in the prestigious journal Science in May 1983. But it is a teasing gift from colleagues to mark her continued drive.

Three decades on, Barré-Sinoussi shows no sign of slowing down. Next week she chairs a conference with leading global experts, at the Pasteur Institute in Paris, to mark the anniversary. Two intriguing guests of honour will make comments: her former colleague Luc Montagnier and their longstanding American rival Robert Gallo.

Relations between the three remain awkward, three decades after competing US and French claims to the discovery. The ensuing fight ultimately required the two countries' leaders to intervene in 1987, naming them co-discoverers and splitting royalties on the resulting HIV blood test. The wounds reopened in 2008 when Montagnier and Barré-Sinoussi jointly won the Nobel Prize for medicine, while Gallo – widely credited with subsequently demonstrating the link between HIV and Aids – was pointedly excluded.

Seated behind her desk at the Pasteur Institute in central Paris, Barré-Sinoussi prefers to look forward rather than at the painful squabbles of the past. “Any historical discussion can take place during the dinner,” she says curtly, elegantly coiffed and dressed in a pink jacket. “My objective is to let the young researchers speak. We need to imagine the future.”

Our lengthy discussion on a recent Saturday (just another working day for her) showed her both energetic and assertive at 65, an age at which most (though neither Montagnier nor Gallo) might contemplate retirement. She runs Pasteur's retroviral infections regulation laboratory, and is also president of the International Aids Society, the leading network of researchers on the disease. In that role, she is focused on an ambitious plan formally unveiled last year: to find a cure for HIV, which causes 1.7 million deaths a year. Despite drugs that have turned it into a manageable, chronic disease in much of the world, it still cannot be eliminated from the body.

To have got this far in tackling a new disease in such a short time is remarkable enough. For Barré-Sinoussi, emerging as a pivotal player from a male-dominated medical research establishment, it is still more impressive. As a woman from a modest background growing up in postwar France, she concedes that it was not an easy career.

“It was a lot more difficult at the time,” she says. “Certain people – men, of course – discouraged me, saying it was not a good career for women. That pushed me even more to persevere. But I was from the generation of 1968. It was a period of activism and women were demanding their rights. I was not out demonstrating on the streets, but I shared a lot of those ideas.”

She opted for science over medicine, and was impatient to leave the lecture benches for a laboratory. “I wanted to do discovery,” she recalls. “University was very theoretical. It's only in the lab that you see the value of your work.” She had two offers: one to study the links between alcohol and the liver; the other, cancer. She opted for the latter, partly influenced by the death of a young cousin from leukaemia.

At a laboratory in the Paris suburbs, working under Jean-Claude Chermann, she began her work on retroviruses, a category of slow-acting virus that inserts itself into the host cell genome where it can replicate indefinitely. In 1975, she travelled to the US on a fellowship. She soon mastered English – after her initial struggles to explain to customs officials the white powder in test tubes that she had brought with her for research. At the tightly controlled “building 41” of the National Institutes of Health just outside Washington, DC, she encountered strict “biosecurity” measures designed to limit the risk of infection in researchers – something she would introduce on her return to Paris, and which would be important for the work on HIV.

The experience also influenced her belief in partnering with researchers around the world. “I don’t know how people can work without
a network of collaboration,” she says. “If you remain isolated in your corner in the labs, you can write good papers. But you also have to translate them to develop tools for patients.”

Just two years after a report of a mysterious infection in five young gay men appeared in a 1981 bulletin of the US Centers for Disease Control (CDC), her Pasteur team, led by Montagnier, was able to isolate the virus. In a few more months they had developed the first diagnostic test to confirm infection. By 1985, they managed to decode the genome of HIV, long before modern analytic techniques had made such a process far more rapid.

She was inspired by Willy Rozenbaum, a doctor (and now president of France’s national Aids council) who had read the CDC article and came to Montagnier’s lab seeking help for his patients with similar symptoms. One of them provided an initial biopsy, and Barré-Sinoussi recalls the moment when a colleague first spotted the distinctive virus in his electron microscope: February 4 1983, at 5.45pm. Three months later, the results were published in Science.

She says her sense of urgency in pursuing HIV was linked to the patients, with whom she quickly formed a deep bond. “I lived through a horrible, dramatic era. It was very tough psychologically, seeing young people aged 35 dying in an absolutely horrible state.” She worked with community groups and saw their frustration at the failure of initial attempts to develop effective treatments, including at Pasteur. Those connections – which she maintains today – helped refocus her research, with a strong emphasis on prevention, including work on a vaccine and on strategies to avoid infection in babies where the mother had HIV. It also pushed her to work with patients directly rather than with imperfect simulations based on animals.

Early projects included her work in Pasteur’s offices in Africa. She also studied injecting drug-users in Vietnam, where she identified a small proportion – so-called “elite controllers” – who were exposed to HIV but had innate immunity. She ultimately halted that research for ethical reasons, troubled that the patients were pursued by the police and imprisoned.

More recently, she has followed the Visconti study, which identified 14 longstanding French “post-treatment controllers” – patients who, having been given drugs within 10 weeks of infection, had stopped taking them for more than seven years, but without any sign of a resurgence of HIV. Such findings give her confidence in her pursuit of a cure, lobbying for more “partnerships, expertise and multidisciplinary work between HIV specialists and those in other diseases like cancer”.

“I remain prudent on the idea of a total elimination of the virus, which remains latent in all the bodily organs and the brain,” she says. “It’s practically mission impossible. But a functional cure, which exists in the natural state? We should be capable of inducing it.” She remains cautious on timescale. “I have no idea. I don’t have a crystal ball. You have to be extremely prudent.”

Asked to reflect on what could have been done better in HIV research, she says: “Not everything was perfect, but frankly, we have not done bad work over the past 30 years.” When pressed to re-examine the spat over the discovery of the virus, she expresses regret only that Jean-Claude Chermann did not share her Nobel Prize. “That was a very bad period. I was focused on patients. We were criticised by those with HIV who said all that interests you researchers is fighting for money. It made me feel terrible. My focus is on the future. That was the past.”

At next week’s dinner, she will play her part in rebuilding the bridges across academia that she sees as so central to finding a cure. Less revenge eaten cold and more a series of warm dishes in the spirit of the greater good: defeating Aids.

Andrew Jack is the FT's pharmaceuticals correspondent

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