French Twist

Immunologist Brigitte Autran flips HIV eradication on its head

March 1, 1999 By Tim Horn

Immunologists at long last are getting their day in court. With the grand concept of eradication now hanging on the immune system's ability to control HIV, all eyes are on research roiling in such internationally renowned immunology labs as Dr. Brigitte Autran's.

In the past year, Autran has published several important reports showing that the torn and tattered immune systems of HIVers can accomplish a major comeback once highly active antiretroviral therapy (HAART) is initiated. While it's still too early to tell if a complete recovery is possible, Autran's research has blazed trails that other immunologists will follow into the next millennium.

Autran, dubbed by *Science* one of the best HIV researchers in France, is currently a professor of immunology at the Pitié-Salpâtrière Hospital in Paris. She directs a clinical program that serves more than 3,000 PWAs each year.

The flashy Chanel-toting Autran recently updated POZ reporter Tim Horn on her lab's latest discoveries and her hopes for immune-boosting solutions.

Tim Horn: For many years, immunology research has been overshadowed by virus-centered research. Is that changing now?

Brigitte Autran: I'm certain that the larger scientific and medical communities are finally ready to take immunology much more seriously. Immunologists have always played a significant role in science. If it seems that the AIDS medical community has ignored immunologists, it's because our language is much more complicated and foreign-sounding than virologists'. Most of the time, we speak to infectious-disease specialists, whose interest is in searching for bacteria and viruses. They're not particularly interested in the immune system itself.

In 1987, you published a landmark paper in Nature demonstrating that HIV positive patients produce large numbers of specialized T-cells that directly target the virus. Why was this so important?

Up until that time, the scientific community was convinced that HIV paralyzed the entire immune

system. Our discovery proved that, on the contrary, the immune system was incredibly active against the virus via the cytotoxic T lymphocytes. We were also able to show that these cells could be detected easily in both the blood and the tissues of patients.

Two years ago, in another Science breakthrough, you reported that components of the immune system could be partly restored in patients on HAART.

Our article demonstrated that helper T cells had the capacity to be regenerated after HAART. The true significance of this was our observation that both new and memory T cells were being produced. The new T cells would help ward off new infections in the body, and the memory T cells would strengthen the defense against some of the typical opportunistic infections [OIs] seen in AIDS, particularly CMV and tuberculosis.

Might these data suggest that prophylaxis against OIs can be stopped in patients who respond well to HAART?

It is possible, yes. This question has been evaluated by a number of researchers in several countries. Dr. Christine Katlama, my colleague at the Pitié-Salpâtrière Hospital, has conducted such a study. Her results were very optimistic.

But the recovery associated with HAART does not signal that the immune system has become any stronger against HIV, correct?

Right. While the immune system can remain strong against various opportunistic infections after HAART is stopped, it remains weak against HIV itself—the viral load increases immediately. This does not mean that the immune system is incapable of controlling HIV, but rather that it needs to be stimulated to more adequately respond to the presence of the virus.

So it seems that immune-based therapies will be a big focus of research in the future.

Absolutely. Immune-based therapies, particularly in combination with HAART, will most likely prove to be the most effective treatment strategy of all for patients with HIV. Of course, there’s a lot of work still to do. We need to define the best immune-based therapy strategy.

What studies are you doing now?

A research group at Pitié-Salpâtrière, along with others in France, is conducting studies of periodic interleukin-2 infusions in patients receiving HAART. We are also conducting studies of therapeutic vaccines against HIV. It’s still too early to report any of the results, but we’re making progress.

Any final thoughts as we move into the 21st century?

Our work so far has generated a lot of optimism from the scientific, medical and patient communities. But we cannot forget that HAART is failing approximately 50 percent of patients with

access to the drugs in Western countries. And what about the 32 million people living in developing countries with no access to these therapies?

I certainly hope that all patients worldwide will gain access to these therapies and benefit from the development of a protective vaccine. The greatest hope of all, however, remains eradication.
