News of the week continued from p. 279

Hepatitis: No more guilt by exclusion?

Since its discovery about 10 years ago, non-A, non-B hepatitis has been defined by what it isn't — it is not a result of the fecally passed hepatitis A virus or of blood-passed hepatitis B. Like its cousins, the infectious disease is marked by liver inflammation, but what causes the condition has been a mystery.

Now researchers from a Food and Drug Administration (FDA) laboratory in Bethesda, Md., think they have a line on the elusive disease. In the Oct. 27 LANCET, they present evidence that non-A, non-B hepatitis, blood-borne like hepatitis B, is caused by a retrovirus. This relates it structurally to HTLV III, a virus believed to cause AIDS.

Finding a test for the non-A, non-B virus to enable screening of blood donated for transfusion would be particularly useful; there are about 100,000 cases of post-transfusion hepatitis in the United States each year, and 90 percent of these are non-A, non-B. Forty percent of non-A, non-B hepatitis infections become chronic, and 1 percent result in death.

"A screening test could prevent donors that may be carriers or more active cases from donating blood," says Belinda Seto, one of the authors of the LANCET paper. Post-transfusion hepatitis B was a major problem until screening tests were devised, she notes.

The FDA researchers looked for, and found, an enzyme called reverse transcriptase, produced only by retroviruses. Retroviruses have a single strand of RNA, rather than DNA, as their genetic material and are marked by the peculiar way in which the RNA reproduces itself, making a double-stranded *DNA* copy as an intermediate. Reverse transcriptase is a key element in this process.

The researchers checked blood serum from 12 patients with the clinical signs of non-A, non-B hepatitis, in whom other viruses had been ruled out, and 49 healthy plasma donors and laboratory workers. The enzyme was present in all of the non-A, non-B victims and in only two of the 49 healthy people.

They also found evidence of the retrovirus in blood serum and plasma products that had transmitted non-A, non-B hepatitis to humans and chimps.

"There is now strong evidence that the agent of non-A, non-B hepatitis is either a retrovirus or a retroviruslike agent," says Robert J. Gerety, one of the FDA researchers.

Comments Girish N. Vyas, a hepatitis researcher at the University of California at San Francisco, "At the present time, simply judging the results, I think it's the first thing that's been exciting after frustrations of a decade or more."

Non-A, non-B hepatitis has bedeviled researchers for years. "Each time a new test has been published, and I've counted 12, it's turned out to be false excitement," Vyas says.

What sets the new test apart, he says, is that rather than looking for signs of the body's reaction to an infection, as the other tests did, it directly measures the activity of a product of the virus. "Immunological assays are so specific sometimes that you may not be able to pick up a variety of agents," he notes.

"More work will have to be done," says Vyas. "I think that it finally cracks open something that has been extremely difficult for very many years."

The finding also hints at the possibility of developing a vaccine against the virus, as resulted from the discovery of the hepatitis B virus (SN: 11/21/81, p. 327).

The current test will require confirmation and simplification before it can be used by the nation's blood banks, Gerety notes. It is also positive on patients with other retroviruses, including HTLV III, but it is not ready to serve as a blood screen, Gerety says. At this point he doesn't know whether this test will prove more sensitive than the test currently being developed for HTLV antibodies. — *J. Silberner*