

Chicken pox vaccine works

In a test involving 914 children in suburban Philadelphia, a vaccine against chicken pox proved completely effective in blocking the potentially serious infection, researchers reported last week.

About three million people in the United States get chicken pox each year, and the government estimates that between 100 and 150 of these cases are fatal. Varicella-zoster, the herpesvirus that causes chicken pox, also causes shingles, a painful infection of the nervous system usually seen in people over 50.

In its first major U.S. test, the vaccine, made from a live, attenuated strain of the virus, was given to 468 healthy children, while 446 received a placebo. None of the vaccinated children contracted chicken pox during the following nine months although 33 of them were exposed to siblings who had the disease. Of the children who got the dummy vaccine, 39 came down with chicken pox during the same period. The vaccination caused no serious side effects.

The findings from the double-blind test were reported in the May 31 *NEW ENGLAND JOURNAL OF MEDICINE* by researchers at the University of Pennsylvania in Philadelphia in collaboration with Merck Sharp and Dohme Research Laboratories in West Point, Pa., which produces the vaccine in the United States.

"The results look good for short-term protection," says Kenneth Herrmann of the Centers for Disease Control in Atlanta. But he adds that "this is not a vaccine that is likely to be recommended for widespread use... until more is known about it. There are unanswered questions about the risks from the vaccine and how long the immunity may last," he says. An editorial accompanying the paper cited "latency, oncogenicity and reactivation" as questions only long-term studies can resolve.

Because the disease is more dangerous to adults infected for the first time than it is to children, the duration of protection afforded by a chicken pox vaccine administered during childhood is important. "The last thing we want to do is wind up with a bunch of adults who are susceptible to chicken pox," says Anne A. Gershon, professor of pediatrics at New York University.

Gershon is leading a study of the vaccine's effectiveness in children with leukemia and related cancers. Chicken pox is a serious problem for these children because chemotherapy, and the cancer itself, weakens their ability to fight infection. Following vaccination, Gershon found that of those exposed to chicken pox at home, about 80 percent who had been vaccinated resisted infection. Those who did get the disease had mild cases, she says. Gershon is planning a similar test on children with solid tumors.

—G. Morse

Hepatitis vaccine from yeast

An experimental vaccine produced by genetically engineered yeast has been tested on humans and found to induce antibodies — and presumably immunity — to hepatitis B virus, scientists reported in the June 1 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*. The researchers, who vaccinated 37 volunteers, say they believe this is the first use on humans of a vaccine made by recombinant DNA techniques.

While an effective, conventional vaccine (SN: 11/21/81, p. 327) has been on the market for two years, it has not been widely used, in part because of prohibitive cost—about \$100 for a series of three shots. Concern about that vaccine's purity may have also discouraged its use. Because it is prepared from virus surface antigen culled from the blood of hepatitis B-infected donors, some worry that it could carry blood-borne contaminants such as the virus thought to cause AIDS. That concern is probably unfounded, according to researchers in the field.

Vaccine made by the recombinant yeast should allay fears about contamination because the product is not collected from blood. Instead, yeast modified in the laboratory to carry a gene encoding a hepatitis B surface antigen synthesize the protein. This new vaccine should be simpler and faster to produce in large amounts than the blood-derived material that takes a year per batch to make, according to company officials.

An estimated 70 million people suffer liver disease attributed to the virus, and nearly three times as many are thought to be carriers capable of transmitting it. Primary hepatocellular carcinoma, a liver cancer linked with hepatitis B infection, is the most common cause of cancer deaths in men in some parts of Asia and Africa (SN: 3/21/81, p. 180).

Whether the new vaccine reaches the huge numbers who need it will depend on its cost, says Stephen C. Hadler, Chief of Epidemiology Activity, Hepatitis Branch, at the CDC in Atlanta, Ga. "What is absolutely necessary is a cheap vaccine, and until there is a vaccine that costs not hundreds of dollars, but less than a dollar, it's not clear that there will be a major impact on the disease," he says.

Will the new vaccine be cheaper than the one currently available? That's uncertain. It may be easier to produce than the serum-derived product, but "there's a trade off... in the cost of development of the recombinant DNA technology," says David J. West, one of the scientists at Merck Sharp and Dohme Research Laboratories in West Point, Pa., who carried out the clinical trial. "I have no idea at this point what the balance sheet is going to look like," he says. A spokesman for Merck verified that it is "too early to say" whether the new vaccine will be cheaper than the one Merck now markets.

—G. Morse

Predictions foiled: Measles cases jump in first part of 1984

Centers for Disease Control experts last fall predicted a record low incidence of measles in 1984. Instead, the CDC reports 46.2 percent more cases of that viral infection in the first 17 weeks of 1984 than in the same time last year. Mostly school-age children have been afflicted.

"It's the first time we've had anything of this magnitude among vaccinated individuals," Alan Hinman of the CDC says of outbreaks concentrated in three states (Texas, Michigan and California), where some people developed measles despite their vaccinations. "The disease is successful at finding unprotected people. It doesn't indicate we're doing things wrong. What measles is doing is finding the holes in our system," he says.

Vaccines don't "take," or stimulate anti-

body protection, in about 5 percent of the population. These vulnerable people constitute some of the 968 cases reported so far this year, Hinman says. But another reason for outbreaks, mainly among junior and senior high school students, is that these pupils either entered schools before laws mandating immunizations were passed, or before such laws were strictly enforced, he says.

This is what happened in California, where 223 cases have been reported, says Loring Dales of the state health department in Berkeley. Also, Dales notes that a few of the measles cases were "imported" by people entering the state from Asia or Mexico.

Norman Hayner of Michigan's health department says imported measles is sus-

pected of sparking nearly 300 cases there. One importation probably occurred at a recent hockey game in Detroit, when visiting Canadian sports fans carrying measles attended a U.S.-Canadian game, Hayner says.

Texas measles cases, up from 37 last year to more than 300 so far, hit school children in two cities and infants in another. The latter outbreak is under investigation, says Bob Crider of the health department in Austin.

All three cities are "highly immunized," Crider says.

Hinman says the increased measles incidence, plus the shift toward school-age children catching it, point out the need to strictly adhere to immunization laws.

—A. Rowand