IMMUNOLOGY

Limit Polio Vaccine Use

Caution of Government's top health authority in the use of live oral poliovirus vaccine Type III may have saved many lives, Faye Marley reports.

➤ LIVES may have been saved by delay in the use of the tricky Type III live oral poliovirus vaccine. The vaccine was licensed only last March by the U.S. Public Health Service after long studies and postponements that brought out impatient criticism.

Apparently the caution of the Government's top health authority was justified.

While not following Canada's example of withdrawing Type III Sabin oral vaccine, the U.S. Public Health Service has now decided to limit its use to those so far unharmed. This means that it appears to be safe for children but not for adults. There is a chance of one in a million that an adult taking this vaccine will get polio.

But a number of state health departments believe further caution is necessary before Type III is used for any age.

This brings back the question of why use the oral vaccine at all when the safe and effective Salk killed vaccine has reduced the polio rate to a negligible figure.

A statement from the American Medical Association at its June 1961 meeting, which upheld the Sabin vaccine, said it was more efficient than the Salk vaccine in eradicating polio as a community health problem.

A recent Massachusetts study of the two types of vaccine showed that even with 100 per cent Salk vaccination, unless the oral vaccine is administered to the public, at least 20 percent of the population will remain susceptible to polio. This is said to be because carriers of the disease in the intestinal tract can transmit it, and a large proportion of Salk vaccines still carry the disease in the intestines.

Type II polio has been virtually wiped out since the Salk vaccine has become widespread. Type I has diminished in frequency more rapidly than Type III, however.

The Salk vaccine gives immunity to the individual who receives it and not to anyone else. The AMA House of Delegates said, "Although Salk vaccination can be expected to reduce greatly the relative risk of paralytic poliomyelitis among adequately vaccinated individuals, the procedure cannot be expected to have a great effect on the incidence of alimentary poliovirus infection among either vaccinated or unvaccinated individuals, and therefore the eradication of the disease as a community health problem."

Dr. Jonas Salk, originator of the Salk killed-virus vaccine, however, maintains that the use of killed-virus vaccine not only reduces risk of paralysis and spread from the throat but also reduces the number of intestinal carriers.

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"PLASTINAUT"—Air Force scientist Capt. Joe Traynor inserts the new space radiation-measuring instrument into the head of a "plastinaut." The instruments to measure the absorbed dose of radiation by man in space were built by Hughes Aircraft Company.

MEDICINE

Alcoholic Tremors Treated By Amino Acid Injection

➤ ATTACKS of delirium tremens, a serious condition due to alcoholic poisoning, can be prevented and treated by injection of amino acids, essential blood elements.

A report on Harlem Hospital, New York, surgical patients in the Quarterly Journal of Studies on Alcohol, 23:390, 1962, showed that approximately ten percent have delirium tremens at some time during their hospitalization.

The delirious condition usually begins after a period of stress, such as injury, acute infection or the facing of surgery. The majority of such patients have had a substandard diet, deficient in proteins and vitamins, with a long history of drinking too much alcohol.

Low levels of amino acids were found in all patients with delirium tremens. From these amino acids the body rebuilds its proteins. There are about 20 known amino acids, ten of which are essential to life.

The researchers gave intravenous injections of the amino acids l-monosodium glutamate, l-arginine and l-arginine-l-glutamate, and an amino acid sugar, n-acetyl-d-glucosamine, which prevented or reduced the severity of attacks of delirium tremens.

The seriousness of this condition is magnified when it occurs in surgical or injured patients, masking grave complications and increasing the difficulty of managing the patient. If uncorrected it frequently causes postponement of urgent surgery.

Reporting the findings were Drs. Aaron Prigot, Eustace E. Corbin and Aubre de L. Maynard, with Thomas P. Roden and Inga Hjelt-Harvey of the division of surgical research, Harlem Hospital Center.

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RADIOLOGY

Space Radiation Dosage Instrument Developed

➤ NEW SPACE radiation instruments to determine the amount of radiation energy an astronaut will absorb at five points of his body have been developed by the Hughes Aircraft Company.

The instruments, called tissue-equivalent ionization chambers, were designed and built for the Air Force Systems Command's Special Weapons Center, Albuquerque, N.M.

They will be placed inside Air Force "plastinauts," man-size dummies made of human tissue-simulating plastic. They will measure the absorbed dose from a composite of space radiations in the mediastinum (the area containing the heart and all the chest viscera except the lungs), the upper arm, thighbone, spinal column and abdomen.

Three "plastinauts" are now being tested by the special weapons center.

The project was carried out under direction of Dr. Norman A. Baily to help solve what he termed "one of the most acute problems of manned space travel—the absorbed radiation dose likely to be encountered by an astronaut."

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