MEDICINE

Malaria Eradication Seen

Eradication of malaria throughout the world may be closer as a result of a new drug that protects with a single injection, Faye Marley reports.

➤ WORLD-WIDE eradication of malaria, which kills two million and afflicts 200 million persons a year, may be closer as a result of tests on a new drug.

Dr. G. Robert Coatney of the National Institute of Allergy and Infectious Diseases, Bethesda, Md., reported that a single injection of the Parke, Davis and Co. experimental drug CI-501, not yet marketed, had protected volunteers in the U.S. prison at Atlanta, Ga., for nearly one year. The volunteers were bitten by anopheles mosquitoes at monthly intervals. Fifty prisoners participated.

The first injections of the new antimalarial were given Nov. 24, 1961, to five volunteers. The drug was injected intramuscularly at a dosage of five milligrams per kilogram of body weight. Within two months, 25 additional volunteers received the drug.

Most of them were bitten by heavily infected *Anopheles quadrimaculatus* mosquitoes about a week after the suppressive injections, but a few were not bitten until as late as five and one-half months after being given the protective drug.

Of 10 volunteers in the first two groups, for example, two were bitten once, eight twice, six three times, four four times and two eight times, at approximately monthly intervals. Each had received only one injection of CI-501. Yet, none of these persons developed any evidence, clinical or parasitological, of malaria.

Other volunteers serving as controls and not given the drug invariably came down with malaria when bitten by the same mosquitoes. They were treated with conventional antimalarial drugs, such as amodiaquine.

When the new drug was used experimentally to see if it would be curative in patients with malaria, symptoms disappeared and an apparent cure was effected. However, it is too soon, the investigators believe, to say that the drug will be therapeutically effective as well as protective.

It is entirely possible that this new antimalarial eliminates the parasites before infection can take root. Studies on this point are underway but are not complete. The scientists believe that the chemical when injected is held in the intramuscular tissues, where it releases its effective materials into the circulating blood to be carried to every part of the body.

In a separate investigation, a slightly different form of the drug has been tried on nine volunteers. One of them came down with malaria 169 days after the original challenge by the infected mosquitoes. He had been bitten on the sixth day and the 79th day after receiving the drug.

None of the volunteers injected with the original formulation has shown any evidence of malaria infection. As of October 24, 1962, volunteers in the first group had been free of any evidence of malaria for 333 days.

The new drug, CI-501, is a pamoic acid salt of the base 4,6-diamino-1-(p-chlorophenyl)-1, 2-dihydro-2, 2-dimethyl-s-triazine. This base was reported 11 years ago to be formed in the body from the anti-malarial drug Chlorguanide.

The investigation was reported at the meeting of the American Society of Tropical Medicine and Hygiene, Atlanta. Field trials are planned to bear out the spectacular preliminary results.

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MEDICINE

Pills Cause Diabetes

➤ TWO PATIENTS given large doses of diazoxide, an experimental pill for high blood pressure, developed temporary acute diabetes, three British doctors reported after trying out the new drug. The drug has now been withdrawn from experimental clinical use.

The investigators, Drs. C. T. Dollery, B. L. Pentecost and N. A. Samaan, reported in The Lancet, 2:735, 1962, that their patients at Hammersmith Hospital, London, showed a satisfactory fall of blood pressure but that diabetes developed in both patients during the fourth week of treatment. When they reported to the Schering Corporation in the United States that the pills should be given only with great caution, the drug in pill form was withdrawn.

They suggested that diazoxide, which is non-diuretic, with hydrochlorothiazide, a diuretic (increasing the urine output), should be tested on animals as a means of inducing experimental diabetes. Previous experiments with diazoxide alone did not give animals diabetes before the clinical tests were done.

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Liquid Form Effective

➤ DR. FRANK A. FINNERTY of Georgetown University Medical Center told SCIENCE SERVICE that he had asked the Schering Corporation to go ahead and market the liquid form of diazoxide because intravenous injections showed dramatic results in lowering high blood pressure. Dr. Finnerty was among the American investigators of the drug.

"I agree with The Lancet article and with Schering officials who have stopped work on the pill form of the drug," Dr. Finnerty said, "but the side effects are so slight when diazoxide is injected that I consider it harmless."

There is a slight rise in blood sugar for one to two hours when the drug is injected but this transitory effect causes no trouble.

Dr. George Babcock Jr., director of Schering's medical research division, Bloomfield, N. J., stated that as of June 1962 Schering had decided to stop its research on diazoxide after two years of extensive experimentation on both animals and humans, at a cost of a million and a half dollars, because the reports from investigators in this country and abroad had shown harmful effects.

The Food and Drug Administration's department of new drugs said that no new drug application had been filed by Schering.

The number of physicians in the United States who were sent the pills for experimental use was not made known by the Schering Corporation.

No permanent effects upon patients treated are foreseen as a result of the clinical testing.

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NIH

PLASTICS IN MEDICINE—A technician at the National Institutes of Health is attaching a microelectrode holder made of fluorocarbon plastic to a model skull. The plastic, known as "Kel-F22," is chemically inert and an insulating material. A product of the 3M Company it has many uses in medicine including encephalography, heart surgery and artificial organ fabrication and function. The device on the model holds in place a microelectrode based on a hypodermic needle.

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