MEDICINE

New Sulfa Drug May Save Patients Needing Operations

Unlike Other Sulfanilamide Relatives, It Stays In Intestinal Tract, Cleaning Up Infection There

SPECTACULAR results with a new sulfa drug in fighting germs that threaten lives of patients requiring operations for cancer or other diseases of the lower alimentary tract were announced by Dr. Warfield M. Firor, acting chief surgeon, Johns Hopkins Hospital, and acting professor of surgery, Johns Hopkins Medical School, at the meeting of the Southern Surgical Association in Hot Springs, Va.

The new sulfa drug is sulfanilylguanidine. This is the first report of its use on patients. Tests of it on animals, reported in September by Dr. E. K. Marshall of Johns Hopkins Medical School, showed that it might prove very effective in fighting such intestinal tract diseases as bacillary dysentery and typhoid fever.

These tests showed that the new drug was fairly soluble in water but that, unlike other of the sulfa drugs, it is very poorly absorbed from the digestive tract. This means that almost all of it stays in the lower alimentary canal where it is needed to blitzkrieg the germs there in cases of dysentery or in other conditions.

This lower end of the digestive tract always has germs in it. So long as they remain in the alimentary canal, most of these germs normally present do no harm. When, however, the surgeon must open the canal to remove a cancer or for other reasons, the germs have a chance to get out into other parts of the abdomen and cause serious, frequently fatal infection in spite of all the care the surgeon takes to prevent infection in the wound.

Dr. Firor reports finding that giving patients the new sulfa drug before operation frees the alimentary canal of germs. In every case so far the wounds have healed without infection. Every patient has survived the operation, although mortality in operations of this type at the very best hospitals has been as high as 10% or 15%. Patients not only survive the operation with the aid of the new drug but can go home from the hospital much sooner than usual because the wound, being free from infection, heals more rapidly.

The fall in number of germs in the alimentary canal when blitzkrieged by sulfanilylguanidine is "phenomenal," Dr. Firor said. In one case the bacterial count dropped from 17,000,000 to 10,000. The reduction in number of bacteria was not this striking in all cases, but was always sufficient to enable the surgeon to perform a successful operation without infection.

Further advantage of sulfanilylguanidine is that it is less toxic than any of the other sulfa drugs. It is given by mouth. No patient has had nausea or vomiting from it.

The 15 or more patients who have now survived operations with the aid of the new drug required operations involving removal of a part of the alimentary canal or restoration of the canal after temporary drainages to the outside had been made in previous operations. Operations of this type, because of the risk of infection, are among the most difficult the surgeon undertakes. They account for about one-twentieth of all surgical operations, including even such common ones as removal of tonsils. The lower alimentary canal is one of the most frequent sites of cancer.

Sulfanilylguanidine, under the federal food and drug restrictions, has not yet been released for general sale, but is being distributed, Dr. Firor said, to a number of surgeons for further study of its effects. It is made by the Calco Chemical Company.

On the medical side, sulfanilylguanidine has been used with gratifying results in treatment of acute bacillary dysentery. Dr. Marshall expects to report soon on trials of the drug now being made in Puerto Rico, where dysentery occurs the year round. He said that it was used in a dysentery outbreak in Huntington, W. Va., this fall. The majority of 20 patients treated with sulfanilylguanidine got well within three or four days, while 20 patients who were not treated and served as controls were sick for two or three weeks. He said the drug looks most promising but that the number of cases treated so far is too small to make any claims that the new drug is a cure for bacillary dysentery.

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CHEMISTRY—MEDICINE

National Institute of Health Organizes Work on Chemicals

SEARCH for new and better sulfa drugs and for quinine substitutes will go forward at an accelerated pace in a newly organized unit of the National Institute of Health. The director of the Institute, Dr. L. R. Thompson, U. S. Public Health Service, announced the organization of this unit, the division of chemotherapy.

Dr. W. H. Sebrell, vitamin researcher and nutrition authority of the federal health service, will head the new unit as well as continue his researches on vitamins. The connection between vitamins and chemotherapy is not so remote as it may seem at first thought. Vitamins are, after all, chemicals, and they are used for curing disease, as in the case of the B vitamin, nicotinic acid, for pellagra.

The search for quinine substitutes has been stimulated by the threat of war cutting off the supply from the Dutch East Indies. There is no shortage of this malaria remedy at present, Dr. Sebrell stated, but the federal health service would feel easier about the situation if a made-in-America substitute were available.

Synthetic chemical remedies for malaria have been developed, but none of them so far is a completely adequate substitute for quinine from the bark of the cinchona tree.

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● RADIO

Highlights of the exciting news of science during 1940, as contained in Science Service's Review of the Year, will be presented by Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, Dec. 26, 3:45 p.m. EST, 2:45 CST, 1:45 MST, 12:45 PST. Listen in on your local station. Listen in each Thursday.