

with the original 18 patients at the New York Veterans Administration Hospital is still alive and tumors have regressed in other patients.

No competent investigator with a real idea for cancer treatment need go without funds for research. The National Cancer Institute estimates that more than \$100,000,000 is presently being spent for research throughout the United States in attempts to find cures for cancer.

Many university medical centers are adding cancer research to their programs. Funds for a new Eleanor Roosevelt Institute for Cancer Research have just been made available to the University of Colorado Medical Center at Boulder. For research alone and to defray expenses of hospitalized cancer patients, who cannot pay for treatment, \$300,000 is provided.

No one drug can cure all the 30 major types of cancer. Many of the 160 drugs being tested on human beings after extensive animal experiments and screening will have to be discarded because of side effects or for other reasons, but many of them will give and are giving at least temporary relief and are causing regression. All are lethal poisons and must be administered with the greatest care.

In addition to the drugs already mentioned, there are some 20 or more in use by physicians treating cancer patients. Among those that have been used with beneficial effect, sometimes in connection with X-ray treatments, are:

Chlorambucil, 6-mercaptopurine, nitrogen mustard, myeleran, urethane, thio-TEPA, TEM, male or female sex hormones, cortisone, hydrocortisone, prednisone, prednisolone and ACTH. VLB, or Velban, is a new drug produced by Eli Lilly and Com-

pany. Cytoxan and Actinomycin D, an antibiotic, are also comparatively recent.

Orthoparaprime DDD, not available commercially, is at present being tested by the NIH's Cancer Chemotherapy National Service Center for a rare type of cancer, adrenal carcinoma. This drug is specific for tissue of the adrenal cortex.

In the eagerness of some researchers to find cancer cures, more hope can be held out than is warranted. This may be true of sarcolysin, a drug used in Russia and in Britain since its synthesis in 1953. Sarcolysin is a nitrogen mustard, but is in marked contrast to other nitrogen mustards, which have been effective in treatment of leukemia and Hodgkin's disease.

Sarcolysin has been effective on some solid tumors, including seminoma, reticulum cell sarcoma, Ewing's tumor (a bone tumor) and thymoma. The Russian and British physicians who have used sarcolysin say that these tumors have completely regressed, but U.S. cancer specialists believe the reports are exaggerated.

Thousands of substances are being tested on animals before they are considered fit for experiment with human beings. New drugs are being compounded constantly in the hope that some will be found that are more promising than any found so far.

Scientists are always cautious about using the term "cure." But this does not mean that cure is beyond the realm of scientific achievement.

Some causes of cancer are known—among them being radiation and chemicals in the dye industry—but the most hopeful field of research, into the relationship of virus to cancer, may give the chemotherapists a more specific primary agent to fight.

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GENERAL SCIENCE

Key to World Peace

► WORLD PEACE now depends largely on the success of the East-West three-power talks on nuclear testing under way in Geneva.

Failure to reach a test-ban agreement would mean, at the very least, a step-up in the cold war as well as resumption of nuclear testing and subsequent contamination from radioactive fallout of the earth and its atmosphere.

Other more serious consequences are a dangerous East-West nuclear arms race and the spread of nuclear weapons to less stable governments capable of triggering a hot war.

While a time-limit has not been set on present negotiations, there is considerable pressure from both Administration and Congressional leaders to abandon negotiations if no agreement is reached by the end of summer.

The United Kingdom and the United States are resuming negotiations with the Soviet Union after a thorough review of the Western position on a nuclear test ban. The Western powers are reportedly prepared to make concessions on certain vital issues,

and they may take the initiative in offering them to the Russians.

Dr. Jerome Wiesner, Science Adviser to President Kennedy, said that he believes an agreement is possible if both sides are willing to make concessions.

At this point in the negotiations, the United States is believed to have superior nuclear power; so any yielding by the West will be made from a position of strength that could not possibly be interpreted as a mark of surrender, leaders here point out.

But although the atmosphere is hopeful, there is a growing conviction the inconclusive negotiations that have marked the past 27 months of meetings now must be terminated.

Sen. Clinton P. Anderson (D.-N.M.), past chairman of the Joint Congressional Committee on Atomic Energy, applauded the willingness of the Kennedy Administration to make a strong, concerted effort to reach an East-West agreement on this important issue.

"I hope the present talks will bring about clear knowledge of whether we will or will not be able to negotiate fruitfully with the

Russians," he told SCIENCE SERVICE. "In the past, the Russians have said they wanted suspension without inspection."

Inspection is the key to any agreement that will be acceptable to the West, he said. And if the Russians are not willing to negotiate affirmatively on this point, then further talks with them can have no meaning.

Although Sen. Anderson is opposed to indefinite negotiation he does not believe that the two and a half year moratorium on testing in this country has impaired our nuclear strength.

It has not impaired exploitation of natural resources by means of underground nuclear detonations, as some have charged.

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