

MEDICINE

Hormone-Radiation Use

Combination of simultaneous treatment with both hormones and X-rays has achieved dramatic results in the fight against advanced, incurable breast cancer.

► **SEX HORMONES** and X-rays have achieved dramatic results in treating women with far advanced incurable breast cancer, four scientists from the Los Angeles County Hospital and University of California have found. The method will be tried on prostate cancer in men.

The combined hormone-radiation treatment was discovered by accident eight years ago when a woman taking the male hormone, testosterone propionate, was given X-ray treatment to a tumor mass. The woman's case was far advanced and represented a recurrence after radical surgery.

Today the woman is still living without detectable evidence of the disease. She continues to take regular hormone treatment, and works without any disability as a housewife.

Drs. Ian Macdonald, Pierre Haig, Lewis W. Guiss and Sidney Zucherman have given the treatment to 58 women, all in advanced states of the disease.

Dr. Macdonald said that two patients are still living after eight years, one the first patient above. Three patients have lived for seven years—two without signs of disease and the other now in the terminal stages.

The combined treatment effectively controls the pain and other suffering of advanced cancer for 19 months for the whole group of 58, compared with about a year for either hormones or X-rays alone. The average longevity of life after the start of treatment is 27 months, compared with 14 months on hormones alone and 16 months for radiation alone.

During eight years, Dr. Macdonald said, the group has discovered that doses of X-rays one-half to one-third the normal for cancer are most effective. Most of the earlier patients received higher doses, and the period of control and longevity were shorter for those women than later patients who received reduced dosage.

Thirty-two of the patients are still living. The hormones are given regularly and X-ray is applied to tumor masses as needed.

The group is now extending the treatment to women in more favorable condition. These patients, however, have also had previous treatment that failed to halt the disease.

With 12 patients treated for two to three years, only one has died and nine are now without evidence of the disease. Most of these 12 had had surgery.

Dr. Macdonald emphasized that breast cancer is a highly variable disease and many women live for long periods under all the existing forms of treatment. At the Los Angeles County Hospital, records show only eight patients who have received no

treatment for advanced breast cancer. They refused treatment, and the average period of longevity in these women was five and a half months.

The next steps in the development are to get more patients, and to try similar methods with cancer of the prostate gland in men. If the results hold up when twice as many patients have been treated, Dr. Macdonald indicated that the hormone-radiation therapy would become the treatment of choice at the hospital.

Hormones Are Linked

► **THE SEX** hormones have been definitely linked to two kinds of tumors in hamsters by a Stanford University Medical School scientist.

Dr. Hadley Kirkman has found that injection of both the male and female sex hormones brings about the development of a benign tumor under the hamster's sex skin, a pigmented spot on the back of the animal.

If the hormones, androgen and estrogen, are withdrawn, the tumor stops growing but does not regress.

Dr. Kirkman found that if a part of the tumor were transplanted to another part of the animal, it became malignant and started spreading first to the lungs.

Estrogen, the female hormone, injected in young male hamsters brings about the development of a kidney tumor similar in some respects to the Wilms' tumor that strikes children. Dr. Kirkman has previously found these tumors were malignant and spread.

When the estrogen was withdrawn, both the primary tumor and the secondary tumors regressed. This is a very uncommon finding in cancer research.

Protein Acid Production

► **THE CONTROL** of growth in living cells, the heart of the cancer problem, has been linked to a substance common to all living things by Dr. Arthur B. Pardee, biochemist at the University of California, Berkeley.

Working with "custom-built" bacteria, Dr. Pardee found that if bacteria were deprived of food necessary for the production of a nucleic acid called RNA, then the cells would not produce proteins for growth either.

He suggested that the formation of the RNA is probably necessary for the production of proteins in cells, and seems to direct the cell in this growth.

Scientists believe that the nature of cellular growth and multiplication must be understood before satisfactory solution to the cancer problem can be found. If Dr. Pardee's work with bacteria can be applied to other living things, growth control may be ultimately traced to the production of RNA in the cell. Cancer is cell growth and division without control.

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PHYSIOLOGY

Skin Test Tells Sex In Doubtful Cases

► **A SKIN** test that will tell the basic sex of persons who have both male and female organs was announced by Dr. Murray L. Barr of the University of Western Ontario at the meeting of the American Association of Anatomists in Galveston, Texas.

A cell component called chromatin is almost always found in the nucleus of female skin cells, but seldom in the nucleus of male skin cells, he reported.

The presence or absence of chromatin, therefore, gives a clue to individual sex as carried to the embryo originally by the chromosomes, or units of heredity.

In a study of 30 patients of doubtful sex, called hermaphrodites, Dr. Barr found from the skin test that 17 had female type nucleus. This group included three true hermaphrodites and 14 so-called female pseudohermaphrodites.

The other 13 patients showed a true male type skin cell nucleus. This group included only one true hermaphrodite, one female pseudohermaphrodite and 11 male pseudohermaphrodites.

The rare true hermaphrodites, Dr. Barr concluded, have skin cells of either female or male types. Patients in the main group of female pseudohermaphrodites, a condition caused by overgrowth of the adrenal glands, have female type skin nuclei. Male pseudohermaphrodites have male type skin cell nuclei.

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MEDICINE

Recovery Sign For Heart Patients

► **IF THE** sex drive is greater than the fear of sudden death in a patient recovering from a heart attack, the patient is "good material for rehabilitation," Drs. Jerome G. Kaufman of New York and Marvin C. Becker of Newark, N. J., declared at the meeting of the American College of Physicians in Chicago.

Resumption of sex life, they find, seems more important to most heart attack survivors than when they can go back to work.

Three out of four who survive a heart attack are able to go back to work. Heart patients, the doctors reported, have proved themselves in the shipbuilding, automobile, farm equipment, pharmaceutical, public utility, photographic and other industries.

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