

SUMMARY FACTSHEET HUMAN EXPERIMENTATION - SFS9.001

Project Category: Other Radiation Therapy

Funding Source(s): MED
AEC

Institution(s): 1) Argonne Cancer Research Hospital and Univ. of Chicago
(AEC)
2) Brookhaven National Laboratory (AEC)
3) Lawrence Berkeley Laboratory (MED/AEC)
4) Oak Ridge Associated Univ. (AEC)
5) Piedmont Hospital, Atlanta (AEC)

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Objective(s) of Project: To develop treatments for certain medical disorders with radioisotopes that can be selectively localized in tissues to be irradiated.

Short Description: During the period 1939-1974, several research projects were undertaken to improve therapy of cancer and other diseases by methods using radioisotopes. Radioisotopes (such as iodine-131, gallium-72, gold-198 and others) were given to patients under rigidly controlled conditions to determine whether their treatment could be improved by absorption (or localization) of the radioactivity directly in the cancer. Palladium-109 was administered by direct infiltration to three patients to study tissue and tumor response. Small 1-millicurie yttrium-90 pellets were implanted for treatment of certain cancers, notably metastatic breast and prostate carcinoma. In addition, yttrium-90 oxide particulate radioisotopes was established as an agent suitable for localizing radiation in an area by injecting the artery supplying that area. Thirty-five of 51 patients with advanced and otherwise uncontrollable cancer benefited from intravascular administration.

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Agents labeled with phosphorus-32 were used to treat a variety of hemotological and medical disorders. Strontium-90 was used in the treatment of bone metastases.

Follow-up Data: Initial follow-up visits were as frequent as required (weekly, monthly, etc.). Subsequent follow-ups were usually on an annual basis. Follow-up visits include routine physical examinations and interval histories, and appropriate supporting clinical laboratory studies and diagnostic studies.

At time of death, complete information was sought to determine cause of death. When available, the postmortem findings were reviewed.

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SUMMARY FACTSHEET HUMAN EXPERIMENTATION - SFS9.002

Project Category: Other Radiation Therapy

Funding Source(s): AEC

Institution(s): Center for Energy and Environmental Research, Puerto Rico

Principal Investigator(s): V. Marcial

Objective(s) of Project: To determine optimum fractionation of irradiation for cancer, to evaluate a split-dose technique for radiotherapy of cancer, and to determine the effectiveness of radiation therapy for the regional lymph nodes areas as an adjuvant to surgery for carcinoma of the breast.

Short Description: In the period 1964 to 1970, various fractionation regimes were studied (1 vs 5 per week and 3 vs 5 per week) to observe tumor effect, survival, and normal tissue reactions. Studies were conducted to compare the results obtained by the usual uninterrupted radiation treatment with a similar dose given in two separate two-week periods with a rest interval of two to three weeks halfway in the treatment (split-dose). Finally, post-operative irradiation of lymph node areas was studied to improve prognosis in patients with breast cancer treated with radical mastectomy.

Follow-up Data: Results for fractionation of irradiation showed that the curability and complication rates were identical at 3 years in a group of 260 patients.

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