SUMMARY FACTSHEET HUMAN EXPERIMENTATION - SFS8.001

Project Category: Neutron Capture Therapy

Funding Source(s): AEC

Institution(s): Brookhaven National Laboratory

Principal Investigator(s): L. E. Farr
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Objective(s) of Project: Brain tumor therapy

Short Description: Neutron capture therapy uses the localization of boron in tumors and the reaction of boron with neutrons to achieve localized radiation of brain tumors. Over a period of two years beginning February 15, 1951, 10 patients with proved glioblastoma were treated by neutron capture therapy at the graphite research reactor. The longest survival was 186 days.

A second series of 9 patients were treated with higher neutron doses. One patient survived 18 months.

In 1959, a series using the Medical Research Reactor was started. Fifteeen patients were treated. Survival times were in the same range as for the previous series.

Follow-up Data: Whole brain sections were obtained in at least 16 of the patients and studied for tissue reactions to radiation. With the boron compounds then in use it was not possible to achieve adequate tumor control without unacceptable damage to normal tissues and the project was discontinued.