

Upton, L. I., New York BROOKHAVEN NATIONAL LABORATORY

MEMORANDUM

REPOSITORY Records Holding Area Bldg. 494
COLLECTION Protocols - Clinical
BOX No. 4
FOLDER Human Protocols 1957-1963

DATE: April 8, 1953

TO: BNL Committee for the Use of Isotopes
in Human Subjects

FROM: C. G. Lewallen, M.D.

SUBJECT: Project H-29 - Use of K-42
as a tracer in hospitalized patients.

This constitutes a request for the use of Potassium-42 as a tracer material in hospitalized patients.

A program has been initiated to determine the rates of equilibration of intravenously injected radioactive potassium in euthyroid humans and to study the effects of thyroid and adrenal cortical hormone on these rates. The patients to be used for this study will be those with carcinoma of the thyroid gland with distant metastases or patients with severe coronary sclerosis and angina pectoris. These groups of patients may reasonably be considered to have a limited life expectancy and manipulation of their thyroid and adrenal status may reasonably be considered to have therapeutic implication.

During the course of the study the patients with coronary disease will be subjected to a "thyroid ablating" therapeutic dose of approximately 75 mc of I^{131} . The patients with thyroid carcinoma will be given periodic therapeutic doses of I^{131} of clinically indicated magnitude and frequency.

The radioactive Potassium will be injected intravenously and blood samples taken for time-concentration curves up to three days.

We calculate the combined beta and gamma whole body radiation dosages to be .07 rep/uc/Kg body weight. Accordingly, 0.3 rep would be delivered by 4.3 uc/Kg.

We request permission to use Potassium-42 in the types of patients specified above in dosages up to 25.8 uc/Kg. as frequently as once a month for a period of 10 months. The quantity of stable Potassium injected will be kept at safe levels.

Approved:

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