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QUARTERLY REPORT
TO THE
DEPARTMENT OF THE ARMY
ARMED FORCES SPECIAL WEAPONS PROJECT
Contract No. DA-49-007-MD-910

STUDY OF THE POST-IRRADIATION SYNDROME IN HUMANS

Period Covered by Report: May 1, 1958 - July 31, 1958

Date of Report : August 1, 1958

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Dr. James J. Nickson

Progress Report

In the three month interval covered by this report, one patient, A. M., who was described in our report of June 1, 1958, continued to be followed and a second patient, M. W., was given total body radiation.

The first patient, A. M. with disseminated carcinoma of the cervix, post-irradiation recurrence, had been given 100 r total body midplane dose. She has now been followed for 75 days post total body radiation. The platelet count of this patient did not return to the pre-irradiation level during this interval of time. Other than the transient petechiae previously noted, there was no evidence of any bleeding diaphasis. The detailed study of blood clotting factors was done in Dr. Zucker's laboratory. These factors were found to be normal throughout the entire course of study. Of some interest, however, was the three-fold increase in the properdin level following total body radiation. This returned to the pre-irradiation base line level within one week. These studies were done with the cooperation of Dr. Chester Southam of this Institute.

The second patient, M. W. had previously received two courses of total body irradiation with Na²⁴ in cooperation with the Brookhaven National Laboratory Group. The results were described in our quarterly report of March 1, 1958. She was given a course of total body radiation consisting of 50 r midplane body dose delivered by a 1 MEV x-ray generator. Hematologic data to date have shown little change in the leukocyte count resulting from this exposure. However, there

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File: DA-49-067-MD-910

Sloan-Kettering Inst. For Cancer
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was a profound drop in the platelet count by the 45th day post total body irradiation. There has been no evidence of petechiae or ecchymoses; nor has there been any change in her blood clotting factors. It is also of some interest that this patient had a zero properdin level prior to the total body irradiation and there was no change from this abnormally low level during this period of observation. Urinary excretion of metabolites continues to be followed in both these patients. The current results have not been completely tabulated to date.

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Abstract

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Two patients are under study. One, A.M. (reported June 1, 1953) with disseminated carcinoma of the cervix, post-irradiation recurrence, received 100 r total body midplane dose and has now been followed for 75 days. Platelet count remained depressed. There was transient petechiae but no evidence of bleeding diaphasis. Blood clotting factors were normal. A three-fold increase in properdin level immediately following radiation returned to pre-irradiation level in a week. The second patient, M.W. (reported March 1, 1953 after two courses of Na²⁴ irradiation) received 50 r midplane body dose from a 1 MEV x-ray generator. There was little change in leukocyte count, but a profound drop in the platelet count by the 45th day post-irradiation. No evidence of petechiae, ecchymoses, or change in clotting factors was noted. A zero properdin level, observed prior to irradiation, did not change during this period.

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