ABSTRACT

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HEMATOLOGICAL CHANGES IN THE HUMAN BEINGS EXPOSED TO FALLOUT RADIATION

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All individuals exposed to fallout radiation showed depression of the total white, lymphocyte, neutrophile and platelet counts, more marked in the higher exposure groups. The total white count was consistently lowest during the sixth and seventh post-exposure weeks, followed by an upward trend. Six months after exposure, values for the highest exposure groups had not returned to the levels of a control population comparable with respect to age and sex distribution. The drop in lymphocytes was early and profound, and little or no evidence of recovery was apparent six months after exposure. Fluctuations in the total white counts were due to changes in the neutrophile counts. Although neutrophile counts in 10 per cent of the highest exposure groups fell to below 1000 cells/mm^3 at the time of maximum depression, no infections attributable to neutropenia per se were observed. Platelet counts showed less fluctuation than did the total white and neutrophile counts and reached lowest values on the 30th post-irradiation day. Platelet counts in 20 per cent of the individuals reached values below 90,000/mm^3 at the time of maximum depression; however, no external evidence of hemorrhage was observed in the individuals. A secondary fall in platelets with greatest depression on the 55th day was observed, and recovery to control levels was not complete at six months. The time course of change of all peripheral circulating blood elements observed was consistent with the limited previous data on human beings exposed to penetrating radiation, and different from that observed in large animals.

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