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Robert Donner

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these two floors.

- c) The need for continuing research funds which can be used year in and year out for the studies of leukemia, related blood diseases and arterio-sclerosis or hardening of the arteries.

I have discussed in detail these programs with you, but in summary they are as follows:

From our clinic, devoted to the diagnosis of clinical investigation and treatment of leukemia, polycythemia and aplastic anemia, we have obtained a large amount of data regarding these patients, both from the standpoint of investigation of the nature of these diseases and the beneficial effects of their treatment with radioactive compounds and other means. We are also now in the process of investigating the effects of male and female sex hormones in chronic leukemia, because of the findings that in lymphatic leukemia, treated with radioactive phosphorus, the male patients did much better than the female patients, and conversely in myelogenous leukemia the female patients did much better than the male patients. We are also investigating in the ultracentrifuge the serum of these patients with leukemia to see if we can pick up some clue we have done with hardening of the arteries.

We now have precise methods for the measurement of the rate of production of red blood cells by the use of radioactive iron, and in conjunction with measurement of the rate of production, we now have a precise method for measuring the life span of the red blood cell by the use of radioactive glycine. With these two methods and with the determination of the blood volume by radioactive phosphorus labeled cells, we are now able to completely quantitate these very important measurements of red blood cell physiology and to determine for the first time the type of abnormality of the red blood cell present in these diseases -- whether it is increased or decreased production, whether the life span is increased or shortened, or, as exists in some cases, changes in both of these functions.

With the use of the recently developed scintillation counter, we are now able to accurately measure the distribution of iron in the bone marrow, liver and spleen in the living patient. This has proven to be of great value in the diagnosis of increased function of the spleen, a problem of considerable clinical difficulty and importance which is leading to the diagnosis and cure of some of these patients. With the use of radioactive sodium and radioactive water, we are able to

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Mr. Robert Donner

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completely measure the volume of all the body fluid compartments, changes which are very important in disease of the heart, particularly heart failures and also in diseases of the kidney and liver.

We have also become encouraged about the investigations on the nature of the fundamental abnormality in atherosclerosis resulting from the ultracentrifugal study of blood serum and the studies with radioactive cholesterol, and feel that perhaps there will be in the near future striking advances in the prevention of this disease.

I know this is rather long but after hearing from you, want to give you any other information you need.

With best personal regards,

Sincerely,

John H. Lawrence, M. D.

Wbop

Mr. W. B. Reynolds