methods, respectively. Bone marrow lymphocytes reached a plateau labeling of 30% at 1/100 dilution of anti-mouse immunoglobulin in the indirect method, while showing a linear increment in percentage labeling up to 30–35% throughout the I^{125}-anti-mouse immunogobulin range in the direct method. Approximately two thirds of bone marrow lymphocytes remained unlabeled in both methods. The intensity of labeling was lower in the marrow lymphocytes than in the spleen cells in both methods under equivalent conditions. The majority of labeled cells showed a diffuse labeling in the direct method. In contrast, the predominant pattern of labeling was cap formation in the indirect method. Background grains were lower in the indirect than in the direct method.

The results demonstrate that the indirect method is 50–100 times more sensitive than the direct method and appears more suitable for studying the surface properties of bone marrow lymphocytes which have lower densities of surface immunoglobulin than the peripheral B cells.

Evaluation of the Tc-99m labeled RBC in the hematological quantitative measurements

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We made attempt to evaluate the accuricy, availability and overcoming the rich label efficiency of Tc-99m RBC.

Our labeled procedure has essentially been that of Eckelman and Atkins.

The labeling yields of Tc-99m RBC without reducing step averaged II, 0% with whole blood samples in which efficiency of plasma removal before labeling was 16.3% and twice-washed samples averaged 24.2%. The labeling yields of Tc-99m RBC with normal procedure averaged 55.9% with whole blood samples in which efficiency of plasma removal before labeling was 74.3% and twice-washed samples averaged 73.7%.

In vivo studies, over 96.1% of the radioactivity was found to be bound to red cell fraction and this distribution in the circulating blood no measurable change throughout the study. In 10 patients, comparison with Cr-51 in a double tagging experiment showed excellent correlation. Namely apparent red cell volume were calculated at the various intervals. The 15 min ratio of Tc-99m RBC volume to Cr-51 RBC volume was used as a measure of the stability of Tc-99m TGC. The ratio of Tc-99m RBC volume to Cr-51 RBC volume was 1.04 at 15 min, 1,02 at 30 min, 1,06 at 60 min and 1.14 at 3 hours. The ratio of Tc-99m RBC 3 hours to 15 min was 1.22. The ratio of Cr-51 RBC 3 hours to 15 min was 1.08. These results indicated that free Tc-99m is released from Tc-99m TBC with increasing time, especially over 3 hours after reinjection.

In conclusion, the results of studies on a limited number of experiments indicated that Tc99m RBC should be used to the various peripheral hematological measurements in a short period.

Studies on mean red cell life span (MRCLS) with DF ^{32}P in the patients with aplastic anemia —in view of ferrokonetics—

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Disopropylfluorophosphate-^{32}P ($DF^{32}P$) has been introduced as a clinically available radiopharmaceutical for measuring mean red cell life span (MRCLS). However, it is not widely used yet.