

In case of 18 hypothyroidism patients, less than $5 \mu\text{g}/\text{dl}$ was present in 94% by the former, all cases by the latter method.

3) The correlation between the two methods was as follows; $r=+0.73$ and $P<0.01$. A significant correlation was evident.

4) A simultaneous measurement was made

with every examination by using Monitrol I ($8.3 \mu\text{g}/\text{dl}$) and Monitrol II ($16.4 \mu\text{g}/\text{dl}$), standard serum of known thyroxine contents. The results of both methods were compared with each other, and showed correct amounts of thyroxine.

Comparison of Thyroid Gland Scintiphoto Using $^{99\text{m}}\text{Tc}$ -Pertechnetate and ^{131}I -Iodine

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Thyroid gland image using $^{99\text{m}}\text{Tc}$ -pertechnetate and ^{131}I -iodine were compared in 62 patients. ^{131}I -iodine of $50 \mu\text{Ci}$. to $150 \mu\text{Ci}$. was administered and scintiphoto was obtained at 24 hours after oral administration. Then $^{99\text{m}}\text{Tc}$ -pertechnetate of 1mCi . to 5mCi . was administered and scintiphoto was obtained at 30 min. after injection.

Results:

1) $^{99\text{m}}\text{Tc}$ -pertechnetate and ^{131}I -iodine

scintiphoto usually gave equivalent results.

2) Scintiphoto could be obtained sooner because of high doses of $^{99\text{m}}\text{Tc}$ -pertechnetate owing to its life as well as its stay in the gland and good images were obtained on high or hypothyroidism.

3) Radiation doses to the gland of $^{99\text{m}}\text{Tc}$ -pertechnetate may be greatly decreased compared with ^{131}I -iodine.

Hemesynthetase Activity and Ferrokinetics in Hyperthyroidism

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Hyperthyroid patients and rats with thyroid induced hyperthyroidism were used for measure of hemesynthetase activity and ferrokinetics.

Procedure:

1. Hemesynthetase activity was measured in bone marrow cells by counting radioactivity of ^{59}Fe incorporation into hemin in the incubation mixture of the enzyme preparation, protoporphyrin, and the isotope (modification of Labbe's method).

2. Plasma iron clearance was determined by measuring the rate of decline of radioactivity in blood (0.2ml . in rat, 1ml . in human) obtained 5, 60, 120, and 180 min. after intravenous injection of ^{59}Fe ($0.2 \mu\text{Ci}$ in rat, $10 \mu\text{Ci}$ in human). The degree of incorporation of iron into red blood cells, or iron utilization, was determined after intravenous injection of ^{59}Fe . Each blood sample was obtained on intervals 1, 5, 10 days, and radioactivity was counted by well-type scintillation