

## Thyroxine Turnover and Transport in Diabetes Mellitus

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Thyroxine transport and turnover were investigated in 27 patients with diabetes mellitus. Measurement were made of the thyroxine binding capacities of T B G, free thyroxine fractions and free thyroxine iodine concentrations in all sera.

The patients with diabetes mellitus were divided into 3 groups: untreated patients (Group I), patients treated with sulfonylurea drugs (Group II), and those treated with insulin (Group III).

T B G and T B P A capacities in three groups did not differ from those in control group, significantly, although T B G capacities

tended to diminish in Group II.

Diminution of P B I and elevation of free thyroxine fractions were observed, especially in Group II. Free thyroxine iodine concentrations (the products of free thyroxine fractions and P B I) were within normal limit in three groups.

Normal thyroxine iodine removal rate observed in three groups is compatible with the results that free thyroxine concentrations were almost normal. The findings suggested that patients with diabetes mellitus were in euthyroid status.

## The Limitations of the Scintigraphy in the Diagnosis of Thyroid Carcinoma

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The scintigrams of 57 cases of thyroid carcinoma were studied and compared with their macroscopic findings of the specimens. Eighteen of these 57 cases showed definite infiltration to the surrounding normal thyroid tissue; in the remaining 39 cases, however, 27 showed rather well-demarcated tumors and 12 showed completely encapsulated ones.

The scintigrams obtained from the above-mentioned cases revealed that so-called "the patterns of the carcinomatous infiltration" on the scintigram were found only in the cases showing definite infiltration on the specimens. In most of the cases showing well-demarcated tumors with or without capsules on the specimens, the scintigram-patterns of the defect areas were not different from those of the benign tumors. This fact can be easily understood on the geometrical correlation between the cancerous tissue and the surrounding normal thyroid gland.

As far as the scintigram is concerned, therefore, the improvement of the diagnostic ac-

curacy can not exceed these limiting factors of the organ side mentioned above. However, it is quite interest that three cases in our series, which had thyroid carcinoma infiltrating or adherent to the laryngeal box, showed the lower pole pulled up in its side on the scintigram, resulting in a defect-like pattern in this lower area.

Recently,  $^{131}\text{Cs}$ -chloride has drawn scientists' attentions because of its capability of showing thyroid carcinoma as a hot spot on the scintigram. Twelve cases were studied with  $^{131}\text{Cs}$ -chloride in our series and 8 of them showed positive findings. However, only 5 out of these 8 were thyroid carcinomas and the remaining 3 were benign conditions. In 4 cases, which include 1 thyroid carcinoma and 3 benign conditions, the scintigrams did not show good quality. Therefore, this method is not a final technique for the positive visualization of the thyroid carcinoma on the scintigram.