

The Studies on the Secretion and Metabolism of Androgens, Especially on the Interconversion Between Dehydroepiandrosterone (DHA) and DHA Sulfate (DHA-S)

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The studies were made on the secretion and metabolism of androgens, especially on the interconversion between Dehydroepiandrosterone (DHA) and DHA sulfate (DHA-S).

Tracer doses of ^{14}C -DHA and ^3H -DHA-S were simultaneously injected intravenously to normal subjects and patients with adrenogenital syndrome, Cushing's syndrome, hyperthyroidism, simple obesity, infectious hepatitis and hypertension.

The secretion rates of DHA and DHA-S were estimated by the method of Vanda Wiele et al. (Recent Progr. Hormon Res., 17, 1963) In four normal subjects (two males and two females), the daily secretion rate of DHA ranged between 1.3~11.8 mg and that of DHA-S 0.7~10.6 mg.

In three cases of adrenogenital syndrome due to congenital adrenal hyperplasia the daily secretion rates of DHA and DHA-S

were high. The rate of DHA in a case of Cushing's syndrome was high.

Tracer doses of ^{14}C -DHA, ^3H -DHA-S and DHA- ^{35}S -sulfate were injected simultaneously to a normal male subject. The blood was withdrawn several times after the injection. The DHA-S in each plasma was isolated on thin layer chromatography and the radioactivities of ^{14}C , ^3H , and ^{35}S in the DHA-S were estimated by liquid scintillation counter.

The ratio of $^3\text{H}/^{35}\text{S}$ in the DHA-S increased gradually as the time passed after the injection.

The ratio of $^{14}\text{C}/^3\text{H}$ in the DHA-S increased until the ratio became constant 40 minutes after the injection.

The results seem to indicate that there is actually between DHA and DHA-S and that an equilibrium between these two compounds is obtained in a short time in human body.

^{131}I Thyroid Uptake Rate in Euthyroids and Various Thyroid Disorders

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We reported on the ^{131}I thyroid uptake rate in various thyroid disorders more than ten years ago, but method and instrument of thyroid uptake was greatly improved ever since. This report is the results of ^{131}I thyroid uptake rate in many euthyroid and various thyroid disorders, studied at our hospital in past 3 years.

1) Medical spectrometer (channel width 364 ± 30 Kev) and B-Filter were used and counting was made after 3, 6, and 24 hours with 30 cm of distance from the neck.

2) Thyroid uptake in 300 euthyroid cases was 1.0~59.0 (average 21.1%), in 200 hyperthyroid cases 30.4~97.0 (64.6%), in 16 hypothyroid cases 1.0~13.1 (5.2%), in 152

nontoxic diffuse goiter 4.6~91.0 (30.9%), in 90 cases of nontoxic nodular goiter 2.0~60.0 (22%), in 20 cases of malignant goiter 4.5~44.5 (16.9%), in 33 cases of chronic thyroiditis 3.4~61.8 (23.9%), in 13 cases of subacute thyroiditis 0.0~4.0 (1.6%) and in 5 cases of strumitis 9.0~43.5 (25.8%).

3) In 300 euthyroid and 200 hyperthyroid cases, no significant difference of ^{131}I thyroid uptake rate was seen depending on the age or sex of the subjects.

4) Lower 24 hour uptake than 3 or 6 hour uptake was seen in 7.3% of euthyroid cases, 30.0% of hyperthyroid cases, 7.9% of cases of nontoxic diffuse goiter and 5.5% of cases of nontoxic nodular goiter.