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II. Medizinische Klinik der Universität München

TOTAL SERUM T₃ AND T₄ IN NONTOXIC GOITER
AND AUTONOMOUS ADENOMA

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Question:

Is there a disproportion of T₃ and T₄ levels in patients with nontoxic goiter and autonomous adenoma?

Method:

Serum levels of T₃ and T₄ were separately determined by a semiautomatic procedure for the simultaneous analysis of 25 samples. The closed chromatographic system consisted of three consecutive columns, as described (1). The overspill of T₄ into T₃, which was eluted ahead of T₄, was less than 0.1%. After separation, T₃ and T₄ were quantitated by microchemical iodine determination or by competitive protein binding analysis.

Results:

The values ($x \pm s$) of normal controls (N = 23) were: PB¹²⁷I = 5.7 ± 0.6 $\mu\text{g}/100$ ml, T₃-uptake = $34.8 \pm 4.0\%$, free thyroxine index = 1.98 ± 0.26 $\mu\text{g}/100$ ml, total T₄ = 7.65 ± 1.07 $\mu\text{g}/100$ ml, total T₃ = 146 ± 20 ng/100 ml, T₃/T₄ ratio = 19.6 ± 4.1 (ng/ μg). Patients with nontoxic goiter (N = 43) showed the following values: PB¹²⁷I = 4.8 ± 1.1 $\mu\text{g}/100$ ml, T₃-uptake = $33.7 \pm 4.6\%$, free thyroxine index = 1.60 ± 0.40 $\mu\text{g}/100$ ml, total T₄ = 6.19 ± 1.42 $\mu\text{g}/100$ ml, total T₃ = 171 ± 41 ng/100 ml, T₃/T₄ ratio = 28.8 ± 8.9 (ng/ μg). — Thus, in patients with nontoxic goiter PB¹²⁷I, free thyroxine index and total T₄ were significantly lower, whereas total T₃ and the T₃/T₄ ratio were significantly higher ($P < 0.005$) than in normal controls.

In addition, results of patients with autonomous adenoma of the thyroid will be presented.

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