

STUDY OF PHYSIQUE IN THYROID PATIENTS

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Abstract

Clinical examinations of physique, involving 20 parameters of body measurements, were made on 57 female thyroid patients in Western Hungary. The proportions were studied with the method of ROSS and WILSON (1974) while the procedure of HEATH and CARTER (1967) was used for somatotyping. The somatotype of hyperthyroid patients was 6.56-5.23-1.42. The somatotype of hypothyroid patients was 7.17-5.96-1.27. It is due to modern hormone therapy that the difference in physique related to the two disorders is significantly decreased.

Key words: Hyperthyroidism, hypothyroidism, clinical science of physique, somatometry

Introduction

The clinical science of physique, as part of human biological examinations, is more intimate than the applied science of physique (EIBEN, 1992). New perspectives may be discerned from new types of examination methods (TÓTH, 1996). It has a double aim: to study physique as a part of morphological constitution (EIBEN, 1972), which may predispose to some diseases (PADOS et al., 1988), and to follow up the changes in physique caused by diseases. The theme and the investigation topics are based on from applied researches, from the middle of the 20th century (BUDAY, 1943; CURTIUS, 1954). Thyroid disorders are more frequent in women; BUDAY deals with the functional problems and the changes in physique in detail (BUDAY, 1943). Even clinical practice regards morphological changes as characteristic symptoms (MAGYAR and PETRÁNYI, 1986). The present study takes the results of modern hormone therapy into consideration and reports data on the physique of patients followed up in Western Hungary.

The examinations were carried out within the scope of a special Thyroid Patients' Consultation of the Markusovszky Hospital and Outpatient Polyclinic in Vas County in precisely diagnosed 26-69-year-old patients (mean: 48.7 years). The purified sample consisted of the data on 57 patients followed up (hyperthyroidism: $n = 31$, hypothyroidism: $n = 26$). All of them belonged in the Hungarian population and

Europid race. 20 body measurements were made on each patient followed up. The method of the examination was based on the measurement technique of MARTIN and SALLER (1957), with consideration to the recommendations of the IBP/HA (TANNER et al., 1969). The changes in proportionality were analysed by comparing the data with those of the Unisex Human Phantom (ROSS and WILSON, 1974). Somatotyping (SHELDON et al., 1940) was performed according to the method of HEATH and CARTER (1967).

Results and Discussion

The results of anthropometric examinations are shown in Tables 1 and 2. Among the body proportions, attention should be paid to the high proportional values of the chest circumference and some skinfolds, and also the marked negativity of the femoral circumference, in both groups examined. Analysis of these body proportions should be a topic of further studies.

Somatotypes are to be found in the meso-endomorphic field. The mean is 7.17-5.96-1.27 in hypothyroid patients, and 6.56-5.23-1.42 in hyperthyroid patients (Figs 1 and 2). The results of the study reveal that the concomitant morphological symptoms have lessened appreciably in both thyroid disorders. The reason might be the modern hormone therapy, which (besides normalizing the thyroid activity) prevents or eliminates changes in physique.

Table 1. Means, standard deviations, and standard errors of body measurements investigated in hyperthyroid patients.

Body measurements investigated	\bar{x}	s	s/\bar{x}
Weight (kg)	65.71	12.22	2.19
Sitting height (cm)	84.95	4.80	0.86
Height (cm)	160.4	6.74	1.21
Height of acromion (cm)	133.27	6.35	1.14
Height of dactylion (cm)	61.01	12.28	2.20
Height of iliospinale (cm)	91.75	4.39	0.79
Neck circumference (cm)	35.96	3.03	0.54
Chest circumference (cm)	90.28	7.42	1.33
Upper arm circumference (relaxed) (cm)	27.03	3.68	0.66
Upper arm circumference (bent) (cm)	27.99	3.61	0.65
Thigh circumference (cm)	46.57	5.85	1.05
Calf circumference (cm)	36.00	3.79	0.68
Bicondylar width of humerus (mm)	65.4	5.20	0.93
Bicondylar width of femur (mm)	99.73	10.71	1.92
Medial calf skinfold (mm)	21.27	8.35	1.50
Triceps skinfold (mm)	22.00	6.71	1.20
Biceps skinfold (mm)	14.73	6.31	1.13
Subscapular skinfold (mm)	19.68	8.34	1.50
Abdominal skinfold (mm)	22.31	8.28	1.49
Suprailiac skinfold (mm)	25.57	6.91	1.24

Table 2. Means, standard deviations, and standard errors of body measurements investigated in hypothyroid patients.

Body measurements investigated	\bar{x}	s	s \bar{x}
Weight (kg)	71.92	15.3	3.00
Sitting height (cm)	85.69	2.85	0.56
Height (cm)	160.27	4.32	0.85
Height of acromion (cm)	132.86	4.36	0.85
Height of dactylion (cm)	63.72	2.95	0.58
Height of iliospinale (cm)	90.70	3.55	0.70
Neck circumference (cm)	35.77	2.76	0.54
Chest circumference (cm)	95.16	9.26	1.82
Upper arm circumference (relaxed) (cm)	29.32	4.57	0.90
Upper arm circumference (bent) (cm)	30.05	4.45	0.87
Thigh circumference (cm)	49.43	6.37	1.25
Calf circumference (cm)	37.46	3.58	0.70
Bicondylar width of humerus (mm)	66.50	6.11	1.20
Bicondylar width of femur (mm)	100.92	9.64	1.89
Medial calf skinfold (mm)	21.19	8.31	1.63
Triceps skinfold (mm)	23.77	8.16	1.60
Biceps skinfold (mm)	16.65	7.77	1.52
Subscapular skinfold (mm)	22.50	9.03	1.77
Abdominal skinfold (mm)	24.31	9.05	1.77
Suprailiac skinfold (mm)	28.69	7.12	1.40

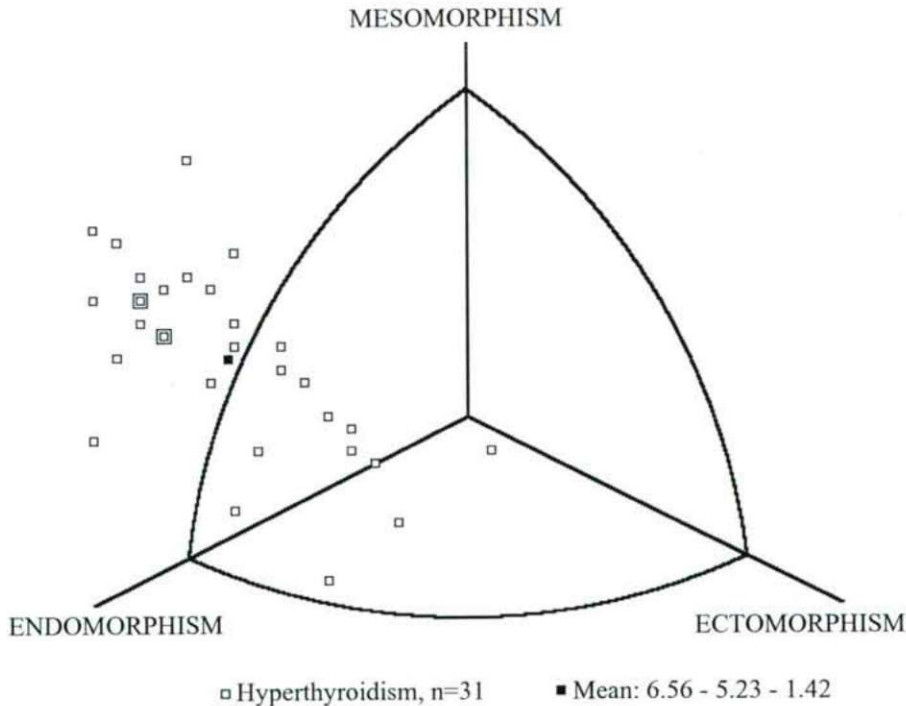


Fig. 1. Somatotypes of hyperthyroid patients.

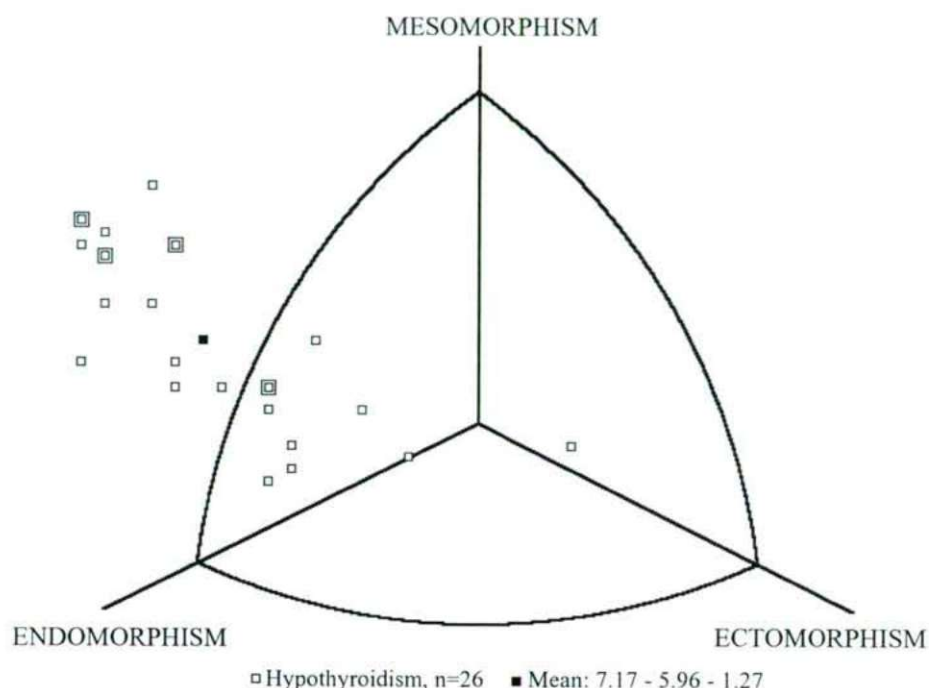


Fig. 2. Somatotypes of hypothyroid patients.

Conclusions

This study on hypothyroid and hyperthyroid patients revealed that the physique characteristics described by BUDAY (1943) can no longer be seen in the patients followed up, due to modern hormone therapy. The changes in physique of diagnostic value, summarized by MAGYAR and PETRÁNYI (1986), may develop in a patient with a recently diagnosed disorder; nevertheless, they markedly decrease later as a result of adequate therapy.

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