

BODY COMPOSITION AFTER TREATMENT OF SUBCLINICAL HYPERTHYROIDISM

Authors Diana Boj-Carceller¹, Alejandro Sanz-París¹, Enrique Sánchez-Oriz², Rafael García-Foncillas López², Pilar Calmarza-Calmarza³, Vicente Blay-Cortés⁴, M^a Dolores Abós-Olivares⁵

¹Hospital Universitario Miguel Servet, Department of Endocrinology & Nutrition, ² Department of Biostatistics and Public Health, University of Zaragoza, ³Hospital Universitario Miguel Servet, Service of Clinical Biochemistry, ⁴ Hospital General de la Defensa Orad y Gajías, Department of Endocrinology, ⁵Hospital Universitario Miguel Servet, Department of Nuclear Medicine

Background:

Subclinical Hyperthyroidism (SHT) is associated with harmful effects on cardiovascular system, bone metabolism and progression to clinical hyperthyroidism. Loss of weight is a common fact in patients with clinical hyperthyroidism and of particular relevance in elderly patients, who are vulnerable to sarcopenia.

Objective:

To assess changes in body composition after radioiodine therapy for SHT due to toxic nodular goiter.

Methods:

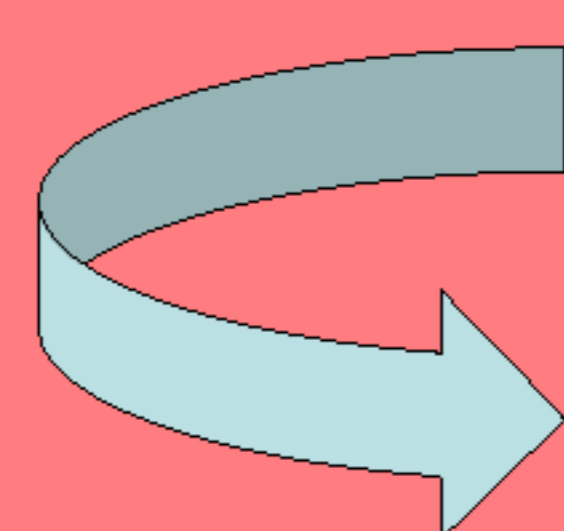
Prospective controlled cohort study. Patients with persistent SHT due to toxic nodular goiter received a single fixed dose of ¹³¹I (555 MBq). A control group was established with patients who preferred to delay treatment. Body composition (lean mass, fat mass and bone mineral content) was determined by dual-energy X-ray absorptiometry (DEXA) at baseline and 12 months after.

Results:

	control group (n=12)	treatment group (n=17)	p value
age (years)	67.0 ± 12.0	71.2 ± 11.2	
sex (male/female)	3/9	4/13	
TSH (μUI/mL)	0.26 ± 0.27	0.15 ± 0.16	0.325
T4 (ng/dL)	1.0 ± 0.2	1.0 ± 0.2	0.711
T3 (pg/mL)	3.4 ± 0.6	3.4 ± 0.5	0.478
premorbid weight (Kg)	67.7 ± 21.1	71.8 ± 12.5	0.327
weight (Kg)	63.9 ± 21.3	69.5 ± 13.1	0.156
height (cm)	157.9 ± 10.3	157.7 ± 9.4	0.875
BMI (Kg/m ²)	25.9 ± 7.2	27.9 ± 4.4	0.184
FM (Kg)	22.3 ± 13.5	27.3 ± 8.5	0.051
MM (Kg)	39.9 ± 10.0	40.4 ± 9.4	0.626
BM (Kg)	1.8 ± 0.5	1.9 ± 0.6	0.690
BMD (g/cm ²)	1.01 ± 0.1	1.2 ± 0.5	0.658
t score	-1.3 ± 1.2	-0.8 ± 1.6	0.492
% FM	33.2 ± 9.0	39.0 ± 8.6	0.092
SMI (Kg/m ²)	6.6 ± 1.3	6.5 ± 1.2	0.866

	CONTROL GROUP			TREATMENT GROUP		
	before (n=12)	after (n=12)	p value	before (n=17)	after (n=17)	p value
weight (Kg)	63.9 ± 21.3	65.4 ± 20.8	0.272	69.5 ± 13.1	70.2 ± 10.3	0.227
height (cm)	157.9 ± 10.3	156.5 ± 12.4	0.400	157.7 ± 9.4	157.3 ± 9.5	0.229
BMI (Kg/m ²)	25.9 ± 7.2	26.7 ± 6.9	0.084	27.9 ± 4.4	28.4 ± 3.7	0.124
FM (Kg)	22.3 ± 13.5	23.6 ± 13.2	0.084	27.3 ± 8.5	27.8 ± 6.8	0.093
MM (Kg)	39.9 ± 10.0	40.0 ± 10.4	0.875	40.4 ± 9.4	40.5 ± 7.8	0.407
BM (Kg)	1.8 ± 0.5	1.8 ± 0.5	0.136	1.9 ± 0.6	1.9 ± 0.5	0.943
BMD (g/cm ²)	1.0 ± 0.1	0.8 ± 0.7	0.937	1.2 ± 0.5	1.0 ± 0.2	0.679
t score	-1.3 ± 1.2	-1.3 ± 1.1	0.722	-0.8 ± 1.6	-0.8 ± 1.3	0.682
% FM	33.2 ± 9.0	34.7 ± 8.9	0.136	39.0 ± 8.6	39.5 ± 7.2	0.309
SMI (Kg/m ²)	6.6 ± 1.3	6.5 ± 1.4	0.929	6.5 ± 1.2	6.5 ± 0.9	0.619

	CONTROL GROUP			TREATMENT GROUP		
	before (n=7)	after (n=7)	p value	before (n=11)	after (n=11)	p value
weight (Kg)	60.2 ± 13.8	62.3 ± 14.4	0.310	64.1 ± 10.0	66.9 ± 9.2	0.010*
height (cm)	158.5 ± 12.8	157.8 ± 16.9	0.854	153.8 ± 7.9	153.0 ± 7.1	0.124
BMI (Kg/m ²)	24.7 ± 4.5	25.4 ± 3.2	0.398	27.3 ± 4.8	28.7 ± 4.5	0.004*
FM (Kg)	18.0 ± 0.7	19.5 ± 0.6	0.237	26.1 ± 8.5	27.8 ± 7.9	0.013*
MM (Kg)	40.4 ± 10.1	41.0 ± 11.1	0.398	36.3 ± 0.4	37.4 ± 0.4	0.033*
BM (Kg)	1.7 ± 0.6	1.8 ± 0.6	0.128	1.6 ± 0.5	1.8 ± 0.4	0.328
BMD (g/cm ²)	1.0 ± 0.1	0.7 ± 0.9	0.735	1.2 ± 0.6	1.0 ± 0.1	0.540
t score	-1.5 ± 1.4	-1.4 ± 1.4	0.396	-1.0 ± 1.4	-0.9 ± 1.3	0.672
% FM	29.8 ± 8.0	31.4 ± 7.6	0.499	40.1 ± 8.1	41.0 ± 7.0	0.248
SMI (Kg/m ²)	6.6 ± 1.2	6.8 ± 1.1	0.600	6.0 ± 0.6	6.3 ± 0.6	0.033*



Subjects > 65 years

Conclusions:

Treatment of SHT seems to have positive effects on body composition in subjects older than 65 years. Weight gain reflects increases in fat and lean mass.

References:

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- Greenlund LJ, Nair KS, Brennan MD. Changes in body composition in women following treatment of overt and subclinical hyperthyroidism. *Endocr Pract*. 2008;14: 973-8.

