

Thyroid dysfunction among Greek type 1 and type 2 diabetic patients attending an outpatient clinic

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INTRODUCTION

The aim of this study was to determine the prevalence of hypothyroidism and nodular thyroid goiter in Greek patients with type 1 (T1DM) and type 2 (T2DM) diabetes as well as its possible relation to glycemic control and to diabetic complications. The prevalence of hypothyroidism in the general population is 6.6-13.4%, in patients with diabetes mellitus type 1 it is 10-48% and in those with type 2 10-24%. The prevalence of nodular goiter in the general population is about 20% with a higher prevalence in patients more than 60 years old. In patients with type 2 diabetes mellitus the prevalence of nodular goiter is about 50%.

PATIENTS AND METHODS

A total of 1015 euthyroid patients (60.4% men) with T1DM or T2DM, consecutively examined in the Outpatient Diabetes Clinic, participated in the study. In every patient anthropometric and biochemical measurements, occurrence of diabetes complications and classical comorbidities were assessed. Average HbA1c of the previous year was calculated. Moreover, the wellness feeling of every patient was determined, using a scale from 1 to 10. All the above parameters were compared between subjects with or without thyroid disease. All the patients with hypothyroidism included in the study have had positive thyroid auto-antibodies against thyroid peroxidase (anti-TPO). All the patients with nodular goiter have had at least one ultrasound of the thyroid.

RESULTS

	Diabetes Mellitus type1	Diabetes Mellitus type2		Diabetes Mellitus type1	Diabetes Mellitus type2	p
1015 patients	12.6(%)	87.4 (%)				
Sex (Men/Women) (60.4%Men)	58.4/41.6(%)	52.8/47.2(%)	HYPOTHYROIDISM	43.5%	37.1%	ns
Mean Age	47.5 years	67.5 years	NODULAR GOITER	18.8%	34.1%	p<0.05
Mean Duration of Diabetes	23.6 years	15.9 years				

Diabetes Mellitus type1	HYPOTHYROIDISM	Without HYPO-THYROIDISM	p
HbA1c	7.74	7.61	NS
BMI (Kg/m ²)	26.77	26.2	NS
CHOL(mg/dl)	176	182	NS
HDL(mg/dl)	62	53	<0.05
LDL(mg/dl)	99	108	NS
TG(mg/dl)	83	92	NS
WAIST(cm)	94	93	NS
eGFR (ml/min)	99.91	107.8	NS
SBP(mmHg)	114.8	115.5	NS

Diabetes Mellitus type2	HYPOTHYROIDISM	Without HYPOTHYROIDISM	p
Sex (Men/Women)(%)	10.2/43.2	89.8/56.8	<0.001
HbA1c	7.27	6.98	<0.01
BMI(Kg/m ²)	30.28	29.37	NS
CHOL(mg/dl)	184.97	168.17	<0.001
HDL(mg/dl)	51.28	46.77	<0.01
LDL(mg/dl)	124	95.39	NS
TG(mg/dl)	141	138	NS
WAIST (cm)	101.64	102.16	NS
eGFR (ml/min)	86.68	84	NS
SBP(mmHg)	120.67	123.25	NS
Wellness feeling	5.3	7.5	<0.001

In both types of diabetes mellitus, there were no statistically significant differences between the patients with and without nodular goiter. Additionally, no statistically significant differences concerning the occurrence of diabetes complications and classical comorbidities, were found between patients with and without hypothyroidism and those with and without nodular goiter.

CONCLUSIONS

Screening for thyroid disease among patients with type 2 diabetes should be routinely considered because of the high prevalence of hypothyroidism and nodular goiter in these patients. It is another risk factor that if remains undiagnosed could aggravate the usual comorbidities of diabetes mellitus.

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