

Evaluation the Relationship Between Subclinical Hypothyroidism and Vitamin D Level

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Background

Subclinical hypothyroidism is a thyroid disease which encountered in practice, commonly. Thyroid hormones affect metabolic syndrome parameters including HDL, cholesterol, triglycerides, plasma glucose levels, blood pressure and abdominal obesity (1). Furthermore; there have been growing evidences about the relationship between vitamin D deficiency and autoimmune thyroid diseases (2). Therefore; we aimed to evaluate the association between the metabolic parameters and 25-OH-vitamin D levels in subclinic hypothyroid patients.

Methods

This study consisted of 110 patients (62 subclinical hypothyroid and 48 euthyroid) who attend to Haseki Training and Research Hospital's Internal Medicine outpatient clinics between 2014 January to April. The groups were similar interms of age ($51,66 \pm 14,64$ in subclinical hypothyroid; $47,42 \pm 15,57$ in euthyroid group; $p=0.14$). Serum FT4, TSH, total cholesterol, triglyceride, LDL-C, HDL-C, fasting glucose and 25(OH)- vitamin D levels were recorded. Height, weight, waist circumference and blood pressure of all subjects were measured.

Results

The 25-OH-vitamin D, fasting glucose, total cholesterol, triglycerides, HDL-C, LDL-C and waist circumference levels were similar between euthyroid and subclinical hypothyroid groups ($p>0.05$). The 25-OH-vitamin D level was 20.93 ± 16.5 in subclinical hypothyroid group and 21.88 ± 19.15 in euthyroid group. The increased BMI was found in subclinical hypothyroid group ($p=0.024$). Prevalence of metabolic syndrome was significantly lower in euthyroid group (43.5% in subclinical hypothyroid group, 25% in euthyroid group; $p:0.044$).

	Subclinical Hypothyroidism	Euthyroidism	P value
25(OH)-vitamin D	20.93 ± 16.50	21.88 ± 19.15	0.780
Glucose	117.32 ± 57.01	108.67 ± 48.37	0.401
T. cholesterol	227.45 ± 69.59	206.88 ± 43.09	0.075
Triglyceride	151.11 ± 84.47	123.35 ± 68.36	0.066
HDL-cholesterol	54.66 ± 12.96	52.13 ± 11.42	0.288
LDL-cholesterol	137.55 ± 38.68	131.41 ± 34.46	0.390
Metabolic syndrome (%)	43.5%	25%	0.044

Table 1. Biochemical parameters of patients with subclinical hypothyroidism and euthyroidism

	Subclinical Hypothyroidism	Euthyroidism	P value
BMI (kg/m ²)	29.68 ± 5.72	27.35 ± 4.61	0,024
Waist Circumference	91.66 ± 13.44	88.96 ± 12.80	0.288
Systolic Blood Pressure	127.98 ± 18.14	121.04 ± 19.26	0,055
Diastolic Blood Pressure	80.81 ± 8.97	77.50 ± 11.01	0.086

Table 2. Physical examination findings of patients with subclinical hypothyroidism and euthyroidism

Conclusion

We found the lower vitamin D levels in subclinical hypothyroid group, however the difference did not reach statistical significance. Additionally, the higher metabolic syndrome prevalence is obtained in subclinic hypothyroidism.

References

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