

Relationship to TSH, and interleukin levels patients with Hashimoto's Thyroiditis

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OBJECTIVES

Hashimoto's Thyroiditis is the most common clinical expression of thyroid dysfunction and result from organ-specific autoimmune reaction. Cytokines are play an important role in autoimmunity, by stimulating B and T cells. Studies shows that there is a relationship between thyroid function tests with cytokines. The aim of this study is to examine the relationship between cytokines and thyroid function tests in patient with Hashimoto's Thyroiditis

METHODS

A total of 139, cases with Hashimoto's Thyroiditis and 50 healthy control were enrolled in this study. Subjects were collected from Endocrinology Clinic of Pamukkale University in Turkey.

Serum levels of PTH,25(OH)D,Ca, P, sT3 (pg/ml) sT4(ng/dl) TSH (μIU/ml) were measured and IL-4, IL-5, TNF-α, IFN-γ analysis were performed with Elisa kits.

	Hashimoto thyroiditis(n=139)	Control (n=50)	P
Age (years)	39.02 ± 9.88	35.02 ± 10.96	0.019*
25(OH)D	14.88 ± 8.23	15.52 ± 1.34	0.977
PTH (pg/ml)	58.94 ± 23.32	54.40 ± 3.10	0.305
Ca (mg/dl)	8.98 ± 0.40	8.95 ± 0.04	0.557
P (mg/dl)	3.44 ± 0.53	3.20 ± 0.06	0.011*
ALP (IU/L)	70.35 ± 24.95	69.92 ± 2.67	0.930
IL-2 (pg/ml)	60.14 ± 30.87	45.79 ± 3.75	0.005*
IL-4 (pg/ml)	27.39 ± 39.95	20.54 ± 1.81	0.016*
IL-5 (pg/ml)	16.22 ± 34.02	15.62 ± 1.93	0.211
TNF-α (pg/ml)	41.92 ± 85.09	39.11 ± 8.63	0.001*
IFN-γ (pg/ml)	46.05 ± 40.49	47.89 ± 1.23	<0.001*

Table-1 . Laboratory results of HT and control groups

	IL-2	IL-4	IL-5	TNFα	IFN-γ
Age (years)	,292	,613	,058	,682	,713
FT3 (pg/ml)	,250	,498	,747	,798	,106
FT4(ng/dl)	,183	,002	,037	,041	,209
TSH (μIU/ml)	,979	,000	,341	,006	,000

Table-2 Correlation analysis of cytokines in Hashimoto thyroid patients

RESULTS

IL-4, and IFN-γ levels were significantly correlated with TSH levels. (p<0.01)TNF-α level was correlated with TSH levels, but was not statistically significant. IL-2 and IL-5 were not correlated with TSH levels.

CONCLUSIONS

In studies, TNF-α and IL-1β resulted in changes in thyroid hormone concentrations in experimental animals and human volunteers.(1) The rise in the serum IL-6 levels in these conditions reflects the thyroid cell damage and the consequent release of intracellularly stored cytokine.(2) Recent studies show that cytokine levels increase in patients with autoimmun thyroid diseases. Our study supported these findings and IL-4, and IFN-γ levels were significantly correlated with TSH levels in patients with Hashimoto's Thyroiditis

References

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