

Thyroid Autoimmunity in Patients with Hyperprolactinemia: An Observational Study



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INTRODUCTION

It has been suggested that deviations of prolactin (PRL) levels from the normal range can result in significant alterations in the immune system.

We attempted to establish whether there is a relationship between hyperprolactinemia and primary thyroid disorders with the focus on patients with autoimmune features.

METHODS

The medical records of 100 patients with hyperprolactinemia (HPRL) admitted to our endocrine unit from 2005 to 2013 were retrospectively examined. Records of thyroid ultrasonography (USG), basal serum levels of thyroid stimulating hormone, circulating free thyroxine, free triiodothyronine, antithyroglobulin (anti-Tg) and antithyroperoxidase (anti-TPO) antibodies were analyzed. In 100 control subjects, matched by age and gender with HPRL patients, thyroid USG, thyroid function tests (TFTs) and autoantibody panel were obtained.

RESULTS

The median PRL in patients was 93 ng/ml (range: 37-470). Twenty-five patients (25%) and 22 controls (22%) had positive anti-Tg and/or anti-TPO titre ($P=0.739$). The median serum PRL was 98 (37-470) ng/ml in patients with positive thyroid autoantibodies and 92 (40-470) ng/ml in patients who tested negative for thyroid autoantibodies ($P=0.975$). Among the individuals with autoantibody positivity TFTs abnormalities were more frequent in HPRL patients (60%, 14 subclinical hypothyroidism and one hyperthyroidism out of 25) than in controls (9.1%, 2 subclinical hyperthyroidism out of 22) ($P<0.001$). Twenty-seven patients with HPRL and 31 controls had goiter (27 vs 31%, $P=0.437$).

Forty-six patients (46%) and 50 (50%) control subjects had one or more of the features of thyroid disorder which are goiter positive thyroid autoantibody and thyroid function abnormality ($P=0.888$).

CONCLUSION

HPRL may be associated with more severe thyroid dysfunction in patients with thyroid autoimmunity.

Table 1. Thyroid function tests and autoantibody panel of the patients with hyperprolactinemia (HPRL) and control subjects.

	Patients (n=100)	Control (n=100)	P
Serum TSH	2.2 (0.01-9.2)	1.9 (0.01-5.7)	0.322
Serum FT3	3.2 (1-4.6)	3.3 (2.3-4.4)	0.132
Serum FT4	1.1 (0.3-1.8)	1.2 (0.8-1.7)	0.09
TFTs			
Euthyroidism (%)	73	95	
Hyperthyroidism (%)	1		<0.001
Hypothyroidism (%)	-		
Subclinical Hypothyroidism (%)	25	3	
Subclinical Hyperthyroidism (%)	1	2	
Anti-Tg Positivity (%)	16	10	0.207
Anti-TPO Positivity (%)	19	17	0.712
Antibody Positivity (%) ^a	25	22	0.739
Thyroid USG			
Normal (%)	50	41	
Goiter (%)	27	31	0.437
Thyroiditis (%)	23	28	

TSH, thyroid stimulating hormone; FT3, free triiodothyronine; FT4, free thyroxine; anti-Tg, antithyroglobulin antibody; anti-TPO, antithyroperoxidase antibody; TFTs, thyroid function tests; USG, ultrasonography. Parametric values was expressed as mean±S.D. Statistical significance was set a P value of 5%.
Normal values: FT3: 1.8-4.6 pg/ml, FT4: 0.9-1.7 ng/dl, TSH: 0.27-4.2 uIU/ml. ^a Positivity of anti-Tg and/or anti-TPO.