

Viral and other infections in community and primary hypothyroidism – cause or coincidence?

Author: Jayanta Chakraborty

Aims

Prevalence of primary hypothyroidism is increasingly keeping close pace with type 2 diabetes mellitus. The overall prevalence of hypothyroidism was 10.95% in India. Following a national strategy of supplementing salt with iodine, the bulk of primary hypothyroidism is now due to autoimmune thyroid destruction. In addition to genetic predisposition, environmental factors play a key role in autoimmunity.

Viruses are important triggers of molecular mimicry and autoimmune disorders. Several autoimmune diseases like type 1 diabetes and Guillain-Barré syndrome have an infection background. This study was undertaken to unveil any infectious background of primary hypothyroidism.

Methods

A total of 32 subjects were included in the study. 18 were primary hypothyroid and 14 were euthyroid as a control group. All subjects were screened for recent and remote prevalent community viral and parasitic infections. Wilcoxon Mann-Whitney test was used to find the significance of study parameters. The chi-square/Fisher's exact test was used.

Results

The seropositivity of cytomegalovirus (CMV) was 94.12% in hypothyroid patients, compared with 64.19% in the control group, which is statistically significant ($p=0.037$).

Conclusions

A statistically significant increased prevalence of cytomegalovirus infection was noted in hypothyroid subjects compared with controls.

Inference: The seropositivity of CMV is 94.12% in hypothyroid subjects higher as compared to 64.19% in controls, which is statistically significant ($p=0.037$).

Inference: The rubella immunoglobulin G seropositivity was positive in 88.24% of hypothyroid but only 71.43% of control subjects, which is not statistically significant, (p -value 0.36, as computed by Fischer's exact test).

Table 1.

Cohort	Cytomegalovirus		Total	p
	Negative	Positive		
Control, n	5	9	14	0.037
%	35.71	64.29		
Hypothyroid, n	1	16	17	
%	5.88	94.12		
Total	6	25	31	

$p<0.05$ is considered as statistically significant, p values computed by Fisher's exact test

Table 2.

Cohort	Rubella		Total	p
	Negative	Positive		
Control, n	4	10	14	0.36
%	28.57	71.43		
Hypothyroid, n	2	15	17	
%	11.76	88.24		
Total	6	25	31	

$p<0.05$ considered as statistically significant, p values computed by Fisher's exact test

Conclusion

The finding of an infectious agent as a root cause of autoimmune thyroiditis and hypothyroidism would help in prevention of many facets of the disease. The present study has unequivocally shown that there is a statistically significant increased prevalence of remote CMV infection in primary hypothyroid subjects. ■

Conflict of interest statement

There is no conflict of interest.

Author: Department of Endocrinology and Metabolism, Vivekananda Institute of Medical Sciences, Kolkata, India