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INTRODUCTION

- Eye, is an organ which is effected from the various systemic disorders.
- Thyroid hormone plays a crucial role in the neural development of the eye, especially for normal development of retina and attainment of color vision.
- Ocular changes and ocular symptoms may be encountered in patients with hypothyroidism and hyperthyroidism. However, the data concerning the effects of thyroid disorders on intraocular pressure (IOP), central corneal thickness (CCT) and retinal thickness (RT) are very rare.
- Some studies revealed that, hypothyroidism may cause a reversible increase in CCT and IOP and also IOP changes may be due to secondary to CCT changes. Also it is shown that, the decrease in CCT is correlated with the decrease in thyroid stimulating hormone (TSH) levels.
- Here, we aimed to evaluate the alterations in IOP, CCT and RT in patients with euthyroid autoimmune thyroiditis (AIT).

METHODS

- Twenty-five subjects with euthyroid AIT were included into the study. The patients were compared with age and sex-matched 40 healthy subjects.
- A detailed ophthalmologic examination including the IOP, CCT and RT was performed in both groups

RESULTS

- There was no statistically significant difference in mean right RT, left RT, right CCT and left CCT between two groups ($p>0.05$ for all parameters). Also, no significant difference was found between groups concerning right and left IOP ($p>0.05$ for all parameters).

- In patients groups, left RT was significantly higher in patient with TSH > 2.5 $\mu\text{IU/mL}$ than those of TSH < 2.5 $\mu\text{IU/mL}$ (294.85 ± 23.58 μm vs 261.50 ± 21.70 μm , $p=0.003$). A positive correlation was observed between left RT and TSH levels ($r=0.269$, $p=0.033$).
- No significant correlation was found between free triiodothyronine (fT3) levels, and right CCT, right RT, right IOP, left CCT, left RT and left IOP levels ($p>0.05$ for all parameters).
- Also, free thyroxine (fT4) levels were not significantly correlated with right CCT, right RT, right IOP, left CCT, left RT and left IOP levels ($p>0.05$ for all parameters).

CONCLUSION

- In the literature there is few data about thyroid disorders related with IOP, CCT and RT.
- In a study in patients with hypothyroidism, IOP and CCT changes have been evaluated before and after the L-thyroxine treatment and they have demonstrated that a significant reversible increase in CCT, which is reversed after the L -thyroxine replacement treatment. In another study, IOP rise was attributed to the accumulation of mucopolysaccharides in the trabecular meshwork and/or external outflow pathways by reducing the aqueous outflow.
- A study which is conducted in hyperthyroid patients demonstrated that, hyperthyroidism or severity of orbital disease in Graves ophthalmopathy lead no changes in CCT.
- In our study, we observed no significant difference between groups concerning IOP, CCT and RT. But, left RT was significantly higher in patient with TSH > 2.5 $\mu\text{IU/mL}$ than those of TSH < 2.5 $\mu\text{IU/mL}$. Also, A positive correlation was observed between left RT and TSH levels.
- So, further studies with larger sample size are needed to evaluate IOP, CCT and RT in patients with euthyroid AIT.

