

THYROID ASSOCIATED OPHTHALMOPATHY – A REVIEW

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ABSTRACT

Thyroid associated ophthalmopathy is an autoimmune disorder affecting the orbital and periorbital tissues. Hyperthyroidism is commonly associated with thyroid associated ophthalmopathy, however in 5% to 10% of cases it is euthyroid. Genetic, environmental and endogenous factors play a role in the initiation of the thyroid ophthalmopathy. Smoking has been identified as the strongest risk factor for the development of the disorder. The pathogenesis involves activation of both humoral and cell mediated immunity with subsequent production of glycoaminoglycans, hyaluronic acid resulting in oedema formation, increase extraocular mass and adipogenesis in the orbit. The natural history of the disease progresses from active to inactive fibrotic stage over a period of years. Diagnosis is mainly clinical and almost all patients with ophthalmopathy exhibit some form of thyroid abnormality on further testing. Treatment is based on the clinical severity of the disease. Non-severe cases are managed by supportive measures to reduce the symptomatology and severe cases are treated by either medical or surgical decompression. Rehabilitative surgery is done for quiescent disease to reduce diplopia and improve cosmesis.

Key words: Thyroid eye disease, autoimmunity, smoking, corticosteroids, radiotherapy, surgical decompression, rehabilitative surgery.

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INTRODUCTION

Thyroid associated ophthalmopathy (TAO) is also known as, thyroid eye disease (TED), Graves' ophthalmopathy/orbitopathy (GO), dysthyroid ophthalmopathy, thyrotoxic exophthalmos and other terms. It is an autoimmune process which affects the thyroid gland, orbital and periorbital tissue and uncommonly the pretibial skin or digits (thyroid acropachy). The individual components can occur together or separately. It is the most frequent extrathyroidal manifestation of Graves' disease. Although TAO is often associated with hyperthyroidism, it may occur in primary hypothyroidism, Hashimoto's thyroiditis, and sometimes in euthyroid individuals.¹⁻³ The incidence and prevalence of Graves' disease is 0.1% and 1% respectively. The clinical signs include widening of the palpebral fissure, eye lid retraction, lid lag, conjunctival congestion, chemosis, proptosis, corneal exposure, restrictive myopathy and optic neuropathy. In majority of cases the ocular manifestations are mild, and severe form of the disease affects 3% to 5% of individuals.⁴

METHODOLOGY

All our reference articles were obtained from Pubmed. The key words for search were thyroid ophthalmopathy, thyroid orbitopathy, thyroid associated ophthalmopathy, ocular manifestations of thyroid, ocular features of Graves' disease, thyroid eye disease, and Graves' ophthalmopathy etc. We used the MeSH database and journal database for our search and our search limits were articles in English and age above 1 year.

FREQUENCY

The exact incidence of ophthalmopathy is not clear. The prevalence of TAO (thyroid associated ophthalmopathy) in patients with GD (Graves' disease) in Caucasian population is generally thought to be between 25% and 50%.^{5,6} Bartley⁷ reported, in a population- based setting in USA, an annual incidence rate of 16 cases per 100,000 population per year for women, and 2.9 cases for men. In Malaysia, Lim *et al*⁸