Thyroid-Associated Orbitopathy

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Abstract

Introduction:

Thyroid-associated orbitopathy (TAO) is an autoimmune disorder affecting orbital tissues, presenting with a spectrum of symptoms ranging from eyelid retraction to severe optic neuropathy. The management of TAO has evolved with advancements in immunosuppressive and targeted biologic therapies. However, the optimal treatment approach remains a subject of ongoing research.

Materials and Methods:

This narrative review synthesizes existing literature on the efficacy and safety of various treatment modalities for TAO. A structured search was conducted in databases such as PubMed, ResearchGate, and Google Scholar. Studies assessing corticosteroids, orbital radiation therapy, monoclonal antibodies (e.g., teprotumumab, rituximab), and surgical interventions were reviewed. Comparative efficacy, side effects, and long-term outcomes were analyzed to provide a comprehensive overview of current treatment strategies.

Results:

Intravenous methylprednisolone is now the preferred treatment for the inflammatory phase of TAO due to its superior efficacy and reduced side effects compared to oral prednisone. Orbital radiation therapy remains a debated adjunctive treatment, with potential benefits in reducing inflammation and improving motility and proptosis in early disease stages. The introduction of teprotumumab, a monoclonal antibody targeting the insulin-like growth factor-1 receptor, represents a significant advancement, demonstrating efficacy in reducing proptosis and disease severity. Additionally, rituximab has been explored as a potential therapy; however, its clinical benefits require further validation through larger trials.

Conclusion:

The management of TAO is undergoing a paradigm shift with the advent of targeted biologic therapies. While corticosteroids remain the mainstay of treatment, emerging biologic agents like teprotumumab offer promising alternatives. Further research is necessary to refine treatment guidelines, evaluate long-term safety, and establish the most effective therapeutic strategies.

Keywords: Thyroid-associated orbitopathy, Graves' orbitopathy, immunotherapy, corticosteroids, teprotumumab, rituximab, orbital radiation therapy.