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ARVO Recap: What's New in TED

Announcer:
Welcome to CME on ReachMD. This episode is part of our MinuteCE curriculum.

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Dr. Rajaii:
The annual meeting of the Association for Research in Vision and Ophthalmology, or ARVO, is a great place to catch up on some of the data around new and emerging therapies for thyroid eye disease.

This is CME on ReachMD, and I'm Fatemeh Rajaii.

First, let's talk about teprotumumab, which is the only approved biologic therapy for thyroid eye disease. There were several real-world data reports on the uses of this agent. The largest study by Markle et al. of 441 patients evaluated audiologic side effects associated with teprotumumab. In this retrospective chart review, they identified a risk ratio of 2.85 for developing new audiologic symptoms. Patients with a history of hearing impairment had a lower risk ratio of 1.89.

Hyperglycemia is another concerning side effect of treatment. A study by Lang et al. looked at 211 patients from 2 large academic hospitals and found that baseline diabetes status was significantly related to hyperglycemic events with teprotumumab.

A smaller study of 38 patients with thyroid eye disease treated with teprotumumab by Hashemi et al. also found a trend between diabetes history and risk of hyperglycemia. They found that hearing loss occurred in 29% of patients, and most side effects that were experienced by 50% or more of patients included fatigue, brittle nails, dry eyes, hair loss, muscle spasms, and dry mouth. These symptoms resolved in 74% of patients after stopping treatment; 92% of patients experience improvement in TED symptoms overall, and 82% would recommend treatment to others. So side effects are significant, but overall, patients are satisfied with the results of treatment.

Moving on to some preclinical data now. Work from my lab in a study led by Soohyun Kim examined the effects of linsitinib on cultured orbital fibroblasts induced to undergo adipogenesis. We demonstrated that linsitinib decreased the phosphorylation of the IGF-1 receptor and decreased adipogenesis in a dose-dependent manner. This increases our understanding of how teprotumumab works and also demonstrates that linsitinib could be a potential treatment for thyroid eye disease.

Another molecule, TOUR006, is an anti-IL-6 antibody and blocks IL-6-mediated inflammation. Erickson et al. showed data from healthy volunteers and in patients with autoimmune conditions and used this to predict optimal subcutaneous dosing for an upcoming phase 2b trial. They predict that 20 mg and 50 mg every 8 weeks would provide an anti-inflammatory effect in patients with thyroid eye disease. That will be the longest dosing interval that's available so far, with most other drugs being investigated having a 2- to 4-week interval.

So overall, there was lot of great data that came out of ARVO. The real-world assessments of teprotumumab that show increased post-marketing data regarding risk factors for developing hearing loss and hyperglycemia, as well as demonstrating high patient satisfaction in spite of the side effects. We also saw that decreased phosphorylation of the IGF-1 receptor and decreased adipogenesis is a potential mechanism of teprotumumab and orbital fibroblasts. And TOUR006 is a new anti-IL-6 agent that's entering a phase 2 clinical trial with a

convenient 8-week dosing interval. There's a lot to look forward to in the management of TED.

This has been CME on ReachMD. Thanks for joining me today.

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