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### Advances in Glaucoma Treatment: Novel Topical Therapies

#### Announcer:

Welcome to CME on ReachMD. This episode is part of our MinuteCME curriculum.

Prior to beginning the activity, please be sure to review the faculty and commercial support disclosure statements as well as the learning objectives.

#### Dr. Cui:

This is CME on ReachMD, and I'm Dr. Qi Cui. Let's take a look at some of the novel agents for the treatment of early- to moderate-stage glaucoma and how they fit into clinical practice.

Omidenepag isopropyl ophthalmic solution is approved for use at a concentration of 0.002% to treat glaucoma and ocular hypertension. It is to be administered topically once daily in the evening to the affected eyes. Upon corneal penetration, omidenepag isopropyl is hydrolyzed to its active metabolite which acts as a selective prostaglandin E2 receptor agonist. The prostaglandin E2 receptor is a transmembrane G protein-coupled receptor that increases cyclic AMP levels to facilitate aqueous humor outflow through both the trabecular and the uveoscleral pathways.

An advantage of omidenepag isopropyl over some other glaucoma medications is its longer duration of action, requiring less frequent administration. In clinical trial, omidenepag demonstrated comparable IOP [intraocular pressure]-lowering efficacy to latanoprost 0.005% at 4 weeks and may be efficacious in non or poor responders to latanoprost. Omidenepag may also exhibit fewer long-term prostaglandin-associated periorbitopathy, such as fat atrophy and hyperpigmentation compared to prostaglandin F receptor agonists.

Netarsudil/latanoprost is a fixed-dose combination medication approved for lower intraocular pressure in patients with open-angle glaucoma and ocular hypertension. It is to be administered topically once daily in the evening to the affected eyes. Netarsudil is a rho-kinase inhibitor that is thought to increase aqueous humor outflow through the conventional pathways, while also decreasing episcleral venous pressure and oxidative stress. Its intraocular pressure-lowering effects have been shown to increase with the addition of the selective prostaglandin F receptor agonist latanoprost.

In a pooled efficacy analysis of two phase 3 superiority studies comparing netarsudil/latanoprost to monotherapies of either netarsudil or latanoprost, combination therapy was shown to produce IOP lowering that was statistically in excess of netarsudil and latanoprost monotherapy. As is the case with omidenepag isopropyl, an advantage of netarsudil/latanoprost over other glaucoma medications is its longer duration of action requiring less frequent administration. Conjunctival hyperemia in excess of observed with latanoprost is the most commonly reported adverse effect of netarsudil administration. Other notable side effects include subconjunctival hemorrhage, corneal verticillata, tearing, instillation site pain, erythema, and eyelid erythema.

A good tip to keep in mind might be patients who might benefit from omidenepag would be one who responds to prostaglandin analogs but is experiencing prostaglandin-associated periorbitopathy. Now the patients who might benefit from netarsudil/latanoprost would be someone who is not reaching goal IOP on a single agent but wants to limit their medication administration frequency to once a day.

Brimonidine tartrate ophthalmic suspension, formulated using a proprietary resin microparticle complex drug delivery system is pending a decision by the US FDA for once-daily dosing for the treatment of open-angle glaucoma and ocular hypertension. A phase 3

equivalence trial compared once daily brimonidine tartrate suspension to brimonidine tartrate 0.1%, administered 3 times a day, met its prespecified primary endpoint of noninferiority at 12 weeks.

In summary, all 3 agents benefit from once-daily dosing but function through different mechanisms of action. Thank you for tuning in, but my time is up. This has been CME on ReachMD.

**Announcer:**

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