Examining the long-term efficacy and tolerability of netarsudil as an adjunctive glaucoma medical therapy

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Background and Hypothesis

Glaucoma is a group of progressive optic nerve neuropathies that commonly cause vision loss or blindness. The most prevalent of these neuropathies is known as primary open-angle glaucoma. POAG is caused by increased intraocular pressure (IOP) in the anterior chamber of the eye, due to increased resistance to outflow of aqueous humor. Netarsudil is a recently developed novel medication for lowering intraocular pressure. The aim of this study is to assess the long-term efficacy and tolerability of netarsudil as an adjunctive therapy in patients with POAG.

Methods:

In this study data was collected through a retrospective chart review of patients being treated for POAG. Efficacy was measured by using the difference in intraocular pressure over the course of treatment. Tolerability was assessed using a Kaplan-Meier estimator, measuring the time to failure of treatment. Failure in this case is defined as either a termination in treatment due to adverse effects, or termination in treatment from lack of efficacy in lowering IOP. Data was separated into groups of either 2^{nd}, 3^{rd}, or 4^{th} line treatments. In patients where both eyes were treated, one eye was randomly selected to be followed for measurements.

Results:

Probability of failure curves, based on the tolerability and efficacy of netarsudil treatment, were constructed for each group. IOP reduction (mmHg) was found to be: 3.00 (3.09 95% CI) for 2^{nd} line, 7.05 (4.65 95% CI) for 3^{rd} line, and 5.31 (1.38 95% CI) for 4^{th} line.

Conclusion and Impact:

These results give context to netarsudil as a therapy in terms of its long-term implications. As the drug was only approved for use in late 2018, there is limited data on its long-term efficacy and tolerability, and this information helps to give clinicians a better idea of whether it will be a helpful treatment for patients.