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Ocular hypotensive and neuroprotective treatments for glaucoma

Glaucoma is a blinding disease encompassing a multitude of retinal/optic neuropathies. Primary open angle glaucoma (POAG) is the most prevalent form that afflicts >70 million people world-wide and is projected to increase as better diagnosis is accomplished. Currently, there is no cure for POAG, and only the common symptom of elevated intraocular pressure (IOP) can be treated. However, there are patients whose IOPs are considered normal, whose vision continues to deteriorate, and their glaucoma remains uncontrolled. These patients may need alternative interventions such as neuroprotective agents that can retard their vision loss. While FP-prostaglandin agonists (FPGAs) are first-line therapy for reducing IOP and preventing retinal ganglion cell demise, most FPGAs are losing their patent protection and there are many patients who are refractory to FPGAs-treatment and/or are highly sensitive to the drug or its preservative formulations. Additionally, there is the issue of dosing non-compliance of patients due to infirmity, forgetfulness, and/or simple abstinence of treatment in view of the ocular side-effects like hyperemia, ocular irritation and ocular allergies. Furthermore, many patients with POAG and ocular hypertension (OHT) require more than one type of drug to control their IOPs. Therefore, research and development of new drug candidates and devices to lower and control IOP, including non-peptide bradykinin B2-receptor agonists (e.g. FR-190997), is being pursued world-wide. However, just lowering IOP is insufficient to prevent the visual impairment that ensues due to OHT and glaucoma. Therefore, it is now accepted that direct neuroprotective therapy, in addition to lowering IOP, is necessary to help patients afflicted with glaucomatous optic neuropathies. This presentation will discuss some of the novel IOP-lowering drugs (e.g. Omidenepag Isopropyl [DE-117]; Rhopressa [AR-11324]; Netarsudil]; drug conjugates (Latanoprostene Bunod [Latanoprost-nitric oxide donor), and combination products (e.g. Roclatan [Latanoprost + AR-11324). Furthermore, innovative devices coupled with surgical procedures (e.g. iStent; Innfocus Microshunt) (MIGS) as ocular hypotensives, and potential neuroprotective strategies will be discussed.

Speaker Biography

Naj Sharif completed his graduation from Southampton University, England (UK), where he received his BSc (Joint Honors: Biochemistry and Physiology) and his PhD (Neuroscience). He has been in the pharmaceutical industry for >30-years holding leadership positions spanning discovery research, drug development and regulatory affairs. He has worked at Pfizer, Syntex (Roche), Alcon-Novartis, and is currently at Santen Inc. (Executive Director, R&D). His 23-tenure at Alcon resulted in his contributions to the discovery/development and US FDA approvals of Travatan®, Patanol®, Simbrinza®, and Pazeo® to treat glaucoma/ocular hypertension and ocular allergies. He is a Fellow of ARVO (FARVO), and Fellow of British Pharmacological Society (BPS) (FBPhS). He was honored as the first recipient of the inaugural Dr. Roger Vogel Award for ocular pharmaceutical research (2014), and the "Sir James Black Award" for contributions to drug discovery from BPS (2017). He serves on the editorial boards of numerous scientific journals and is an Adjunct Professor at several universities. He has published 200 scientific articles and edited 2 books, and is the holder of 23 issued US and EU patents.

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