Brimonidine is a highly selective alpha2-adrenoceptor agonist which reduces intraocular pressure (IOP) by reducing aqueous humor production and increasing aqueous humor outflow via the uveoscleral pathway. Brimonidine is indicated for the topical management of open-angle glaucoma or ocular hypertension. The recommended dose of brimonidine 0.2% is one drop in the affected eye two or three times daily, approximately three hours apart. A dose-response effect was observed after single dose administration of brimonidine to patients with glaucoma or ocular hypertension; IOP reductions from baseline of 16.1, 22.4 and 30.1% were achieved after administration of brimonidine 0.08, 0.2 or 0.5%, respectively. The most frequent adverse events associated with brimonidine therapy were oral dryness (30.0%), ocular hyperaemia (26.3%) and ocular burning and/or stinging (24.0%). Brimonidine may have the potential additional benefit of providing neuroprotection for glaucoma patients. Studies have already demonstrated that brimonidine meets 3 of the 4 criterion used in evaluating neuroprotective agents, and clinical trials are in progress to determine whether brimonidine also fulfills the last criterion and is there neuroprotective effect in human eyes.