



## A Narrative Review-Emerging Concepts in Glaucoma and Homoeopathic Management

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### ABSTRACT

Glaucoma is a universal leading cause of irreversible vision loss. Mostly it is asymptomatic until the late stage and diagnosis is also frequently delayed. It is not a single disease process but a group of disorders characterized by a progressive optic neuropathy resulting in a characteristic appearance of the optic disc and a specific pattern of irreversible visual field defects that are associated frequently but not invariably with raised intraocular pressure. Emerging evidence indicates that the pathogenesis of glaucoma depends on several interacting pathogenetic mechanisms, which include mechanical effects by an increased intraocular pressure, decreased neurotrophin-supply, hypoxia, excitotoxicity, oxidative stress, and the involvement of autoimmune processes. Homeopathy is in fact oriented in this direction as far as visual disorders are concerned. The purpose of this article is to review the prior research on homeopathy and glaucoma.

**Keywords:** Glaucoma, Homoeopathy, Visual field and Optic nerve

### INTRODUCTION

Glaucoma is a group of disorders with the common features of progressive degeneration of the optic nerve with thinning in the layer of retinal nerve fibres and increasing excavation of the optic disc. The biological basis of glaucoma is poorly understood and the factors contributing to its progression have not been fully characterized [1]. Glaucoma affects more than 70 million people worldwide with approximately 10% being bilaterally blind, [2] making it the leading cause of irreversible blindness in the world. Glaucoma can remain asymptomatic until it is severe, resulting in a high likelihood that the number of affected individuals is much higher than the number known to have it [3,4]. Glaucoma's can be classified into 2 broad categories: open-angle glaucoma and angle-closure glaucoma. In the United States, more than 80% of cases are open-angle glaucoma; however, angle-closure glaucoma is responsible for a disproportionate number of patients with severe vision loss [5,6]. Both open-angle and angle-



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closure glaucoma can be primary diseases. Secondary glaucoma can result from trauma, certain medications such as corticosteroids, inflammation, tumor, or conditions such as pigment dispersion or pseudo-exfoliation.

The many inherent difficulties always encountered in all the domesticated species in the attempted management of glaucoma to retain useful vision range from difficulty in diagnosis to the prevention of retinal ganglion cell death. Clinical experience alone dictates the expected poor prognosis for sight, but recent awareness of the mechanisms almost certainly involved the ganglionopathy clearly indicates that adequate neuroprotection might never be achieved. Not only are possible therapies still conjecture, but the early occurrence of what is probably a self-propagating process of neurodegeneration renders effective therapy particularly difficult in the species we treat. Currently our existing therapies must fall short of the mark and the practical difficulties associated with the assessment of outflow facility, the accurate monitoring of therapy and the complexity of surgical techniques all combine to confound the prognosis. Whilst it is logical that angle-closure-glaucomas can never be treated effectively by carbonic anhydrase inhibition alone, those glaucomas which do lend themselves to this kind of therapeutic approach are often diagnosed when ganglion cell death is already extensive and the loss of sight inevitable. The overriding factor in all glaucoma is the degeneration of the retinal ganglion cell, thus neuroprotection through effective ocular hypotension is the essential requirement of any therapy we utilise. However we are often too late in instituting that therapy and although we may contain associated pain and discomfort, the process of neuroretinal degeneration currently can neither be reversed nor stopped. The most we can achieve through the adequate reduction of intraocular pressure (IOP) is to slow this process down and retain sight for longer periods of time [7]. A marked partiality toward the field of alternative medicine has been observed within the blind community, on some occasions as a complement to traditional medicine and on others due to their openness to and acceptance of these branches of medicine, of which homeopathy is a clear example, which they consider to be less aggressive. Homeopathic medicine is based on the activation of the organism's healing mechanisms by administering homeopathic dilutions corresponding to specific doses of these medicines.

**Pathophysiology of Glaucoma**

The pathogenesis of glaucoma is not fully understood, the level of intraocular pressure is related to retinal ganglion cell death. The balance between secretion of aqueous humor by the ciliary body and its drainage through 2 independent pathways—the trabecular meshwork and uveoscleral outflow pathway—determines the intra-ocular pressure. In patients with open-angle glaucoma, there is increased resistance to aqueous outflow through the trabecular meshwork. In contrast, the access to the drainage pathways is obstructed typically by their is in patients with angle-closure glaucoma. Intraocular pressure can cause mechanical stress and strain on the posterior structures of the eye, notably the lamina cribrosa and adjacent tissues. The sclera is perforated at the lamina where the optic nerve fibers (retinal ganglion cell axons) exit the eye. The lamina is the weakest point in the wall of the pressurized eye. Intraocular pressure-induced stress and strain may result in compression, deformation, and remodeling of the lamina cribrosa with consequent mechanical axonal damage and disruption of axonal transport that interrupts retrograde delivery of essential trophic factors to retinal ganglion cells from their brainstem target [8,9]. Impaired microcirculation, altered immunity, excitotoxicity, and oxidative stress may also cause glaucoma. Primary neural pathological processes may cause secondary neurodegeneration of other retinal neurons and cells in the central visual pathway by altering their environment and increasing susceptibility to damage [10].

**Management of Glaucoma**

Glaucoma management is aimed at reducing IOP, the only known modifiable risk factor at this time. In some individuals, however, systemic factors such as uncontrolled systemic hypertension, vasospasm, sleep apnea, and arrhythmias may play a minor or major part in the development of glaucoma. The ultimate goal is to slow or stop structural and functional progression while maintaining or enhancing overall quality of life. Some recent evidence also suggests that visual field improvement may be achieved with IOP lowering [11]. The treating ophthalmologists should strive to maintain the IOP in a stable range to prevent further damage of the optic nerve [12]. The prostaglandin analogs are the preferred first agents for glaucoma therapy for a variety of reasons. These agents lower





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IOP extremely well when dosed once a day and this effect has been shown to be long lasting without significant tachyphylaxis [13]. Achievement of targeted IOP might require aggressive treatment and frequent change of therapy; however, the target IOP range is a dynamic concept and it should be individualized and constantly re-evaluated, taking into consideration stage of disease, patient risk factors, life expectancy, and social circumstances. Furthermore, the means by which IOP targets are achieved can also be customized, and consideration of medications, laser, and surgical options may be required based on the patient's individual characteristics and circumstances.

#### Glaucoma and Homoeopathy

Homoeopathy a traditional system of medicine has many therapeutic methods for treatment of visual defects. Requirements for treatment was based on the following general concepts, patient's characteristics and constitutional data and his or her symptoms, and adapted for visual defect, Storage of complete pharmacopoeias on each medicine, Assignment of scaled dilutions of the remedies in the final treatment may be low (4 CH), intermediate (7 CH), and high (15 CH) dilutions. Assignment of the smallest possible number of necessary medicines. Few choices of remedies used in treatment of glaucoma.

**Belladonna:** Throbbing deep in eyes on lying down. Pupils dilated. Eyes feel swollen and protruding, staring, brilliant; conjunctiva red; dry, burn; photophobia; shooting in eyes. Exophthalmos. Ocular illusions; fiery appearance. Diplopia, squinting, spasms of lids. Sensation as if eyes were half closed. Eyelids swollen. Fundus congested.

**Cedron:** Shooting over left eye. Severe pain in eyeball, with radiating pains around eye, shooting into nose. Scalding lachrymation. Supra-orbital neuralgia periodic. Iritis, choroiditis.

**Comocladia Dentata:** Glaucoma, sense of fullness; eyeball feels too large. Motion of eyes aggravates. Ciliary neuralgia with eyes feeling large and protruded, especially right. Worse near warm stove; feels as if pressed outward. Sees only glimmer of light with left eye [14].

**Phosphorus:** Glaucoma. Thrombosis of retinal vessels and degenerative changes in retinal cells. Degenerative changes where soreness and curved lines are seen in old people. Retinal trouble with lights and hallucination of vision. Black points seem to float before the eyes. Patient sees better by shading eyes with hand. Fatigue of eyes and head even without much use of eyes.

**Physostigma:** Vision dim; from blur or film; objects mixed. Pain after using eyes; floating black spots, flashes of light, twitching of lids and muscles of eyes Nystagmus [15].

**Osmium:** Glaucoma; with iridescent vision. Violent supra and infra-orbital neuralgia; violent pains and lachrymation. Green colors surround candlelight. Conjunctivitis. Increase in intra-ocular tension, dim sight, photophobia.

**Spigelia Anthelmia:** Feel too large; pressive pain on turning them. Pupils dilated; photophobia; rheumatic ophthalmia. Severe pain in and around eyes, extending deep into socket. Ciliary neuralgia, a true neuritis.

#### CONCLUSION

There are several factors that predict glaucoma outcomes including stage of disease at the time of diagnosis as well as rate of progression. Homeopathy has several remedies which can symptomatically treat glaucoma.

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