

ABSTRACT

Investigation of the Effect of the Fluid from the Bud of the *Spathodea campanulata* Plant on Intraocular Pressure

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Glaucoma is one of the leading causes of blindness worldwide and an elevation in intraocular pressure is one of the major risk factors associated with the irreversible progression of this disease. Other risk factors include a family history of the disease, genetic mutations and the presence of chronic life-style diseases such as hypertension and diabetes mellitus. It is assumed that there is a high prevalence of glaucoma in Jamaica and a cross-sectional descriptive study was conducted at the FISH Eye Clinic to review this perception. Glaucoma was the second most commonly reported disease.

Reduction in intraocular pressure is the only approved means of delaying the progression of glaucoma. A Jamaican folklore remedy suggests that the fluid from the bud of the *Spathodea campanulata* plant is useful in the management of this condition. Investigations using a freeze-dried preparation of the plant sample (2 mg/ml) caused a 32% reduction in the intraocular pressure of dogs. *In vivo and in vitro* investigations were conducted to determine a possible mechanism of action. Results showed that the plant sample interacts with muscarinic receptors along the iris-ciliary body. This suggests that the fluid from the bud of the *Spathodea campanulata* plant reduced intraocular pressure by increasing aqueous humour outflow through the trabecular meshwork.

The Draize Test was used using albino rabbits to determine the localized effect of ocular administration of the plant sample. Results showed that the plant sample produced minimal irritation of the conjunctiva.

Keywords: Channtal Golding; *Spathodea campanulata*; intraocular pressure; glaucoma, FISH Clinic.