BAICALEIN LOWERS INTRAOCULAR PRESSURE IN GERBILS

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**Purpose:** Currently, no clinical treatments are available to prevent the glaucomatous optic neuropathy except for lowering intraocular pressure. Baicalein is a common traditional Chinese medicine that has no reported toxicity. We have previously demonstrated that baicalein inhibits chloride secretion and net fluid transport across the excised ciliary epithelium, potentially reducing aqueous humor formation and intraocular pressure. The aim of this study is to determine the changes in intraocular pressure by baicalein in living animals.

**Methods:** Gerbils (sand rats) were used in the experiments. Baicalein was administered intraperitoneally to the animals in the treatment group once every two days for two weeks, while saline solution was used in the control animals. Measurements of the intraocular pressure were conducted under anesthesia with a rebound tonometer (TonoLab) prior to drug administration.

**Results:** Intra-peritoneal injection of baicalein (100mg/kg) significantly lowered IOP in gerbils. The maximum hypotensive effect was achieved two days after the first injection and then maintained at almost the same level throughout the experimental period. After two weeks, baicalein-treated animals had a lower intraocular pressure of \(-3.92 \pm 0.89\) mmHg (N = 4, p < 0.05) as compared to the saline-treated controls, accounting for a 23-26% reduction of intraocular pressure from the baseline measurements. At a lower concentration of baicalein (4mg/kg), a hypotensive effect of 15% was also observed (N = 5).

**Conclusions:** Baicalein appears to function as an ocular hypotensive agent. Its site and mode of action remain to be determined.

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