Title: Paediatric cataracts and secondary glaucoma: Life-long risk and the effect of glucocorticoids
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Purpose: We investigated the impact of glucocorticoid dosage on glaucoma and the long-term risk of glaucoma following paediatric cataract surgery.

Methods: The first cohort study included children who underwent cataract surgery <10 years of age, receiving low-dose or high-dose postoperative glucocorticoid treatment. Data were collected retrospectively from January 1, 2010, to December 31, 2016, and prospectively until December 31, 2021. High-dose treatment involved 0.5–1.0mg subconjunctival depot dexamethasone, followed by 6–8 drops of dexamethasone for one week, tapered by one drop weekly. Low-dose treatment included 6 drops for 3 days, followed by 3 drops for 18 days. The second study included patients from a hereditary cataract family who had surgery <18 years of age. Ophthalmologic examinations and retrospective chart review determined the presence of glaucoma or ocular hypertension (OHT), with survival analysis and Cox proportional hazards regression model assessing risk factors.

Results: In the first study, 95 children (133 eyes) had received high-dose treatment while 173 children (255 eyes) had received low-dose treatment. Low-dose treatment showed a lower risk of glaucoma in eyes with axial lengths ≥18mm. The second study included 68 patients (133 eyes) with a median age of 7 years at surgery (IQR:5-10) and a median follow-up of 35 years (IQR:15-48). The long-term risk of glaucoma/OHT was 47.7% (CI:21.8-70.9) at age 70.

Conclusion: Low-dose glucocorticoid treatment post-cataract surgery was associated with a lower risk of glaucoma in eyes with axial lengths ≥18mm. Long-term follow-up is essential as childhood cataract surgery carries a high risk of late-onset glaucoma.