Introduction: Childhood glaucoma is an uncommon but potentially devastating condition that can lead to life-long visual impairment. There is scarce evidence in literature about intraocular pressure (IOP)-lowering prescribing patterns in children. We aimed to describe and discuss the nationwide prescription of these drugs in this particular age group.

Methods: Cross-sectional study. Subjects: All patients younger than 18 years-old who were prescribed at least one IOP-lowering medication in 2015 in Portugal. A query through the common, nationwide electronic drug prescription system was performed for pediatric ocular hypotensive drug prescriptions. Demographic data, medications prescribed (number and formulation) and healthcare related costs were provided in an encrypted and anonymous form. Statistical analyses were performed using STATA v13.1. Main outcome measures: i) number and demographic data of patients; ii) quantity and type of prescribed IOP-lowering drug and iii) healthcare-related direct costs.

Results: A total of 1352 subjects (52% female), 0.07% of the Portuguese pediatric population, were prescribed IOP-lowering medications in 2015. Mean age was 9.6 ± 5.6 years. The most prescribed drugs in pediatric population were timolol (29.0%), latanoprost (15.3%), timolol+dorzolamide (15.0%) and acetazolamide (9.5%). Of all patients, 1073 (79.4%) were on monotherapy, 179 (13.2%) were under two drug classes and 94 (7.0%) were prescribed three different IOP-lowering pharmacological classes.

Older age was associated with an increasing likelihood of being prescribed more than one drug class (Odds ratio (OR) 1.05, 95% Confidence Interval (CI) 1.04-1.07, p < 0.001), a fixed combination (OR 1.08, 95% CI 1.07-1.10, p < 0.001) and oral acetazolamide (OR 1.06, 95% CI 1.04-1.08, p < 0.001). Of note, 10 children under 2 years-old were prescribed an α-2 agonist. Antiglaucomatous therapy among children accounted for a total of ~81.000€ in costs, 10% of which were out-of-pocket expenses.

Conclusion: This nationwide study disclosed ocular hypotensive prescriptions' patterns among children. Although surgery is the mainstay of treatment for childhood glaucoma, medical therapy plays an important role in preoperative, postoperative and long-term management.

Since ocular hypertension is uncommon in children, this nationwide study may also be the first one to reliably estimate the Portuguese prevalence of childhood glaucoma.