

17th GLOBAL OPHTHALMOLOGY, GLAUCOMA AND OPTOMETRY CONFERENCE

November 02-04, 2017 Bangkok, Thailand

Inhaled corticosteroids and intraocular pressure: Is it more than what meets the eye?

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Introduction & Aim: Glaucoma is the leading cause of irreversible blindness worldwide. Extensive studies have proved that systemic and topical steroids play an important role in the pathogenesis of glaucoma. However, little is known about the effect of inhalational route. Our study was aimed to detect if there truly is an association between inhalational steroids and intraocular pressure (IOP).

Design: Cross-sectional case control study of 200 patients visiting the pulmonologist and 200 controls among the general population.

Methods: Patients on inhaled corticosteroids 800mcg equivalent of Budesonide or more for a period >6 months with no usage of oral or topical steroids within the last 3 months were included as cases. Controls were recruited from the general ophthalmological department with no previous steroid usage. IOP and central corneal thickness (CCT) was analyzed. Cases were divided into two groups. Group-1: IOP <21 mm of Hg and Cup disc ratio (CDR) <0.4. Group-2: IOP >21 mm of Hg or with CDR >0.5. Analysis was done within these two groups to find if there was an increased risk of developing ocular hypertension/glaucoma with duration of inhaled steroids.

Results: Statistically significant difference ($p < 0.001$) was found between adjusted IOP of the controls (14.47 mm of Hg (± 2.17)) and cases (16.78 mm of Hg (± 3.42)). CCT among the cases was 522.02 microns (± 30.47) which was lower compared to the controls with 528.73 microns (± 29.09). Our study found 11 patients with ocular hypertension and 2 patients with primary open angle glaucoma. However, it showed no statistically significant correlation between duration of inhaled steroids usage and increased risk for ocular hypertension/glaucoma.

Conclusion: These findings suggests a probable association between inhalational steroids and intraocular pressure Therefore it is advisable to measure baseline IOPs and CCT of all patients on inhaled corticosteroids and review them at regular intervals.

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