

Effects of Smoking on Intra Ocular Pressure (Review Article)

By Salim Haque Molla & Riya Mondal

2nd year, B.OPTM, George College of Management and Science

ABSTRACT

Introduction

Elevated intraocular pressure (IOP) is a major risk factor for glaucoma, a leading cause of irreversible blindness worldwide. Various physiological and environmental factors influence IOP, including biomechanical properties of the cornea and vascular regulation. Recent research has investigated the potential effects of smoking on IOP, with conflicting epidemiological findings. While some studies report an association between smoking and increased IOP, others remain inconclusive due to variations in study design and subject categorization. Understanding the influence of these lifestyle factors on IOP is crucial for assessing their role in the pathogenesis of ocular hypertension and glaucoma.

Methods

As per our study, we have searched and analysed 3 research paper related to this topic from google scholar and Pubmed from 2000 to 2015. A cross-sectional study design was employed, recruiting 60 male participants based on predefined inclusion and exclusion criteria. Simple random sampling selected 31 individuals with elevated intraocular pressure (IOP), among whom 17 were smokers. A control group of 29 age-matched participants with normal IOP included 11 smokers. Smoking exposure was assessed using the Smoking Index and pack-years metric. The correlation between smoking parameters and IOP was analyzed statistically.

Result

The study found a significant positive association between intraocular pressure (IOP) and smoking, with a P-value of 0.021. A significant correlation was also observed between IOP and pack-years ($P = 0.036$), as well as the duration of smoking ($P = 0.044$). However, the number of cigarettes smoked per day and the classification of smokers into mild, moderate, and heavy categories did not show a significant association with IOP.

Conclusion

Smoking is identified as a significant risk factor in the development of ocular hypertension and glaucoma. The study highlights a positive correlation between

intraocular pressure (IOP) and smoking history, particularly in terms of pack-years and smoking duration. However, the daily number of cigarettes smoked did not show a significant association with IOP. Given the role of smoking in increasing IOP, lifestyle modifications, particularly smoking cessation, could be beneficial in reducing the incidence and progression of glaucoma globally.