

00573 IOP Fluctuation and Prophylactic Laser Peripheral Iridotomy in Primary Angle Closure Suspect Eyes

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Aims: Intraocular pressure (IOP) is the only treatable risk factor in prevention of progressive visual field defects in glaucoma. IOP fluctuation over time has also been postulated to be a potential risk factor for progression. The aim of this study was to assess the IOP fluctuation over time and its association to Laser Peripheral Iridotomy (LPI), in Asian subjects with Primary angle closure suspect (PACS) eyes, the earliest stage in the glaucomatous disease process.

Methodology: This was a prospective sub-analysis of randomized controlled trial in which subjects diagnosed as bilateral, asymptomatic primary angle closure suspects (PACS), were randomized at a 1:1 ratio to have either their left or right eye treated with LPI, and have the untreated eye serve as the control arm. After LPI, subjects were followed-up for 5 years, or until the progression to PAC or PACG.

Result: IOP fluctuation was higher at 2.3 (+/- 1.5) mmHg in eyes that progressed compared to 1.7 (+/- 0.8) mmHg in eyes that did not ($p < 0.01$). We also found a higher minimum, maximum and mean IOP in eyes that progressed vs those that did not. ($p < 0.01$). IOP fluctuation in eyes that underwent LPI was 1.8 (1.0) mmHg, compared to 1.7 (0.8) mmHg in eyes that did not, but this was not statistically significant ($p = 0.11$)

Multivariate analysis showed that IOP fluctuation was associated with gender (women $B = -0.20$, $p = 0.02$), cup-disc ratio ($B = -0.58$, $p = 0.01$), baseline IOP ($B = 0.06$, $p < 0.01$) and central corneal thickness ($B = 0.003$, $p < 0.01$).

Conclusion: PACS is the earliest stage of the disease and presents an opportunity to address risk factors. Our study showed that IOP fluctuation is associated with an increased rate of progression in PACS eyes and described factors that are associated with IOP fluctuation, perhaps providing room for interventions to reduce IOP fluctuation and ultimately, glaucoma progression.