

Anatomical Changes and Predictors of Angle Widening After Laser Peripheral Iridotomy: The Zhongshan Angle Closure Prevention Trial

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PURPOSE: To assess anatomical changes after laser peripheral iridotomy (LPI) and predictors of angle widening based on anterior segment OCT (AS-OCT) and angle opening based on gonioscopy in mainland Chinese primary angle closure suspects (PACS).

DESIGN: Prospective observational study.

PARTICIPANTS: 454 subjects aged 50 to 70 years with PACS.

METHODS: Subjects received clinical examinations including gonioscopy and AS-OCT imaging at baseline and 2 weeks after LPI as part of the Zhongshan Angle Closure Prevention (ZAP) Trial. PACS was defined as inability to visualize pigmented trabecular meshwork in two or more quadrants on static gonioscopy. LPI was performed on one eye per subject in a superior (between 11 to 1 o'clock) or temporal or nasal (at or below 10:30 or 1:30 o'clock) location. Biometric parameters in horizontal and vertical AS-OCT scans were measured and averaged. Multivariable linear and logistic regression modeling were performed to determine predictors of angle widening, defined as change in continuous measurements of mean angle opening distance (AOD750), poor angle widening, defined as the lowest quintile of change in mean AOD750, and poor angle opening, defined as residual PACS after LPI based on gonioscopy.

MAIN OUTCOME MEASURES: Anatomical changes and predictors of angle widening and opening after LPI.

RESULTS: 454 subjects were included in the analysis. 219 received superior LPIs and 235 received temporal or nasal LPIs. There were significant changes among most biometric parameters (p<0.05). **CONCLUSIONS:** Superior LPI location results in significantly greater angle widening based on AS-OCT compared to temporal or nasal locations in a Chinese population with PACS. This supports consideration of superior LPI locations to optimize anatomical changes after LPI.

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