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Biometry investigation of the ocular anterior segment in type 2 diabetes

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Objective: To analyze the biometry parameters of the ocular anterior segment in type 2 diabetic mellitus (DM).

Methods: This is an observational cross-sectional study. 144 cases 285 eyes of DM patients' group age from 40 to 80 were collected during Mar. to Nov. 2015 and non-contact optical biometry measurement (Lenstar LS900) was conducted with central corneal thickness (CCT), white to white (WTW), anterior chamber depth (ACD), lens thickness (LT) and axial length (AL), and lens position (LP), as well as chamber crowd ratio (CCR) were calculated. Data were compared with the counterpart of non-DM cataract patients group and Wilcoxon Rank Sun Tests were employed to analyze the biometric differences between the 2 groups.

Results: Compared with the Non-DM cataract group, the average CCT of DM group was 533.64 ± 33.29 nm vs. 527.08 ± 31.61 nm ($\chi^2=6.4864$, $P=0.0109$). WTW 11.54 ± 0.51 mm vs. 11.42 ± 0.63 mm ($\chi^2=5.7074$, $P=0.0169$). ACD 2.50 ± 0.32 mm vs. 2.61 ± 0.43 mm ($\chi^2=12.7723$, $P=0.0004$). LT was 4.52 ± 0.32 mm vs. 4.31 ± 0.45 mm ($\chi^2=44.8900$, $P<0.0001$). LP was 4.77 ± 0.25 mm vs. 4.77 ± 0.33 mm ($\chi^2=0.0731$, $P=0.7869$). CCR1 was 84 ± 0.35 vs. 1.72 ± 0.47 ($\chi^2=29.6598$, $P<0.0001$). ACD+LT was 7.02 ± 0.28 nm vs. 6.92 ± 0.37 nm ($\chi^2=21.6796$, $P<0.0001$). LT/AL was 0.30 ± 0.01 vs. 0.28 ± 0.02 ($\chi^2=60.5197$, $P<0.0001$). (ACD+LT)/AL 0.30 ± 0.01 vs. 0.28 ± 0.02 ($\chi^2=68.3243$, $P<0.0001$).

Conclusions: Hyperglycemia may lead to the corneal stromal and sub-basal neuropathy in type 2 DM patients. Alterations of the ocular biometry parameters in such group may also lead to be more "crowded" of their anterior segments which herald that they may be more susceptible to angle-closing.

Biography

Yan Liang obtained Doctor of Medicine (MD) degree from Johannes-Gutenberg University Mainz, Germany and is currently the Director of the Department of Ophthalmology, Shanghai Jiao Tong University, Sixth People's Hospital, East campus, Shanghai, China.

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