

Anterior Segment Optical Coherence Tomography Study of Cornea and Tear Film Parameters in Juvenile Systemic Lupus Erythematosus Patients

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Abstract : Purpose: To study the tear film parameters, total corneal thickness (CT), corneal epithelial thickness and, corneal power in Juvenile systemic lupus erythematosus (JSLE) patients compared to age-matched controls using anterior segment optical coherence tomography (AS-OCT). Methods: This was a cross-sectional study. Study participants were divided into 2 groups: Group A: 75 eyes of JSLE patients, Group B: 75 eyes of healthy controls. Tear meniscus height (TMH), tear meniscus depth (TMD), and tear meniscus area (TMA) were the lower tear meniscus parameters that were measured. The corneal power, CT, and epithelial thickness were all determined automatically. Results: In the JSLE group, the range of age was 10 to 15 years while the control group was 11 to 16 years. TMH, TMA, and TMD were 527.7 ± 46.8 , 0.059 ± 0.015 and 343.3 ± 59.9 respectively in JSLE group while 525.4 ± 44.6 , 0.058 ± 0.011 and 340.6 ± 58.0 respectively in control group without significant difference (p-value < 0.001). The corneal power was 43.3 ± 0.55 in the JSLE while 43.2 ± 0.54 in the control group without significant difference (p-value = 0.407). CT was 551.1 ± 13.5 in JSLE group while 551.2 ± 15.3 in control group without significant difference (p-value = 0.982). Epithelial thickness was 52.66 ± 1.35 in the JSLE group while 52.60 ± 1.36 in the control group without significant difference (p-value = 0.765). Conclusion: We demonstrated no significant difference in tear meniscus dimensions, CT, epithelial thickness, and corneal power in the JSLE patients compared to age-matched controls using AS-OCT.

Keywords : tear film, ASOCT, JSLE, pachymetry, corneal thickness

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