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Study of halo size and contrast sensitivity of myopia by vision monitor

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Abstract: AIM: To assess the halo size and contrast sensitivity on different levels of myopia and to analyze their correlation. METHODS: Screening total 156 myopic patients aged 18 to 39 years old included in our hospital from March 2018 to March 2019. There were 49 subjects in high myopia group (SER > -6.00 D), 54 in medium myopia group (-3.00 D < SER ≤ -6.00 D) and 53 in low myopia group (SER ≤ -3.00 D). Size of halo disk, and contrast sensitivity of 0.6, 1.1, 2.2, 3.4, 7.1, 14.2 c/d were measured by vision monitor of MetroVision Monpack One. RESULTS: The size of glare halo in high myopia group was 106.27 ± 25.89 arc min, and 103.81 ± 31.41 arc min in medium myopia group, 102.87 ± 32.24 arc min in low myopia group, and there was no significant difference among three groups (F = 0.297, P = 0.825). There was no significant difference among three groups on contrast sensitivity under any different spatial frequencies (P > 0.05). Correlation analysis showed a significant negative relationship between glare halo radius and contrast sensitivity at the c/d of 1.1, 2.2, 3.4, 7.1 (r_s = -0.302, r_s = -0.308, r_s = -0.383, r_s = -0.257, all P < 0.01), and no significant correlation was detected between halo radius and SER (P > 0.05). CONCLUSION: Glare halo size had no relationship with SE but mid-frequency contrast sensitivity.