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OCT-based automated vitreous inflammation score: a promising biomarker in dexamethasone implant treated uveitis patients | IOVS

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ARVO Annual Meeting Abstract | June 2020

OCT-based automated vitreous inflammation score: a promising biomarker in dexamethasone implant treated uveitis patients

Investigative Ophthalmology & Visual Science June 2020, Vol.61, 3245. doi:

Abstract

Purpose : To objectively detect and evaluate vitreous inflammation before and after dexamethasone implant in patients with uveitis by using a recently developed optical coherence tomography (OCT)-based algorithm.

Methods :

In this multicenter, retrospective, cross-sectional study, 302 eyes of 223 uveitis patients were included. Clinical and OCT data (Spectralis; Heidelberg Engineering Inc) of all patients were collected. The inflammation score was obtained using an available automated OCT-based algorithm.¹ Data of pre and post dexamethasone implantation were compared using a random effects model.

¹Montesano, G., Way, C. M., Ometto, G., Ibrahim, H., Jones, P. R., Carmichael, R., Liu, X., Aslam, T., Keane, P. A., Crabb, D. P. & Denniston, A. K. (2018). Optimizing OCT acquisition parameters for assessments of vitreous haze for application in uveitis. *Scientific Reports*, 8, 1648. doi: 10.1038/s41598-018-20092-y

Results : Patients with cystoid macular edema in uveitis anterior (n=18 eyes), intermediate (n=106 eyes), posterior (n=153 eyes), and panuveitis (n=25 eyes) were treated with a dexamethasone implant. The mean of age was 61 years +/- 15 years and a range of 22 to 88 years. We registered 277 follow-up visits at 1 month (up to 2 months after injection) and 265 follow-up visits at 3 months (>2 months to 4 months). The mean inflammation score at baseline was 0.135, and changed significantly to 0.077 (p<0.0001) 1-2 months and to 0.079 (p<0.0001) 3 months after dexamethasone injection. Correlations with clinical ratings of intraocular inflammation are currently evaluated.

Conclusions : Automated OCT-based objective quantification of vitreous inflammation captures the expected decrease in vitreous inflammation following intravitreal dexamethasone implant. Thus, the automated OCT-based quantification of vitreous inflammation may be a promising alternative and a potentially relevant biomarker compared to current subjective clinical estimates of vitreous inflammation in uveitis.

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