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Optic Atrophy after Anti-vascular Endothelial Growth Factor Injection in Diabetic Patients with Proliferative Diabetic Retinopathy

Apichart Singalavanija, Kornwipa Hemarat, Napang Kedkovid, Jutalai Tanterdtham, Chakrapong Namatra, Adisak Trinavarat, Nattawut Rodanant, Somanus Thoongsuwan

Abstract

Objective: To study the prevalence of optic atrophy in patients with proliferative diabetic retinopathy (PDR) who underwent intravitreal bevacizumab injection and risk factors associated with optic atrophy.

Material and Method: A retrospective case control study enrolled 269 cases (394 eyes) of patients with PDR, in which 166 cases (219 eyes) received intravitreal bevacizumab injection. Associated factors such as type of DM, hemoglobin A1c level, hypertension, hypercholesterolemia, chronic kidney disease, previous intravitreal surgery, retinal detachment, and vitreous hemorrhage were recorded. Criteria for diagnosis of optic atrophy were decreased visual acuity, pale optic disc and decreased nerve fiber layer thickness, which was measured by Stratus optical coherence tomography (OCT). The association between intravitreal bevacizumab injection and optic atrophy was analyzed by multiple logistic regression.

Results: Two hundred sixty nine patients with PDR, consisting of 166 patients with intravitreal bevacizumab injection and 103 cases without bevacizumab injection. Optic atrophy was found in 11.4% (25/219 eyes) and 8% (14/175 eyes) respectively. There was no evidence that intravitreal bevacizumab injection and associated systemic diseases were related to optic atrophy. The risk factor that was related to optic atrophy was previous intravitreal surgery (adjusted odds ratio (OR), 2.57 [95% CI, 1.13, 5.84], p = 0.024).

Conclusion: Anti-VEGF (bevacizumab) does not increase the risk of optic atrophy. The ophthalmologists should be aware of subsequent optic atrophy development in patients with PDR who undergo surgical intervention.

Keywords: Optic atrophy, Anti-vascular endothelial growth factor, Proliferative diabetic retinopathy

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The Medical Association of Thailand
Address: 4th Floor, Royal Golden Jubilee Building, 2 Soi Soonvijai, New Petchburi Road, Bangkok 10310, Thailand
Telephone: 0-2716-6102, 0-2716-6962 press 0 Fax: 0-2314-6305
E-mail: jmedassocthai@yahoo.com, math@loxinfo.co.th