Saudi Journal of Ophthalmology (2016) 30, 14–19

Original Article

Systemic steroids as an aid to the management of Idiopathic Polypoidal Choroidal Vasculopathy (IPCV): A descriptive analysis

Aditya Sudhalkar; Divya Balakrishnan *; Subhadra Jalali; Raja Narayanan

Abstract

Purpose: To determine the role of systemic steroids in improving visual acuity, preventing recurrence and hastening pigment epithelial detachment resolution in IPCV patients.
Methods: Retrospective computer assisted comparative case series of consecutive patients with documented IPCV who did and did not receive systemic steroids as part of their treatment regimen between 2007 and 2012. Patients who had systemic contraindication to steroid therapy were excluded from the steroid arm. Data collected included demographics, the best corrected visual acuity, details of the ocular and systemic exam, the treatment offered, the follow-up period and the final visual and anatomic outcomes. Outcome measures included the final BCVA, the time to resolution of the associated pigment epithelial detachment (PED, if present), the recurrence rate and the associated side effects, if any. Appropriate statistical analysis was done. Statistical significance: $p < 0.05$.
Results: 14 patients (14 eyes) had received systemic steroids in the stated period; these were compared with 26 consecutive patients (26 eyes) who did not. Mean age: 59.24 vs 62.38 years (A vs B). Mean baseline BCVA: 1.86 ± 1.24 logMAR vs 2.12 ± 1.48 logMAR (A vs B). 8 females in Group A and 14 in Group B. 11 patients in group A and 19 in group B had associated systemic hypertension. Therapy consisted of laser photocoagulation, anti-vascular endothelial growth factor therapy, photodynamic therapy or a combination of these. Mean follow-up: 43.21 ± 11.32 months (Group A) vs 48.24 ± 9.75 months (Group B). BCVA at three months was significantly better (0.84 ± 0.74 logMAR vs 1.16 ± 0.89 ($p = 0.039$). Final BCVA: 0.86 ± 0.78 logMAR (Group A) vs 1.29 ± 0.92 (Group B, $p = 0.042$). 7 patients in group A and 12 in Group B had a recurrence (insignificant difference). 1 patient in Group A and 7 in Group B had unresolved disease (persistent PED) at the end of follow-up (OR: 4.60; 95% CI 1.7–11.10).
Conclusion: Steroids appear to improve visual acuity and accelerate the resolution of the PEDs in patients with IPCV and large PEDs, but do not seem to influence recurrence.

Keywords: Polypoidal choroidal vasculopathy, Steroids, Systemic, Recurrence, Pigment epithelial detachment

http://dx.doi.org/10.1016/j.sjopt.2015.08.001

Introduction

Idiopathic Polypoidal Choroidal Vasculopathy (IPCV) is considered to be a variant of neo-vascular Age Related Macular Degeneration (AMD).[1–4] The disease is characterized by polypoidal dilatations of the choroidal vasculature in the foveal or extrafoveal region, which results in hemorrhagic or exudative pigment epithelial detachments. In the natural history of PCV, half of the patients had persistent leakage or repeated bleeding and a poor visual outcome.[4] Sho et al. also reported severe visual loss in 35% of eyes[5] with IPCV.

There is a lack of evidence regarding the most appropriate therapy or a combination thereof for treatment of polyps.[6–11] The role of anti-VEGF monotherapy in IPCV is unclear, and

Received 2 June 2014; received in revised form 13 February 2015; accepted 4 August 2015; available online 8 August 2015.

Smt. Kanuri Santhamma Centre For Vitreoretinal Diseases, LV Prasad Eye Institute, Hyderabad, India
Meeting Presentation: VRSI 2013, Lavasa, Pune.

* Corresponding author at: LV Prasad Eye Institute, Hyderabad 500034, Andhra Pradesh, India. Tel.: +91 4030612345.
e-mail address: drdivyabalu@gmail.com (D. Balakrishnan).

Peer review under responsibility of Saudi Ophthalmological Society, King Saud University

Production and hosting by Elsevier

Access this article online:
www.saudiophthaljournal.com
www.sciencedirect.com

studies show that photodynamic therapy is more effective in terms of aiding IPCV closure,[6,10,11] whereas anti-VEGF therapy acts mainly to reduce macular edema and improve vision. The EVEREST trial showed that photodynamic therapy, alone or combined with anti-VEGF therapy was better than anti-VEGF monotherapy alone.[6] Argon laser photocoagulation has also been attempted successfully in effecting the closure of polyps.[7] Combination therapy often yields favorable results.

Thus, while treatment of these lesions is desirable, there is no clear consensus regarding the optimal management strategy. Also, patients with IPCV tend to have large serous or hemorrhagic pigment epithelial detachments (PEDs) which may rupture leading to break through vitreous hemorrhage and RPE rips and can severely affect vision.[1–4,12]

Inflammation is said to play a role in the pathogenesis of wet AMD (although it is still considered inconclusive).[13–16] There is a report of the use of local steroids as an adjunct to treatment for IPCV.[17,18] The role of oral steroids in IPCV, however, is unclear and, to an extent controversial, mentioned in an earlier publication from our institute,[12] wherein a patient with a large, tense pigment epithelial detachment was treated with steroids prior to further treatment. The underlying basis is of course that IPCV is possibly an inflammatory process and may respond to steroids.

This study was undertaken with the aim of determining the role of oral steroids in IPCV, specifically whether it alters visual recovery, IPCV recurrence and PED resolution. Complications, if any, were to be noted as well.

Methods

A retrospective data search was made for all patients diagnosed to have IPCV between January 2007 and 2012. The data collected included demographics, details of the ocular exam, the special investigations performed (such as fluorescein and indocyanine green angiography, and ocular coherence tomography scans), the treatment given and whether steroids were used. The baseline and final corrected distance visual acuity were measured using a logMAR chart and noted. Patients of IPCV who presented with breakthrough hemorrhage were excluded from the analysis. The review adhered to previously set guidelines for retrospective reviews.[19] The institutional review board for LV Prasad Eye Institute, Hyderabad, approved the study. The study adhered to the tenets of Helsinki. Patient consent for possible academic use of data had been obtained at the time of the first visit.

All patients received one or a combination of the following treatment modalities: anti-VEGF injections, frequency doubled Nd:Yag laser photocoagulation to polyps that were extrafoveal and photodynamic therapy to polyps that were <200 μm away from the foveal center. Photodynamic therapy was also offered to patients who did not respond to the aforementioned modalities.

Patients with large, tense hemorrhagic or serous pigment epithelial detachments near the polyp (as identified on indocyanine green angiography) at risk for a retinal pigment epithelium rip (RPE rip) were given oral steroids (after a physician consult) for a fortnight at 0.5 mg/kg body weight followed by a weekly taper of 10 mg prior to any ocular intervention (such as laser photocoagulation or intravitreal injections). Administration of oral steroids was with informed consent from the patient. If the lesion identified on angiography was away from the fovea and the pigment epithelial detachment, laser photocoagulation was performed first, followed a week later by intravitreal ranibizumab. If the lesion showed no signs of reduction on serial ocular coherence tomography (i.e. less than 10 μm reduction in size of PED observed on serial OCT scans for two consecutive months), the patient was either started on oral steroids (0.5 mg/kg body weight) or observed (investigator discretion; subsequently described as Group A and Group B). If the polyp was identified to be less than 200 μm from the foveal center, photodynamic therapy was offered, with or without anti-VEGF agents (as decided by the treating physician). Care was taken to include the fine vascular network in the treatment diameter during photodynamic therapy.

Patients were followed up monthly for 6 months after treatment, and then 3 monthly thereafter. Indocyanine angiography was repeated at months 3, 6, 9 and 12 after completion of therapy and then as needed. OCT raster and macular cube scans were repeated at each follow-up. The change in PED dimensions, the subretinal fluid and retinal thickening was monitored on serial OCT scans.

The patients were divided into two groups: Those that received oral steroids as an adjunct to oral therapy (Group A) and those that did not (Group B).

Descriptive statistics were used to analyze the results. The paired *t*-test was used to analyze the change in visual acuity with treatment within both groups. The odds ratio was used to analyze whether there was a difference in resolution of the PED and/or the disease process between the two groups. The number of patients who came back with a recurrence in each group was noted. Complications, both ocular and systemic, if any, were noted for both groups. The time to resolution of PED was compared using the unpaired *t*-test. Statistical significance was set at $p < 0.05$.

The primary outcome measure was the proportion of patients with resolved PEDs at the end of the follow-up period in each group. Secondary outcome measures were the (1) corrected visual acuity at three months after completion of therapy and at final follow-up in both groups, (2) the recurrence rate in both groups and (3) the complications noted in both groups.

Results

A total of 14 patients (Group A) had received steroids as an adjunct to therapy for IPCV in the said period. These patients were compared to 26 consecutive patients of IPCV undergoing treatment in the same period who did not receive oral steroids (Group B).

9 patients in Group A and 14 in Group B had received laser photocoagulation to the polyp followed one week later with intravitreal anti-VEGF injections, which were repeated as required, depending on the response. The remaining patients received photodynamic therapy for subfoveal or juxtafoveal polyps (as described earlier). The mean number of injections in Group A was 2.85 ± 1.23 vs 2.60 ± 1.32 in Group B. All patients in Group A and 23 patients in Group B had associated large PEDs. The median PED height as measured on ocular coherence tomography scans was 412 ± 108 μm vs 429 ± 122 μm in Groups A vs B respectively.