Abstracts

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Intravitreal Aflibercept Injection for Macular Edema Due to Central Retinal Vein Occlusion (Two-Year Results from the COPERNICUS Study)

Heier JS, Clark WL Ophthalmology, 2014; 1414–20

Jeffrey et al have published the 2 year results from the COPERNICUS study which was done to evaluate the efficacy and safety of intravitreal aflibercept injection (IAI) for the treatment of macular edema secondary to central retinal vein occlusion (CRVO). In this randomized, double-masked, phase 3 trial 188 patients with macular edema secondary to CRVO were enrolled. Patients received IAI 2 mg (IAI 2Q4) (n = 114) or sham injections (n = 74) every 4 weeks up to week 24. During weeks 24 to 52, patients from both arms were evaluated monthly and received IAI as needed, or pro re nata (PRN) (IAI 2Q4 + PRN and sham + IAI PRN). During weeks 52 to 100, patients were evaluated at least quarterly and received IAI PRN. The primary efficacy end point was the proportion of patients who gained ≥15 letters in best-corrected visual acuity (BCVA) from baseline to week 24. This study reports week 100 results. The proportion of patients gaining ≥15 letters was 56.1% versus 12.3% ($P < 0.001$) at week 24, 55.3% versus 30.1% ($P < 0.001$) at week 52, and 49.1% versus 23.3% ($P < 0.001$) at week 100 in the IAI 2Q4 + PRN and sham + IAI PRN groups, respectively. The mean change from baseline BCVA was also significantly higher in the IAI 2Q4 + PRN group compared with the sham + IAI PRN group at week 24 (+17.3 vs. −4.0 letters; $P < 0.001$), week 52 (+16.2 vs. +3.8 letters; $P < 0.001$), and week 100 (+13.0 vs. +1.5 letters; $P < 0.0001$). The mean reduction from baseline in central retinal thickness was 457.2 versus 144.8 µm ($P < 0.001$) at week 24, 413.0 versus 381.8 µm at week 52 ($P = 0.546$), and 390.0 versus 343.3 µm at week 100 ($P = 0.366$) in the IAI 2Q4 + PRN and sham + IAI PRN groups, respectively. The mean number (standard deviation) of PRN injections in the IAI 2Q4 + PRN and sham + IAI PRN groups was 2.7 ± 1.7 versus 3.9 ± 2.0 during weeks 24 to 52 and 3.3 ± 2.1 versus 2.9 ± 2.0 during weeks 52 to 100, respectively. The most frequent ocular serious adverse event from baseline to week 100 was vitreous hemorrhage (0.9% vs. 6.8% in the IAI 2Q4 + PRN and sham + IAI PRN groups, respectively). The authors concluded that the visual and anatomic improvements after fixed dosing through week 24 and PRN dosing with monthly monitoring from weeks 24 to 52 were diminished after continued PRN dosing, with a reduced monitoring frequency from weeks 52 to 100.

Collagen Cross-Linking with Photoactivated Riboflavin (PACK-CXL) for the Treatment of Advanced Infectious Keratitis with Corneal Melting

Said DG, Mohamed S. Elalfy MS, Gatzioufas Z, El-Zakzouk ES, Dalia G. Said DS Ophthalmology, 2014; 121: 1377-82.

Dalia et al investigated the efficacy and safety of corneal collagen cross-linking (CXL) with photoactivated riboflavin (photoactivated chromophore for infectious keratitis [PACK]–CXL) in the management of infectious keratitis with corneal melting in this prospective clinical trial of forty eyes from 40 patients with advanced infectious keratitis and coexisting corneal melting. Twenty-one patients (21 eyes) underwent PACK-CXL treatment in addition to antimicrobial therapy. The control group consisted of 19 patients (19 eyes) who received only antimicrobial therapy. The slit - lamp characteristics of the corneal ulceration, corrected distance visual acuity, duration until healing, and complications were documented in each group. The Mann–Whitney U test was used for statistical analysis. P values less than 0.05 were considered statistically significant. The average time until healing was 39.76 ± 18.22 days in the PACK-CXL group and 46.05 ± 27.44 days in the control group ($P = 0.68$). After treatment and healing, corrected distance visual acuity was 1.64 ± 0.62 in the PACK-CXL group and 1.67 ± 0.48 in the control group ($P = 0.68$). The corneal ulceration's width and length was significantly bigger in the PACK – CXL group ($P = 0.004$ and $P = 0.007$). Three patients in the control group demonstrated corneal perforation; infection recurred in 1 of them. No serious complications occurred in the PACK-CXL group. The authors concluded that corneal CXL with photoactivated riboflavin did not shorten

the time to corneal healing; however, the complication rate was 21% in the control group, whereas there was no incidence of corneal perforation or recurrence of the infection in the PACK-CXL group. These results indicate that PACK-CXL may be an effective adjuvant therapy in the management of severe infectious keratitis associated with corneal melting.

Changes in Postoperative Refractive Outcomes Following Combined Phacoemulsification and Pars Plana Vitrectomy for Rhegmatogenous Retinal Detachment

Cho KH Am J of Ophthalmology. 2014; 158: 251-6.

In this retrospective observational case-control study carried out at department of Ophthalmology, Hallym University College of Medicine, Hallym University Sacred Heart Hospital, Anyang-si, South Korea, the authors evaluated changes in postoperative refractive outcomes following combined phacoemulsification and pars plana vitrectomy for rhegmatogenous retinal detachment (RRD) compared with other retinal diseases. A total of 55 patients who had combined surgery between January 2007 and December 2012 were enrolled. The 25 patients who underwent combined surgery for RRD were included in the RRD group, and 30 patients who underwent combined surgery for other vitreoretinal pathology were included in the control group. Refractive axial length and intraocular pressure (IOP) measurements were performed, and the factors influencing the post-operative refractive outcomes were analyzed.

The mean differences between the postoperative and predicted refractive outcomes in the RRD group and the control group were -0.43 D ± 0.67 (P = .046) and -0.08D ± 0.53 (P = .767), respectively. The mean preoperative IOPs of the affected eye and the fellow eye in the RRD group were 11.44 mm Hg ± 3.15 and 13.16 mm Hg ± 2.73 (P = .045), but no differences were found in the affected eyes and fellow eyes of the control group. The differences were 14.20 mm Hg ± 2.95 and 14.17 mm Hg ± 3.50, respectively (P= .974). The mean postoperative IOPs in the affected eyes and the fellow eyes of the 2 groups were not significantly different. For all eyes, the refractive differences correlated with IOP changes in the RRD group. ($r = .659$, $r^2 = .435$, $P < .001$). The study concluded that postoperative refractive outcomes in the RRD group shifted toward myopia by a mean of 0.35 diopters compared with the control group. Normalizing preoperative lowered IOP after combined surgery in RRD may be the key factor in understanding this myopic shift.

The utility of routine tuberculosis screening in county hospital patients with uveitis.

Bryan Kun Hong, Hossein Nazari Khanamiri, Simon R Bababeygy, Narsing A Rao
British Journal of Ophthalmology, 2014; 98: 1091-5.

Bryan et al evaluated the utility of tuberculosis (TB) screening in diagnosing ocular TB in uveitis patients in a government-funded hospital in this study. The charts of 142 consecutive patients seen during August 2011 – July 2012 at the Los Angeles County Hospital uveitis clinic were reviewed for manifestation / laterality of uveitis, purified protein derivative (PPD) test results, interferon γ release assay, chest x-ray, birthplace, treatment history and diagnosis. 'Presumed TB – uveitis' was diagnosed when patients had positive TB screening and favourable response to anti-TB therapy, and definite ocular TB when Mycobacterium tuberculosis' presence was demonstrated. Post-test probabilities were determined. TB screening was positive in 21.1%. Six patients were diagnosed with TB-related uveitis: one definite, four presumed and one systemic TB with uveitis. With regard to PPD positivity, being foreign-born was the only statistically significant factor with OR of 2.26 (95% CI 1.01 to 5.13; $p < 0.01$) if born in Mexico and 4.90 (95% CI 1.74 to 13.83; $p < 0.01$) if born in other foreign countries. The post-test probabilities of a positive PPD in a uveitis patient showed a 17.2% (overall) or 30.3% (foreign-born patients) chance of ocular TB. The authors concluded that PPD skin test plays an important role in the diagnosis of TB-associated uveitis in high – risk groups, such as immigrants from TB endemic regions.