FELLOWS' FOCUS

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Summaries of two recent journal pieces.

BY THOMAS L. JENKINS, MD; AND RAVI R. PANDIT, MD, MPH

Delayed Retinal Breaks and Detachments After Acute Posterior Vitreous Detachments

Uhr JH, Obeid A, Wibbelsman TD, et al.[1]

Patients frequently present to retinal specialists for evaluation after an acute posterior vitreous detachment (PVD). The incidence of retinal tear after an acute symptomatic PVD ranges widely, from 8% to 43%,[2] but less is known about the development of new retinal tears or detachments following an initial examination despite the common practice of scheduling follow-up examinations within 6 weeks.[3]

Uhr and colleagues conducted a study to determine the timing and incidence of delayed PVD-related complications after an initial examination.[1]

STUDY DESIGN

Researchers at Wills Eye Hospital Retina Service and Mid Atlantic Retina performed this retrospective case-control study of eyes diagnosed with a PVD and undergoing an extended ophthalmoscopic examination on presentation from October 2015 to August 2018. They subsequently

TABLE. HAZARD RATIOS FOR RISK FACTORS FOR DEVELOPMENT OF A DELAYED BREAK OR DETACHMENT

	Eyes With Delayed Retinal Breaks		Eyes with Delayed Retinal Detachments	
	Hazard Ratios (95% Confidence Interval)	*P* Value	Hazard Ratios (95% Confidence Interval)	*P* Value
Vitreous Hemorrhage	2.53 (1.84-3.49)	< .001	2.88 (1.51-5.17)	.001
Intraretinal Hemorrhage	0.88 (0.60-1.30)	.52	0.69 (0.36-1.33)	.27
Lattice Degeneration	1.21 (0.89-1.65)	.22	1.27 (0.67-2.39)	.47
Pseudophakia*	1.09 (0.75-1.58)	.64	2.10 (1.27-3.50)	.004
Male Gender	1.36 (1.04-1.80)	.03	1.87 (1.12-3.11)	.02
Age	0.99 (0.97-1.01)	.39	0.96 (0.93-0.99)	.01

*This includes one aphakic eye in the retinal detachment cohort.
Table adapted from Uhr JH, Obeid A, Wibbelsman TD, et al. Delayed retinal breaks and detachments after acute posterior vitreous detachments [published online ahead of print October 23, 2019]. *Ophthalmology*.

compared the dates of initial examination to those of subsequent treatment with laser retinopexy, cryotherapy, or retinal detachment repair to determine the duration to development of new peripheral pathology.

The study's primary outcome measure was the development of a retinal break or detachment after initial evaluation. Secondary outcomes included incidence of retinal tear on initial visit and risk factors for the development of delayed retinal tear or detachment.

RESULTS

Of the 7,999 eyes diagnosed with an acute PVD, 1,280 (16%) and 499 (6.2%), respectively, were found to have a retinal tear or retinal detachment at presentation. Delayed retinal tears were found in 209 (2.6%) eyes and delayed retinal detachments in 80 (1%) eyes. Of the eyes with a delayed retinal tear, 116 (55.5%) occurred within 6 weeks of initial examination and 93 (44.5%) occurred more than 6 weeks after initial examination. Delayed retinal detachments tended to occur later, with 54 (67.5%) occurring more than 6 weeks after presentation. New or worsening symptoms were present in 84 (40.2%) eyes at the time of delayed retinal tear and 54 (67.5%) eyes when a delayed retinal detachment was diagnosed.

Vitreous hemorrhage and male gender were both associated with the development of a delayed retinal break. The only risk factor associated with greater incidence of a delayed break within 6 weeks was vitreous hemorrhage. Risk factors for the development of delayed retinal detachments included vitreous hemorrhage, pseudophakia at presentation, younger age, and male gender (Table).

SIGNIFICANCE

This study demonstrated that delayed retinal tears and detachments occur after initial examination for acute PVD. A substantial percentage of patients with delayed pathology were asymptomatic and were diagnosed at more than 6 weeks after presentation. The study showed the importance of follow-up examinations after acute PVD to detect potentially treatable pathology.

Effect of Initial Management With Aflibercept vs Laser Photocoagulation vs Observation on Vision Loss Among Patients With Diabetic Macular Edema Involving the Center of Macula and Good Visual Acuity: A Randomized Clinical Trial (DRCR Protocol V)

Baker CW, Glassman AR, Beaulieu WT, et al; DRCR Retina Network[4]

Center-involving diabetic macular edema (CI-DME) is a frequent cause of vision loss worldwide. Intravitreal anti-VEGF injections have been shown in numerous trials to reduce CI-DME and improve visual acuity; however, these trials have historically excluded patients with 20/25 vision or better (good vision). Many patients will nevertheless present with CI-DME and good vision; the optimal management for these patients is unclear. This study sought to determine whether initial anti-VEGF treatment in eyes with CI-DME and good vision resulted in better long-term visual acuity outcomes as compared with observation or focal/grid laser photocoagulation.

STUDY DESIGN

The Protocol V study was conducted at 91 sites across North America.[4] A total of 702 treatment-naïve (or with no treatment within 12 months) adult diabetic patients were randomly assigned to receive 2 mg aflibercept (Eylea, Regeneron), photocoagulation, or observation. In the aflibercept group, injections were administered every 4 weeks if visual acuity or central subfield thickness (CST) on OCT improved or worsened; injections were deferred if measurements were stable for two consecutive visits. Patients in the photocoagulation group received treatment at baseline and every 13 weeks as needed. Patients in the photocoagulation and observation groups could receive aflibercept if their visual acuity declined by at least 10 letters at one visit or by 5 to 9 letters at two consecutive visits. Individuals who required aflibercept rescue were still grouped according to their initial randomization in an intention-to-treat approach.

RESULTS

At 2 years, 25% of patients in the photocoagulation group and 34% of patients in the observation group required aflibercept rescue. Sixteen percent of patients in the aflibercept group, 17% of patients in the photocoagulation group, and 19% of patients in the observation group lost at least 5 letters from baseline; this finding was not statistically significant.

No difference was detected in change in mean visual acuity at 2 years among all groups. Seventy-seven percent of patients in the aflibercept group, 71% of patients in the photocoagulation group, and 66% of patients in the observation group retained 20/20 VA or better at 2 years; the difference between the aflibercept group and observation group was statistically significant ($P = 0.03$).

When considering cumulative improvement in vision over time (area under the curve), aflibercept therapy was superior to photocoagulation (+1.9 letters) and observation (+2.1 letters; $P < .001$ for both).

No difference was detected among the groups in mean change of CST on OCT or 2-step improvement in diabetic retinopathy severity level,

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WANT TO DIVE DEEPER ON PROTOCOL V?

In the September issue of *Retina Today*, Chirag Jhaveri, MD, an executive committee member for the DRCR Retina Network, examined Protocol V. Read "DME and Good Vision: Do We Need to Treat Early?" at bit.ly/Jhavari0320.

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although there was a borderline statistically significant decrease in 2-step worsening of diabetic retinopathy severity level in the aflibercept group compared with the observation group (4% vs 11%, $P = 0.05$).

SIGNIFICANCE

Overall, this study lends confidence that patients with CI-DME and good vision can be observed initially. With this strategy, most patients will retain good vision, and those with functional or anatomic worsening may be treated with anti-VEGF without sacrificing final visual acuity at 2 years. This has significant implications for individual treatment burden as well as the public health expenditures associated with anti-VEGF treatment. ■

1. Uhr JH, Obeid A, Wibbelsman TD, et al. Delayed retinal breaks and detachments after acute posterior vitreous detachments [published online ahead of print October 23, 2019]. *Ophthalmology*.
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3. Dayan MR, Jayamanne DG, Andrews RM, Griffiths PG. Flashes and floaters as predictors of vitreoretinal pathology: is follow-up necessary for posterior vitreous detachment? *Eye*. 1996;10(Pt 4):456e458.
4. Baker CW, Glassman AR, Beaulieu WT, et al; DRCR Retina Network. Effect of initial management with aflibercept vs laser photocoagulation vs observation on vision loss among patients with diabetic macular edema involving the center of the macula and good visual acuity: a randomized clinical trial. *JAMA*. 321(19):1880-1894.

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