

Ethnicity, Race, and Baseline Retinopathy Correlates in the Veterans Affairs Diabetes Trial
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In older Veterans, major causes of vision loss include age-related macular degeneration, glaucoma, cataracts, stroke, and diabetic retinopathy. Among Veterans who have served in Iraq and Afghanistan, blast-related brain injuries can be followed by vision problems such as blurred vision, double vision, sensitivity to light, and difficulty reading. VA estimates that as many as 64 percent of service members with traumatic brain injuries (TBIs) also have a vision problem.

<https://www.eyeworld.org/cataract-care-us-veterans>

FEBRUARY 2017 CATARACT Presentation spotlight Cataract care for U.S. veterans by Stefanie Petrou Binder, MD, EyeWorld Contributing Writer

A 10-year retrospective study reveals excellent cataract outcomes for veterans at the VAMC in D.C. Ninety-nine percent of U.S. veterans achieved final postoperative best corrected visual acuities (BCVA) of 20/40 or better, in cases without ocular morbidities, and mean final vision was 20/200 (median 20/40) in cases with pre-existing ocular morbidities, according to a study presented at the 2016 American Academy of Ophthalmology annual meeting. Cataract surgery in the VA system

Of the nearly 9 million U.S. Veterans Health Administration (VHA) currently enrolled veterans, more than 5 million are 65 years of age or older, of which an estimated 17% will develop cataracts by 2020. M. Teresa Magone, MD, Veterans Affairs Medical Center (VAMC), Washington, D.C., presented the results of the first comprehensive 10-year study of cataract outcomes in U.S. veterans. The retrospective analysis showed excellent visual outcomes, even in subgroups of patients with surgical complications. "A previous VHA study showed visual improvements in 82.6% of patients.¹ However, like many other studies, the outcomes have confounding factors such as pre-existing systemic and ocular comorbidities that can significantly affect the postoperative outcomes," Dr. Magone said in a poster presentation of her study. "Our study was designed to extract and separate subgroups with and without ocular comorbidities through detailed electronic medical record reviews. This enabled a focused analysis of the surgical outcomes of all cataract surgeries performed at our institution over a period of 10 consecutive years. To the best of our knowledge this is the largest study on cataract surgery outcomes in a predominantly African American veteran population." 10-year retrospective The study involved a detailed retrospective chart and operative report review of all consecutive cataract surgeries undertaken at the VAMC in Washington, D.C. during a 10-year interval from 2002 to 2012 (n=2,451 patients) and the categorization of patients into groups: patients whose surgery involved phaco either with or

without preexisting comorbid conditions affecting their visual outcome, and patients who underwent extracapsular cataract extraction (ECCE) either with or without preexisting comorbidities affecting their visual outcome. Most of the patients in the study who underwent phaco plus IOL implantation did not have visually significant ocular comorbidities (n=1,885 patients). Their mean age was 71 years, 1,168 individuals (62%) were African American, 665 (35%) were Caucasian, and 3% were other. Thirty-seven veterans (2%) were female, 253 (13.4%) had glaucoma, and 712 (38%) had diabetes mellitus (DM). Phaco patients with visually relevant ocular morbidities (n=534) were a mean age of 72 years, 325 (60.8%) were African American, 194 (36.7%) were Caucasian, and 13 (2.5%) were other. Of the patients in this group, 23 (4.3%) were female, 10 (0.8%) had zonular dehiscence, and 238 (44.5%) had DM. Comorbidities included: proliferative diabetic retinopathy (10%), non-proliferative diabetic retinopathy (9%), ARMD (16%), advanced glaucoma (8.2%), retinal vein occlusion (3.2%), epiretinal membrane (9.5%), amblyopia (3.7%), optic neuropathy (4.3%), pre-existing CSME (8%), and others. Nineteen patients underwent ECCE and were free of visually relevant ocular morbidities. Their mean age was 72.8 years, 15 were African American (79%) and four (21%) Caucasian, and five had DM (26%). Thirteen patients underwent ECCE who had comorbidities. Their mean age was 79.9 years, nine (69%) were African American, four (13%) were Caucasian, one had a preoperative lens subluxation (7.7%), and five had DM (38.4%). Other comorbidities in this group included proliferative diabetic retinopathy (7.7%), retinal vein occlusion (7.7%), macular scars/heme/dystrophy (7.7%), history of retinal detachment (7.7%), optic neuropathy (23%), and amblyopia (7.7%). The final best corrected visual acuity was 20/40 or better in 99.8% and 20/25 or better in 95.5% of subjects with phaco plus IOL implantation and no ocular diseases. Surgical complications were experienced in 166 individuals in this group, of which 100% achieved 20/40 or better and 89% achieved 20/25 or better BCVA. Among patients who had phaco with pre-existing ocular disease, 60% achieved 20/40 or better and 16% achieved 20/25 or better BCVA. In the ECCE subgroups, 83% of subjects with ECCE with no comorbidities achieved 20/40 or better and 72% achieved 20/25 or better BCVA. One-third of ECCE patients with ocular

comorbidities achieved 20/40 or better and 8% achieved 20/25 or better BCVA. The most common complication was posterior vitreous loss, seen in 3% of patients, followed by cystoid macular edema seen in 3.2%. Other complications included posterior capsule tear with no vitreous loss, rhexis problems, floppy iris syndrome, and other less common complications. The vitreous loss rates of 3.0% at the D.C. VAMC are comparable to the reported surgical outcomes of other academic institutions. Factors affecting outcomes In addition to pre-existing ocular pathologies, other factors played a decisive role in the surgical outcomes seen at the veteran's hospital, such as equipment upgrades and resident training. Dr. Magone explained, "Pre-existing diseases affecting visual outcomes resulted in decreased final postoperative vision and higher rates of cystoid macular edema compared to non-affected veterans. However, there was still significant visual improvement after cataract surgery, even with pre-existing disease. In 2005, the phaco equipment was upgraded to a newer machine, which improved the vitreous loss rates and decreased OR time significantly. The mean phaco surgical time before the upgrade was 71.7 minutes compared to 58.6 minutes (unpaired t-test $p=0.0001$), involving a difference of 13.1 minutes, after the upgrade. Similarly, the rate of vitreous loss decreased from 5.0% to 3.9%, after the upgrade." Of the surgeries reviewed in the study, 85% were performed by residents with attending supervision. Resident training, although essential, is another factor affecting cataract surgical efficiency. According to Dr. Magone, while the surgical teaching of ophthalmology residents is important in supporting academic programs and is safe with good visual outcomes, it unfortunately also decreased OR time efficiency to 59% at the D.C. VA. This factor should be taken into account when evaluating the efficiency of OR time and surgical numbers at VA facilities. The VAMC in D.C. plays a major role in training ophthalmology residents from three different residency programs. Currently, there are 20 ophthalmology residents (including 16 anterior segment surgery residents) rotating through the facility every year. The surgical time reported in the current study may also vary depending on the documentation accuracy of the circulating nurse, lack of support from the surgical OR nurse (non-ophthalmic nurse), and the time needed to load the IOL into the

injector, which is done by the surgeon at the VA facility in D.C. Data revealed that second-year residents performed 698 phaco and IOL surgeries in 52,964 minutes, while third-year residents performed 1,358 phaco and IOL surgeries in 78,321 minutes. "Teaching surgery to residents helps train the next generation of ophthalmic surgeons and assists residency programs, but also decreases VA OR time efficiency," Dr. Magone said. "In our study, the number of potential phaco surgeries that could be performed by an attending surgeon within the available OR time decreased by 41% secondary to intraoperative resident teaching. However, patient safety and visual outcomes are not compromised by resident teaching as shown by our results." Another recent VA study reported favorable 5-year outcomes resulting from resident-performed cataract surgery as well.² "It is heartening to see that this essential training of our future ophthalmologists is also associated with excellent patient outcomes," she said. References 1. Evaluation of Cataract Surgeries and Outcomes in VHA Facilities. 2013 OIG Report 11-02487-158. 2. Payal AR, et al. Outcomes of cataract surgery with residents as primary surgeons in the Veterans Affairs Healthcare System. J Cataract Refract Surg. 2016;42:370-84. Editors' note: Dr. Magone has no financial interests related to her comments. Contact information Magone: maria.magone@va.gov

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