

Compliance with Postoperative Cataract Surgery Care in an Urban Teaching Hospital

AMANDA B. SALTER, MD; ALLISON J. CHEN, BA; DAVID W. LEE, BS; PAUL B. GREENBERG, MD

ABSTRACT

The quality of postoperative care received by patients undergoing resident-performed cataract surgery is not well described. In a retrospective chart review, this study investigated the prevalence and preoperative predictors of noncompliance with postoperative cataract surgery care in an urban teaching hospital. It found that one in four patients was noncompliant with cataract surgery postoperative care and that age 50 years or less was a key predictor of non-compliance.

KEYWORDS: Cataract surgery, resident, postoperative care, compliance

Cataracts account for 50% of visual impairment in adults over 40 years old in the United States.¹ Cataract surgical training is an important component of ophthalmic graduate medical education and this includes ensuring that patients receive appropriate postoperative care for the detection and treatment of complications and monitoring patient outcomes.¹ However, the quality of postoperative care received by patients undergoing resident-performed cataract surgery is not well described. To this end, we investigated the prevalence and preoperative predictors of noncompliance with postoperative cataract surgery care in an urban teaching hospital.

After obtaining approval from the Rhode Island Hospital (RIH) Institutional Review Board, we performed a retrospective chart review of patients undergoing resident-performed first-eye cataract surgery from May 2010 to December 2012 at the RIH ophthalmology clinic. Patients receiving combined surgeries for cataract and glaucoma or retina, and legally incarcerated patients were excluded. Data obtained included demographics, insurance status, medical comorbidities measured by the Charlson Comorbidity Index (CCI), the presence of psychiatric illness, ocular comorbidities, preoperative visual acuity and noncompliance with postoperative care, defined as missing one or more of the three

recommended postoperative visits (one day, one week and one month) following cataract surgery. Statistical analysis included descriptive statistics to compare the prevalence of baseline characteristics, using 2-sided t-tests for continuous variables and chi-square tests for categorical variables. Multivariable logistic regression was used to identify factors associated with noncompliance. Ocular comorbidities and insurance status were excluded in the multivariate analysis due to multicollinearity.

Of 309 charts reviewed, 281 patients met the inclusion criteria. The characteristics of compliant and noncompliant patients are outlined in **Table 1**. There were no significant differences between the two groups of patients except for

Table 1. Characteristics of Patients Based on Compliance with Postoperative Cataract Surgery Care

Characteristic	Number (%) of noncompliant patients	Number (%) of compliant patients	Test statistic, P-value
Age, mean [SD]	58.5 [1.6] years	63.0 [0.81]	t-test=2.36, p=0.02
<50	17 (23.6)	25 (12.0)	
≥50	55 (76.4)	184 (88.0)	
Gender			$\chi^2=1.19$, p=0.27
Male	36 (50.0)	89 (42.6)	
Female	36 (50.0)	120 (57.4)	
CCI			$\chi^2=0.22$, p=0.63
<2	51 (70.8)	154 (73.7)	
≥2	21 (29.2)	55 (26.3)	
Ocular comorbidities			$\chi^2=0.0$, p=.99
0	41 (56.9)	119 (56.9)	
≥1	31 (43.1)	90 (43.1)	
Psychiatric illnesses			$\chi^2=0.47$, p=0.49
0	60 (80.3)	181 (86.6)	
≥1	12 (16.7)	28 (13.4)	
Pre-op visual acuity in logMAR units (mean, SD)	0.68 (.14)	0.73 (.11)	$\chi^2=2.09$, p=0.14
<1.00	44 (61.1)	147 (70.3)	
≥1.00	28 (38.9)	62 (29.7)	
Insurance			$\chi^2=0.44$, p=0.51
Health insurance	36 (50.0)	114 (54.6)	
No Health insurance	36 (50.0)	95 (45.4)	

CCI = Charlson Comorbidity Index

age: the mean age was 58.5 and 63 in noncompliant and compliant patients respectively ($p=0.02$). The rate of non-compliance with follow-up visits was 25.6% (72/281). In the multivariable logistic regression (Table 2), age was an independent predictor for noncompliance with postoperative cataract surgery care: patients aged 50 years or less had higher odds of failing to complete recommended postoperative follow-up visits (OR: 2.07, 95% CI: 1.02-4.21).

This study suggests that one in four patients was non-compliant with cataract surgery postoperative care at our teaching hospital. While nearly half of all patients miss follow-up visits in resident glaucoma clinics,² noncompliance with postoperative care is particularly worrisome: patients are at risk for untreated complications such as endophthalmitis, cystoid macular edema, or steroid-induced glaucoma; they also can miss the full benefits of cataract surgery due to uncorrected refractive error.

Burden of illness, younger age and socioeconomic factors have been associated with poor follow-up in resident clinics in other specialties.³⁻⁵ In our study cohort, we found that age 50 years or less was a key predictor of noncompliance for postoperative cataract surgery care. Further research is needed to identify potential barriers – such as conflicting work obligations – to postoperative care in this age group.

Potential limitations of this study include its retrospective design and its focus upon identifying patients at risk preoperatively, which precluded assessing the impact of surgical complications and postoperative vision on compliance with postoperative care. In addition, we did not evaluate the impact of resident characteristics such as poor communication skills. Finally, the study was conducted at one teaching hospital and its findings may not be generalizable to other settings.

In summary, this study suggests that younger patients are at particular risk for noncompliance with postoperative cataract surgery care in urban teaching hospitals and that efforts to improve compliance should target this patient cohort.

References

1. American Academy of Ophthalmology Cataract and Anterior Segment Panel. Preferred Practice Pattern® Guidelines. Cataract in the Adult Eye. San Francisco, CA: American Academy of Ophthalmology; 2011. Available at: www.aao.org/ppp. Accessed April 11, 2013.
2. Ngan R, Lam DL, Mudumbai RC, Chen PP. Risk Factors for Noncompliance with Follow-up Among Normal-tension Glaucoma Suspects. *Am J Ophthalmol*. 2007;144(2): 310-311.
3. Nguyen DL, DeJesus RS, Wieland ML. Missed Appointments in Resident Continuity Clinic: Patient Characteristics and Health Care Outcomes. *J Grad Med Educ*. 2011;3(3): 350-355.
4. Hixon AL, Chapman RW, Nuovo J. Failure to Keep Clinic Appointments: Implications for Residency Education and Productivity. *Fam Med*. 1999;31(9): 627-630.
5. Guse CE, Richardson L, Carle M, Schmidt K. The Effect of Exit-Interview Patient Education on No-Show Rates at a Family Practice Residency Clinic. *J Am Board Fam Pract*. 2003;16(5): 399-404.

Table 2. Odds Ratios of Noncompliance with Postoperative Cataract Surgery Care

Characteristic	Odds Ratio (95% Confidence Interval)
Age <50 ≥50	2.07 (1.02-4.21) 1 [reference]
Gender Female Male	0.79 (0.46-1.38) 1 [reference]
CCI ≥2	1.13 (0.61-2.10)
Psychiatric illnesses ≥1	1.17 (0.54-2.54)
Pre-op visual acuity in logMAR units ≥1	1.44 (0.80-2.60)

CCI = Charlson Comorbidity Index

Authors

Amanda Salter, MD, is a third-year resident in the Ophthalmology Residency at Rhode Island Hospital/Warren Alpert Medical School of Brown University.

Allison Chen, BA, is a medical student at the Warren Alpert Medical School of Brown University.

David Lee, BS, is a medical student at the Warren Alpert Medical School of Brown University.

Paul Greenberg, MD, is a Clinical Associate Professor of Surgery (Ophthalmology) at the Alpert Medical School of Brown University, Chief of Ophthalmology at the Providence Veterans Affairs Medical Center, and Associate Program Director of the Ophthalmology Residency at Rhode Island Hospital/Warren Alpert Medical School of Brown University.

Conflicts of Interest

The authors report no conflicts of interest.

Financial Support

None.

Disclaimer

The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the US Veterans Health Administration or the US Government.

Correspondence

Paul B. Greenberg, MD

Division of Ophthalmology, Rhode Island Hospital
Coro Center West

One Hoppin Street, Suite 200

Providence, RI 02903

401-444-8615

Fax 401-444-7076

paul_greenberg@brown.edu