

Inpatient Adherence to Topical Glaucoma Medications Before & After an Educational Intervention

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Introduction

- Glaucoma is a chronic disease that requires regular ophthalmologic exams and strict patient compliance with medications
- While much of the literature has focused on glaucoma medication adherence and strategies to improve adherence in the outpatient setting, there exists a significant gap in the literature on adherence to glaucoma medications in the inpatient setting.¹
- One 2011 study of inpatient adherence to topical glaucoma medications looked at hospitalizations from 2006-2009. The study reported a topical glaucoma medication adherence rate of 51.6%.²
- Since then, the use of electronic medical records (EMR) has increased significantly. From 2008 to 2015, the number of non-federal acute care hospitals with at least a basic EMR has increased from 9.4% to 83.8% in the United States.³

Purpose

- Assess topical glaucoma medication adherence rates (MAR) in an inpatient setting before and after an educational intervention

Methodology

- A nonrandomized comparative retrospective study of inpatients treated with topical glaucoma medications prior to (January 2014-December 2018, N=142) and after (August 2018-April 2019, N=36) an educational intervention targeting inpatient providers
- Administration of greater than 75% of doses defined adherence.
- Educational intervention included e-mails to internal medicine and general surgery residents, inpatient physician assistant staff, UMN inpatient hospitalist providers, nursing staff and a weekly newsletter posting
- Outcome measures included adherence to topical glaucoma meds while hospitalized as an inpatient and whether adherence was associated with length of stay, number of medications, type of medication, admitting diagnosis, whether outpatient medication regimen was known at admission, and whether outpatient regimen was prescribed at admission

Results

Medication type	Pre-intervention		Post-intervention	
	N	Compliance	N	Compliance
Prostaglandin	100	77 (77%)	15	14 (93.3%)
Beta blocker	76	58 (76.3%)	15	12 (80%)
Carbonic anhydrase inhibitor	49	36 (73.5%)	6	5 (83.3%)
Alpha agonist	39	29 (74.4%)	8	7 (87.5%)
Anti muscarinic	11	7 (63.6%)	3	2 (66.6%)
TOTAL	275	207 (75.3%)	47	40 (85.1%)

Results

	Pre-Intervention	Post-Intervention	
N	142	36	
Age	73.79	74.7	P=0.325
Sex			
Male	59 (41.6%)	17 (47.2%)	P=0.231
Female	83 (58.5%)	19 (52.8%)	P=0.242
Race			
White	116 (82.9%)	29 (80.6%)	P=0.319
African American	16 (11.43%)	5 (13.9%)	P=0.325
Other	8 (5.6%)	2 (5.6%)	P=0.382
Length of stay (days)	8.58	7.91	P=0.231
Number meds per patient	1.94	2.2	P=0.204
Outpatient Regimen Known?			
Yes	137 (96.5%)	35 (97.2%)	P=0.295
No	5 (3.5%)	1 (2.8%)	P=0.256
Outpatient Regimen Prescribed?			
Yes	122 (85.9%)	33 (91.7%)	P=0.150
No	20 (14.1%)	3 (8.3%)	P=0.183

- Overall topical glaucoma medication adherence rate was **75.3% in the pre-intervention group** and **85.1% in the post-intervention group**
- Overall adherence was significantly associated with a known outpatient med regimen (p = 0.006) and correct admission prescribing (p = 0.00)
- Number of meds (p = 0.987), length of stay (p = 0.620), admission diagnosis, or type of med **were not associated** with improved adherence

Conclusions

- Inpatient topical glaucoma MAR has increased in the EMR era but further education of inpatient health care providers can improve adherence
- Attention to correct medication reconciliation on admission is significantly associated with appropriate compliance

References

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3. United States, Congress, The Office of the National Coordinator for Health Information Technology (ONC), et al. "Adoption of Electronic Health Record Systems among U.S. Non-Federal Acute Care Hospitals: 2008-2015." *Adoption of Electronic Health Record Systems among U.S. Non-Federal Acute Care Hospitals: 2008-2015*, vol. 35, ONC Data Brief, 2016.

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