

Face-to-face or by Telephone? Impact of the Method of Delivering Preoperative Instructions on Patient Compliance With Angiotensin-Converting Enzyme Inhibitors (ACEIs) And Angiotensin II Receptor Blockers (ARBs).

Sergey Kobzar, DNP(s), CRNA

Old Dominion University, Norfolk, Virginia

Problem

- Over 24% of surgical patients are not compliant with medication instructions, and the utilization of angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin II receptor blockers (ARBs) medication prior to surgery may lead to refractory hypotension in perioperative care (Azer et al., 2023).
- Perioperative hypotension has been associated with postoperative myocardial infarction in 3.1% of patients and acute kidney injury in 5.6% of patients after noncardiac surgery (Salmasi et al., 2017).
- Hemodynamic instability can be reduced by 20% by withholding ACEI/ARB medications (Roshanov et al., 2017).
- The recommendation to hold ACEI/ARB medications is aligned with the 2017 clinical practice guideline provided by the American College of Cardiology and American Heart Association (Whelton et al., 2018).

Purpose

This study aimed to compare the effectiveness of three interventions to improve diabetic eye exams screening rates.

Methods

- A non-experimental, descriptive correlational design.
- retrospective chart review of surgical patients from September 1st, 2022, to December 31st, 2022. .
- Chi-square analysis was used to compare patient compliance and the type of delivery preoperative instructions (in person visit or contacted by phone).

Limitations

- The sample size of 18 and 104 patients was not sufficient for equal comparison, and a greater sample size is needed to assess statistical significance.
- The demographic characteristics of sample population were different than the general characteristics of veteran population in Mid-Atlantic region
- The multiple variables may affect the process of knowledge transfer from the preoperative clinic staff to a patient
 - Personal communication skills,
 - Existing beliefs and habits,
 - Personal social or economic status,
 - the level of literacy or the living arrangements.

Research Questions

RQ1: Is there a significant difference in patients' compliance with preoperative guidelines related to ACEI/ARB medications after a preoperative clinic visit for patients who received instructions in-person and those who received them by phone?

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.569 ^a	1	.210		
Continuity Correction ^b	.971	1	.324		
Likelihood Ratio	1.671	1	.196		
Fisher's Exact Test				.288	.162
Linear-by-Linear Association	1.556	1	.212		
N of Valid Cases	122				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.34.
b. Computed only for a 2x2 table

Findings

The Chi-Square test has a value of 1.569 and the p-value is above 0.05 (p = .210). The test does not support the hypothesis with statistically significant differences between groups.

RQ2: What is the relationship between the ACEI/ARB treatment duration and compliance with preoperative instruction to hold ACEI/ARB medication among adult surgical patients?

Patient Compliance / Treatment Duration	N	Mean (months)	Std. Deviation
Compliant	56	20.66	31.51
Not compliant	32	23.81	27.63

		Treatment duration	compliance
Kendall's tau_b	Treatment duration	Correlation Coefficient	1.000
		Sig. (2-tailed)	.768
	N		88
compliance	Treatment duration	Correlation Coefficient	-.026
		Sig. (2-tailed)	.768
	N		88
Spearman's rho	Treatment duration	Correlation Coefficient	1.000
		Sig. (2-tailed)	.770
	N		88
compliance	Treatment duration	Correlation Coefficient	-.032
		Sig. (2-tailed)	.770
	N		88

Findings

- The difference between treatment duration means is not statistically significant, as tested by the independent t-test for equal variances (t = .471, p = .639).
- The Spearman test did not support a significant level of correlation (r_s = .770) between the treatment duration and patient compliance with preoperative guideline.

RQ3: What is the relationship between the timing of the preoperative visit and compliance with preoperative instruction to hold ACEI/ARB medication among adult surgical patients?

Patient Compliance/ Time Between Visits	N	Mean Time (days)	Std. Deviation
Compliant	79	10.86	5.25
Not compliant	43	10.33	4.91

		compliance	Timing
Kendall's tau_b	compliance	Correlation Coefficient	1.000
		Sig. (2-tailed)	.049
	N		122
Timing	compliance	Correlation Coefficient	.049
		Sig. (2-tailed)	.524
	N		122
Spearman's rho	compliance	Correlation Coefficient	1.000
		Sig. (2-tailed)	.526
	N		122
Timing	compliance	Correlation Coefficient	.058
		Sig. (2-tailed)	.526
	N		122

Findings

- The difference for mean comparison was not statistically significant, as tested by the independent t-test for equal variances (t = .550, p = .583).
- The correlation coefficient is 0.058, and the test did not support the correlation between the timing of preoperative appointment and patient compliance at a statistically significant level of correlation (r_s = .526).

Sample

The results revealed that 18 (14.8%) of surgical patients received preoperative instructions in person, and 104 (85.2%) of patients received them by telephone. Overall, 35.2% of patients were not compliant with the guideline, with 22.2% from the in-person group and 37.5% from the telephonic group.

Instructions method * compliance Crosstabulation

Instructions method		compliance		Total
		Not Compliant	Compliant	
In-person	Count	4	14	18
	% within Instructions method	22.2%	77.8%	100.0%
Telephone	Count	39	65	104
	% within Instructions method	37.5%	62.5%	100.0%
Total	Count	43	79	122
	% within Instructions method	35.2%	64.8%	100.0%

Setting

The VA hospital in the eastern Mid-Atlantic region, and it is a 432-bed teaching facility that provides around twenty surgeries or minor procedures during the regular workday.

Conclusions

- There was a high rate of non-compliance (35.2%) with holding ACEI/ARB medication among surgical veteran population from September 1st to December 31st, 2022 at this VA Medical Center. This overall rate is higher than the comparable rate of 24.5% reported by Azer et al. (2023). Surgical patients who received the guideline in person had a rate of 22.2% which is comparable to previous report, but the telephonic group had 37.5% and imposed a greater influence on the overall rate of non-compliance. Telephonic appointments may provide convenience to patients, but the preoperative education process for patients utilizing phone visits will require a greater review to address higher non-compliance rates.
- The preoperative visit in person was a more effective method for knowledge transfer from nurses to patients, but a larger sample size may be required to prove statistical significance between the two groups.

Acknowledgements and Disclaimers

Special thanks to ODU faculty advisors:
Carolyn M. Rutledge, PhD, FNP-BC, FAAN and
Robert Hawkins, PhD, DNP, MPH, MS, MBA, MA, FAAN, CRNA

- Acknowledgement of VA support and VA employment.
- This material is the result of work supported with resources and the use of facilities at the Hampton VA Medical Center (100 Emancipation Dr., Hampton, VA 23667).
- Sergey Kobzar is nurse anesthetist, who is employed at Hampton VA Medical Center (100 Emancipation Dr., Hampton, VA 23667).

DVA/US Government disclaimer.
The contents do not represent the views of the U.S. Department of Veterans Affairs or the United States Government.