Associations Between Provider Experience, Demographics, Perceived Influences and Barriers, and Prescribing Inequities Among Patients With CKD

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Introduction

Significant inequities in prescription medication use are well documented and require evaluation at both patient and provider levels.[1,2] This study aims to assess how provider traits associate with prescribing patterns, hypothesizing that certain providers' traits may influence these patterns. Previous studies have looked at inequities based on patients' demographics. To further contribute to achieving pharmacoequity, this study explored the potential association between providers' characteristics and prescription patterns.

Objective

This preliminary study explores the potential impact of providers' characteristics on prescribing patterns specifically within a CKD clinic setting.

Methods

A retrospective cross-sectional study included 1,285 adults (age 19-97) with CKD stages G2–G4, seen by 12 nephrologists at CUIMC (Feb 2020–Dec 2024). Data at the patient level, such as patients' demographics, comorbidities, estimated glomerular filtration rate (eGFR), albuminuria, and insurance status, were obtained from EPIC. Other provider-level data, such as years in practice, self-reported participation in peer discussion prior to prescribing, factors influencing decision-making, and perceived barriers in prescribing new medications, were collected via anonymized surveys. Using the deidentified patient and provider numbers, both patient-level and provider-level data were linked together.

To evaluate providers' attitudes and behaviors related to new medications, they were asked about their own personal prescribing patterns including the frequency of prescribing newly approved medications, the influence of colleagues' prescribing habits, participation in peer discussions, and decision-influencing factors such as clinical trial evidence, peer recommendations, and cost. Medications of interest were prescription patterns for SGLT2 inhibitors, ACEi/ARBs, and steroidal/non-steroidal MRAs. Mixed-effects logistic regression was used for SGLT2i and ACE/ARB; mixed-effects multinomial logistic regression was used for MRA, incorporating a random provider intercept to account for clustering of patients within providers. All models were adjusted for patients' age, sex, race/ethnicity, insurance, diabetes, heart failure, CKD stage, albuminuria category, and preferred language.

Results

Medications	Provider Traits/ Influencing factor	F value	P-value
SGLT2	Years in Practice	2.17	0.090
	Prescription Frequency of Newly Approved Medications	8.67	<0.05
	Pharmaceutical Detailing	0.36	0.70
	Peer Recommendation	16.57	<0.05
	Costs	9.35	<0.05
	Time	1.64	0.20
ACEi/ARB	**Years in Practice**	5.45	<0.05
	Prescription Frequency of Newly Approved Medications	1.02	0.36
	Pharmaceutical Detailing	16.85	<0.05
	Peer Recommendations	1.12	0.29
	Costs	0.29	0.59
	Time	6.98	<0.05
MRA	Years in Practice	0.46	0.83
	Prescription Frequency of Newly Approved Medications	4.54	<0.05
	Pharmaceutical Detailing	0.91	0.46
	Peer Recommendations	10.55	<0.05
	Marketing	1.77	0.17
	Costs	4.55	<0.05
	Insurance	0.06	0.94
	Time	0.06	0.94

Table 1. Global test of association for provider traits and medication prescribing pattern.
*Each model adjusted for patient-level covariates (age, sex, race, ethnicity, insurance, diabetes, CHF, CKD stage, UACR stage, preferred language) and included a random intercept for provider.

Characteristic	n	%
Prescription Frequency of Newly Approved Medications		
Often (within 6 months of approval)	6	50.00
Sometimes (6-12 months post-approval)	3	25.00
Rarely (more than 12 months post-approval)	3	25.00
Peer Discussions about New Medications		
Yes, frequently	5	41.67
Yes, occasionally	6	50.00
No	1	8.33
Influence of Colleagues' Prescribing Habits		
Very influential	4	33.33
Somewhat influential	6	50.00
Not influential	2	16.67
Influence of Pharmaceutical Detailing		
Moderately	1	8.33
Slightly	4	33.33
Not at all	7	58.33

Table 2. Provider attitudes /behaviors and influencing factors related to new medications

Discussion

Frequency of prescribing newly approved medications and peer recommendation showed a significant association in both SGLT2i and MRA prescribing patterns. For MRA, the cost of the medication showed a significant association among non-steroidal, steroidal MRA, and not prescribing them ($p < 0.05$). For ACEi/ARB, years in practice ($p < 0.05$), pharmaceutical detailing such as meeting with sales representatives ($p < 0.05$), and time ($p < 0.05$) showed a significant association.

Half of the providers (n=6; 50%) reported that they prescribed a newly approved medication within 6 months of its approval. 11 of the providers (91%) reported they were influenced by peer discussions about the new drugs and 10 providers (83%) acknowledged that they were influenced by their colleagues' prescribing habits.

Limitations

Some limitations of this study are that only 12 providers from one clinic was surveyed and these findings do not establish directionality nor does it establish causality.

Conclusion

In this CKD cohort, providers' traits and perceived influences and barriers may be associated with prescribing patterns. These results suggest significant associations between prescription patterns and certain provider-level indicators, such as their comfortability of prescribing newly approved medications and their own history of prescribing new medications, however cost of the medications also appear to influence their decision-making as well. These provider-level indicators likely influence the ability to achieve pharmacoequity in the CKD clinic.

This study brings a unique perspectives to the field as it considers disparities in patients' care at the provider level. Therefore, future research with a greater sample size should be conducted to further evaluate pharmacoequity in the CKD population.

Disclosure/Reference

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