Medication nonadherence is associated with increased morbidity but not mortality after lower extremity revascularization in patients with PAD

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Introduction

- Peripheral artery disease (PAD) affects >12 million people in the USA

- Treatment with medications has been showed to limit disease progression, improve quality of life, prevent cardiovascular complications, and reduce risk of limb loss

- Poor medical adherence results in worse outcomes which is affected by a myriad of socioeconomic, patient-specific, and medical factors

Aims

- Aims to evaluate the effect the of medication adherence on PAD outcomes and the factors associated with nonadherence

Methods

- Patients who underwent lower extremity endovascular revascularization at an urban academic institution for PAD

- PDC was calculated 90d after discharge

$$\text{PDC} = \frac{\text{Number of days covered}}{\text{Total number of days}}$$

- PDC >80% = adherent

- Area deprivation index (ADI) was used to determine socioeconomic disadvantage

- Multivariate analyses were performed using logistic regression was used to find factors associated with death, reintervention, major and minor amputation, and readmission

Table 1. Medication Fill

Medication	% prescribed	prescribed, not filled n (%)	prescribed, filled n (%)	% adherent
P2Y12 Inhibitors	88.7	22 (10.7)	206 (90.3)	73.7
Statin	87.1	15 (6.7)	209 (93.3)	71.4
Beta-blocker	59.9	14 (9.9)	140 (90.1)	73.5
ACE-ARB	54.9	6 (4.3)	135 (95.7)	73.0
Anticoagulation	40.4	12 (11.5)	92 (88.5)	59.0
Other anti-hyperglycemics	29.6	8 (10.5)	68 (89.5)	62.7
Metformin	28.4	8 (10.8)	66 (89.2)	73.0
Insulin (long)	28.4	10 (3.7)	63 (86.3)	73.8
Insulin (short)	19.8	8 (15.7)	43 (84.3)	46.2
Sulfonylurea	5.1	1 (7.7)	12 (92.3)	62.7

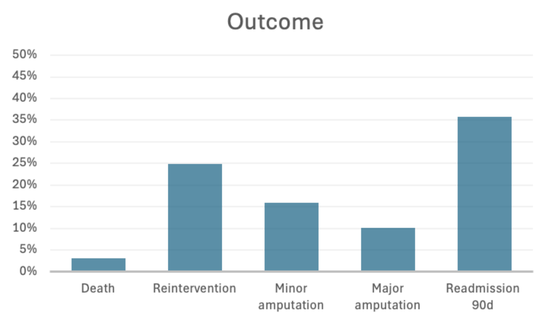
n = 257

Table 3. Regression outcomes

	Reintervention	Major amp	Minor amp	Death (90d)
Composite adherence	p < 0.001	p = 0.116	p = 0.097	p = 0.362
National ADI	p = 0.999	p = 0.169	p = 0.924	p = 0.881
Insurance	p = 0.065	p = 0.098	p = 0.292	p = 0.881
Birth Sex	p = 0.42	p = 0.224	p = 0.743	p = 0.464
Hispanic/Latin ethnicity	p = 0.036	p = 0.82	p = 0.106	p = 0.289
Age	p = 0.352	p = 0.646	p = 0.549	p = 0.020
PAD severity	p = 0.085	p = 0.968	p = 0.183	p = 0.455
MI	p = 0.433	p = 0.436	p = 0.631	p = 0.83
T2DM	p = 0.761	p = 0.123	p = 0.014	p = 0.27
HTN	p = 0.025	p = 0.947	p = 0.244	p = 0.424
Dialysis	p = 0.613	p = 0.043	p = 0.182	p = 0.328
Smoking	p = 0.752	p = 0.877	p = 0.062	p = 0.484

Table 2. Demographic

Variable	*n* (%)
Birth sex	
Female	106 (41.2)
Male	151 (58.8%)
Age [IQR]	70 [64-78]
National ADI [IQR]	22 [8-29]
Hispanic/Latino	107 (41.6%)
Insured	235 (91.4%)
HTN	240 (93.4%)
T2DM	166 (64.6%)
Dialysis	29 (11.3%)
MI	36 (14.0%)
Smoking	
Former	107 (41.6%)
Current	53 (20.6%)
PAD severity	
Claudication	45 (17.5%)
Tissue loss	78 (30.4%)
Rest pain	124 (48.2)



Results

- The most prescribed medications were P2Y12 inhibitors and statins

- Diabetes medications had the highest rates of nonadherence

- Patients with HTN were 4x more likely to be adherent to their medications while patients on dialysis were 40% less likely to be adherent

- Adherence to medications was associated with 70% lower odds of reintervention

- Hispanic patients had two-fold increased odds of reintervention

- Patients on dialysis had significantly higher risk for minor and major amputation.

- Patients with diabetes had a 3x increased risk for minor amputation

- Older patients had an 10% increased risk of death

Conclusions

- Medication nonadherence and Hispanic ethnicity increases the risk for repeat revascularization

- Postoperative follow up visits should include discussion if patients are taking their medications

- Future studies should focus on elucidating the reasons why patients are not taking their medications and investigating factors that place Hispanic patients at elevated risk for revascularization