



Pharmacist-Physician Collaborative Care Model vs. Standard Care: Assessing Time to Blood Pressure Goal

¹Eric Parod, PharmD; ¹Dave L. Dixon, PharmD; ¹Evan M. Sisson, PharmD, MHA; ¹Pramit A Nadpara, PhD; ¹Benjamin W. Van Tassell, PharmD;

¹Heather Savage, PharmD Candidate; ¹Leticia Moczygemba, PharmD, PhD; ²Daniel Carl, MD; ²Alan Dow, MD; ¹VCU School of Pharmacy, ²VCU School of Medicine



Introduction

Delayed intensification of blood pressure (BP) management has been shown to increase cardiovascular risk in patients with hypertension (HTN). Pharmacist-Physician Collaborative care Models (PPCMs) are shown to improve BP control rates and reduce mean BP, but the effect of PPCMs on time to BP goal is unknown.

Objectives

The primary objective was to compare the time to BP control of a PPCM to standard care (SC) in an uninsured population with HTN. The secondary objective was to identify the proportion of patients with BP control at the end of the 12-month follow-up period.

Methods

This retrospective cohort study utilized medical records from a safety-net free clinic (PPCM) and an academic medical center providing primary care to an uninsured patient population (SC).

A total of 1079 charts were reviewed. Patients with HTN or on anti-HTN medications were included if their initial visit was between January 1, 2012 and December 31, 2013. Those who were pregnant, had <2 clinic visits, severe renal disease, managed by an outside provider, or co-managed by a pharmacist (SC group only) were excluded.

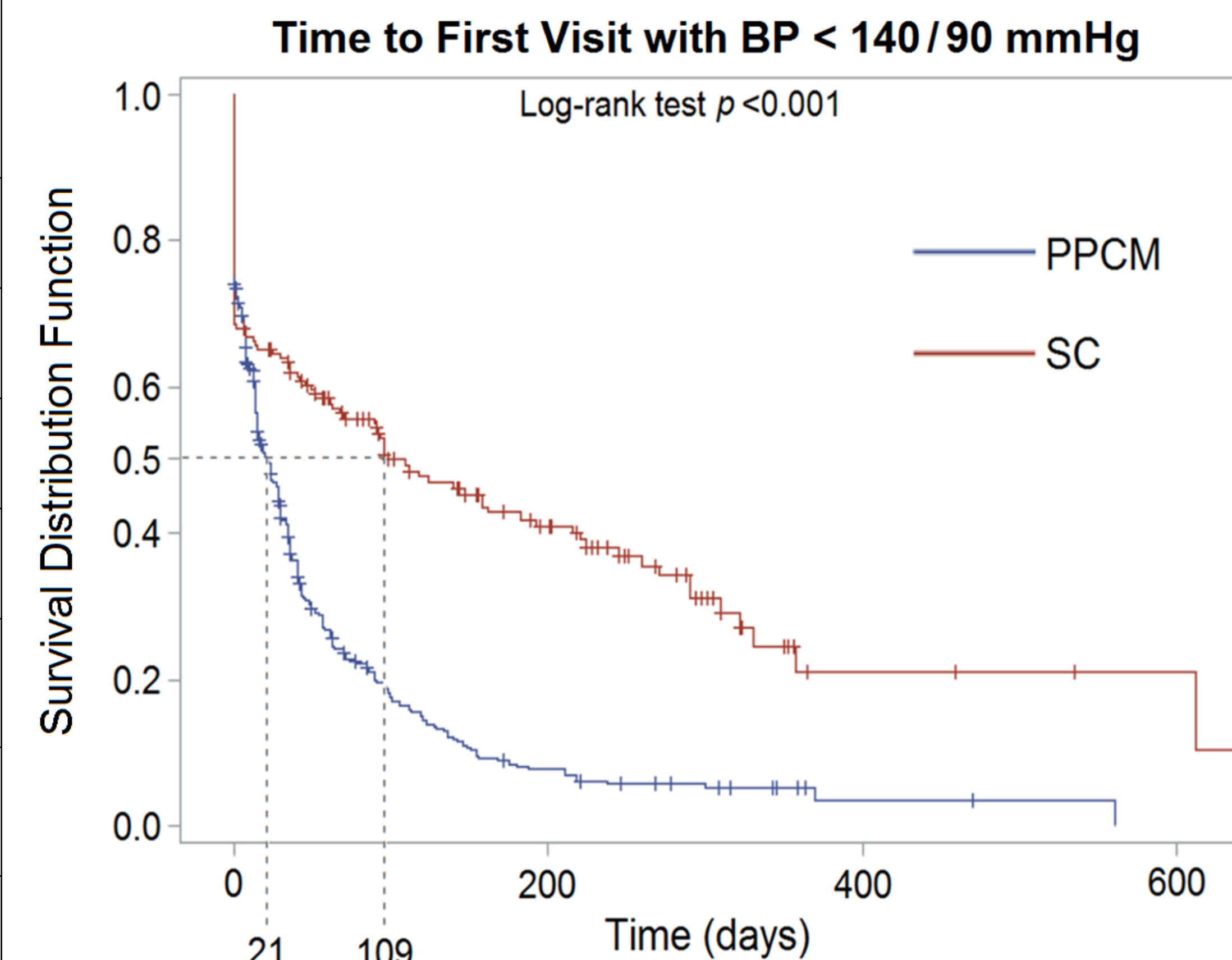
Time to goal was defined as number of days from the initial visit to the first visit with a BP <140/90. The proportion of patients at goal (<140/90) was determined by using the last BP measured during the 12-month period.

The median interquartile range (IQR) time to goal for each group calculated using time-to-event analysis. Univariate and bivariate analyses performed for baseline.

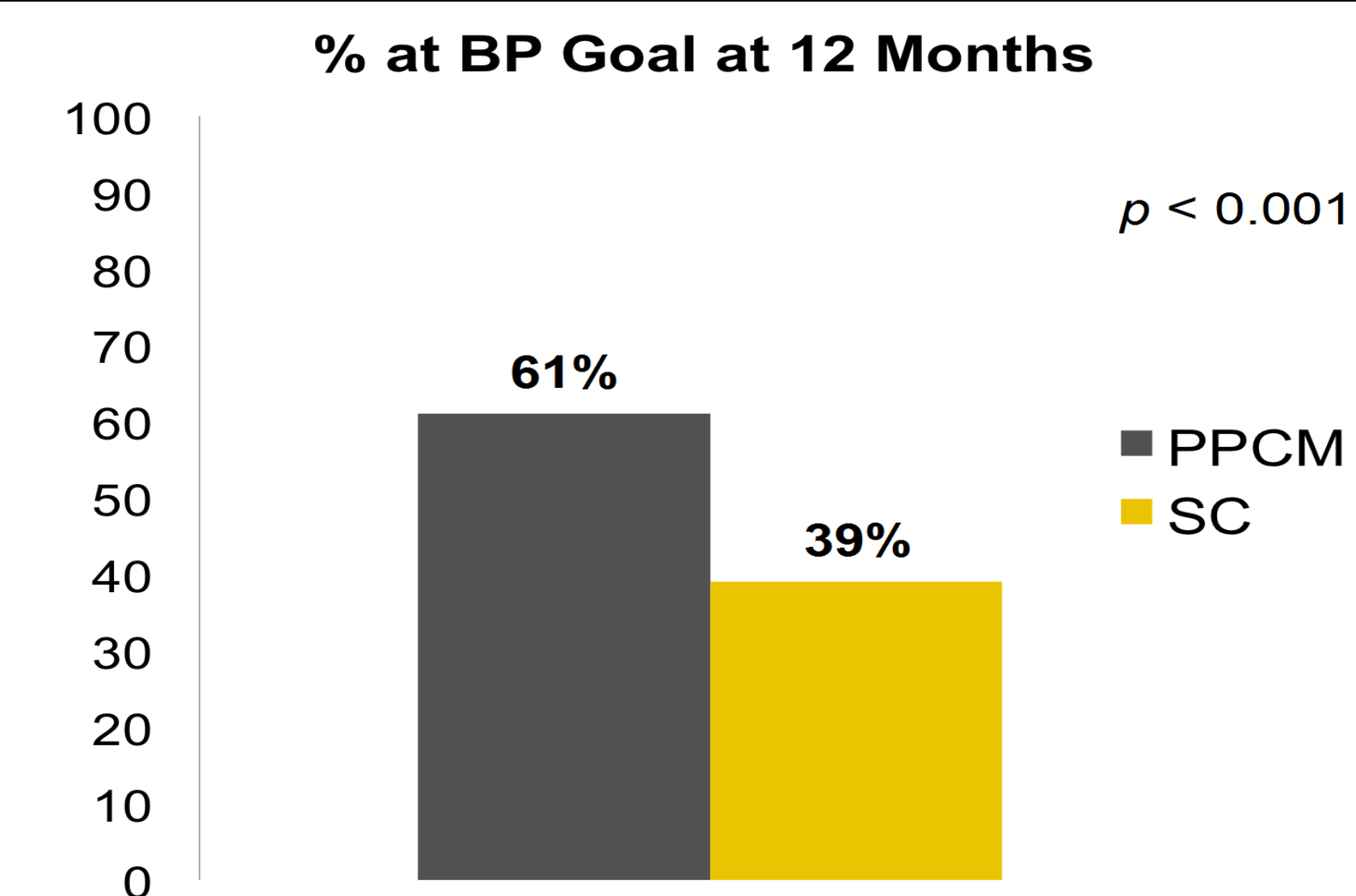
Results

Baseline Demographics			
Characteristic	PPCM n=350	SC n=172	<i>p</i> value
Age (y, SD)	48.0 (10.6)	50.2 (8.8)	0.018
Female (%)	61	47	0.002
Ethnicity (%)			
▪ Black	76	77	0.612
▪ White	20	18	
▪ Hispanic	2	2	
▪ Other	2	3	
BMI (SD)	33.4 (8.3)	31.9 (8.1)	0.059
Diabetes (%)	21	27	0.136
CAD (%)	7	23	< 0.001
Smoker (%)	37	40	0.494
Initial SBP (mmHg, SD)	149.8 (21.9)	153.5 (31.6)	0.120
Initial DBP (mmHg, SD)	95.2 (14.3)	91.3 (17.3)	0.007
SBP = systolic blood pressure; DBP = diastolic blood pressure, CAD = coronary artery disease			

Endpoints			
	PPCM	SC	<i>p</i> value
# Days to goal BP	21 (95% CI 15-28, IQR 0-63)	109 (95% CI 61-182; IQR 0-330)	< 0.001
# Visits to goal BP (SD)	2.5 (1.7)	1.9 (1.3)	0.002



Results



Conclusions

Despite a higher mean initial DBP, patients managed by the PPCM achieved their goal BP faster than those managed by SC. The rapid time to BP goal was associated with a slightly higher number of visits in the PPCM group compared with the SC group. Additionally, a significantly higher proportion of PPCM patients were still well-controlled after the 12-month follow-up period. This study is limited by the retrospective design, especially with regard to BP measurement technique, and patient selection that resulted in unequal groups. However, this study describes the current status of hypertension control in a predominantly African-American, uninsured population. In conclusion, intense pharmacist-physician hypertension management is associated with earlier and more sustained BP control compared to standard care.

Acknowledgements

VCU Office of Health Innovation Research Committee