

Real-World Dosing and Discontinuation of Hypertension Therapies: Insights from a National Pharmacy Database



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Why This Matters

- Nearly half of U.S. adults have hypertension (HTN), yet blood pressure control remains suboptimal^{1,2}.
- 2025 AHA/ACC Clinical Practice Guidelines for Prevention, Detection, Evaluation, and Management of High Blood Pressure (BP) in Adults^a emphasizes that “as BP is regulated by several complementary biological systems, most patients require **≥2 antihypertensive medications to achieve BP control**”³.
- Real-world dosing and treatment patterns after treatment initiation with 2 or more classes are **poorly characterized**⁴.

Study Aim

This study aims to describe patient characteristics and treatment patterns, specifically dosing and treatment discontinuation, among new users of antihypertensive medications using real-world pharmacy data.

Study Design

- This real-world evidence study is a retrospective cohort study that utilized **national pharmacy dispensing data** from a retail pharmacy chain between January 1, 2021 – June 30, 2025.
- All patients in the study were required to meet the following criteria:
 - Adults with essential HTN **documented within pharmacy prescription**
 - Initiated on **≥2 distinct antihypertensive medication classes indicated for essential HTN**
 - ≥12 months of baseline history and follow-up within the dispensing database
 - New users with no dispensing of the index class in prior 12 months
- Treatment pattern outcomes** from this study include:
 - Antihypertensive medication class utilization
 - 12-month discontinuation^b
 - Dose maximization^c at 12-months or discontinuation
 - Mean time to discontinuation among treatment discontinuers
- Pairwise test p-values are included with MRA as reference.

Baseline Patient Characteristics

Patient Demographics at First Agent Fill of Multi-Drug Regimen			Comorbid Therapies at First Agent Fill of Multi-Drug Regimen		
New Users	n=	4,274,238	Lipid Modifying		59.3%
Age	Mean (SD)	62.9 (13.7)	Antidiabetics		30.1%
Sex	Female	53.2%	Proton Pump Inhibitors		26.5%
	Male	46.8%	Prescriber Type by Agent, n = 9,480,621		
Payer Type	Medicare	44.0%	Primary Care Physician		51.3%
	Commercial	38.9%	Advanced Practice Providers ^e		24.5%
	Medicaid	8.2%	Cardiology		13.3%
	Other ^d	8.9%	Other Prescribers ^f		10.9%

Results

Figure 1: Antihypertensive Medication Class Utilization (%) *p<0.001

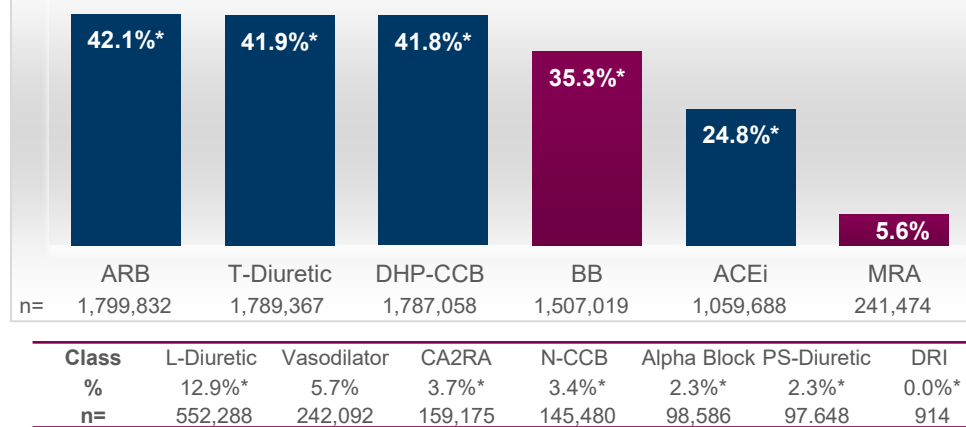


Figure 1-4 Legend: ■ First-line Classes ■ Later-line Classes

Figure 2: 12-Month Discontinuation (%) *p<0.001

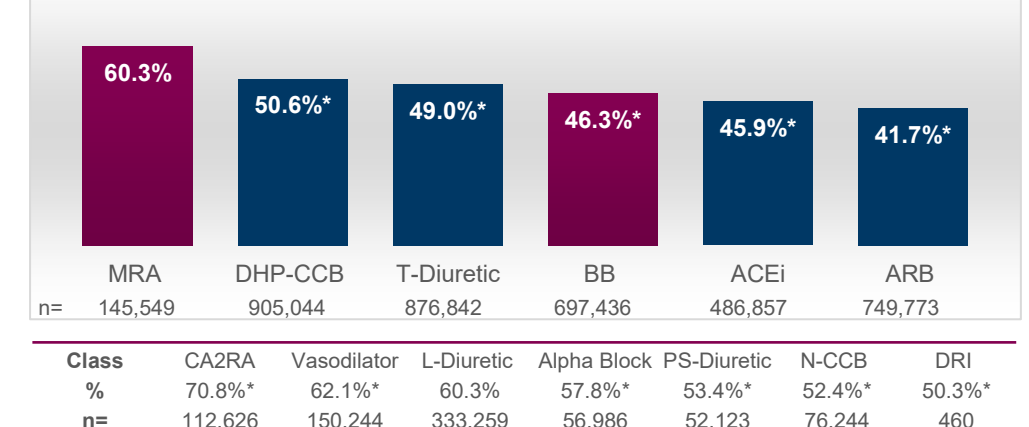


Figure 3: Dose Maximization at 12-Months or Discontinuation (%) *p<0.001

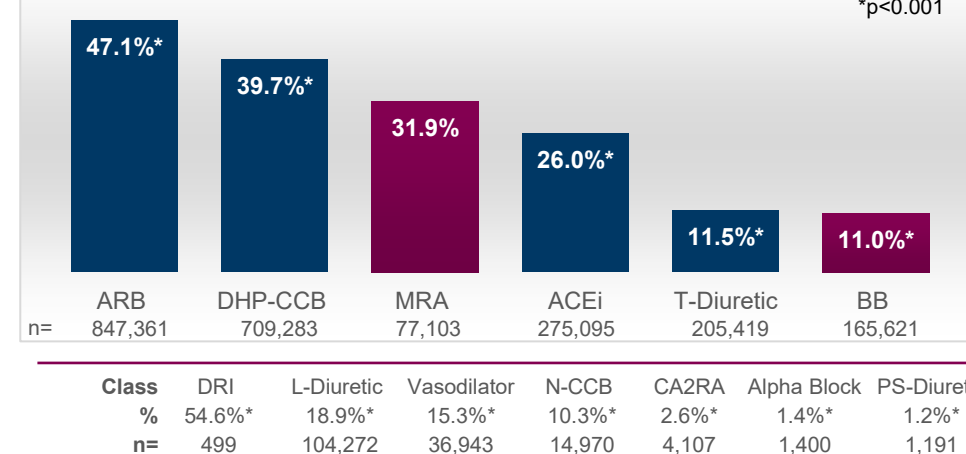
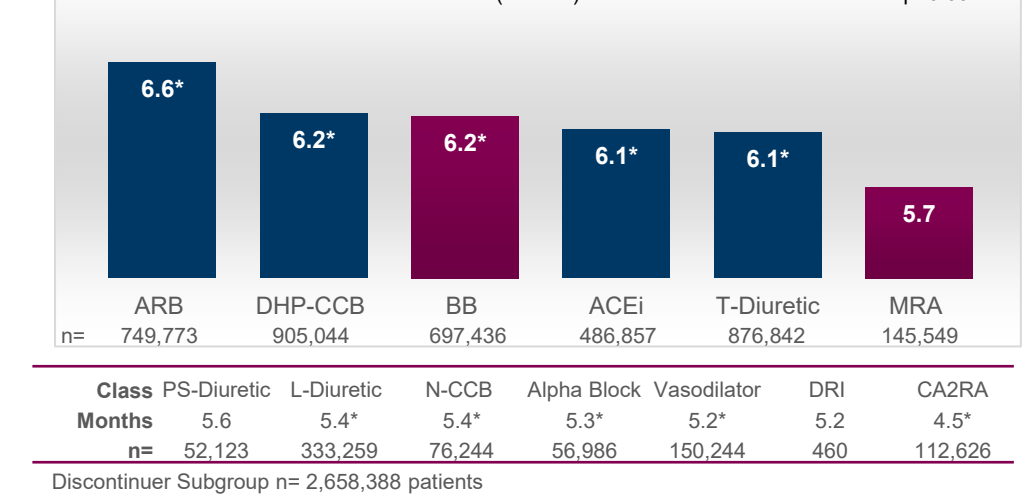


Figure 4: Mean Time to Discontinuation Among Discontinuers (Months) *p<0.001



Key Takeaways

- In patients newly prescribed **≥2 antihypertensive medication classes**, a majority of the guideline^a recommended first-line antihypertensive classes were utilized most often, with ARBs being the highest at 42.1%. A commonly used later-line antihypertensive class, BB, was fourth most utilized at 35.3% ahead of first-line ACEi while MRAs had lower utilization at 5.6%.
- Discontinuation of antihypertensive medications is common**, with MRAs being the most discontinued class at 60.3% compared to first-line medication classes, namely DHP-CCB (the next highest at 50.6%), T-Diuretics, ACEi, and ARB, and commonly used later-line antihypertensive medication classes with the next highest being BB at 46.3%. Medication adherence is critical for HTN management so further research on cause of medication discontinuation is needed.
- In routine clinical practice, ARBs were the most frequently dose maximized first-line antihypertensive medication class at 47.1%. Other previously noted first-line and commonly used later-line medication classes were less frequently prescribed at maximized doses with MRAs at 31.9% and BB at 11% which may reduce expected therapeutic benefits in systolic BP reduction.

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