

BACKGROUND & OBJECTIVES

- Hypertension (HTN) affects ~120 million individuals in the U.S.
- Black Americans** have a **higher prevalence** of HTN and **lower HTN control** than Whites
- Previous studies **report disparities in anti-hypertensive** (anti-HTN) use
- However, it is unclear whether such disparities in choice or intensity of anti-HTN therapy exist from treatment initiation or evolve over time

Therefore, we examined the disparity in treatment intensity at treatment onset, and whether such disparities could be explained by clinical factors (BP, comorbidities, etc.)

METHODS

Overview & Data Source

- Retrospective cross-sectional study using OneFlorida linked claims + EHR data (2013–2021)

Study Population

- Florida Medicaid- or Medicare-insured adults (age ≥18 y) with newly-treated HTN, defined as having a HTN diagnosis (ICD-9/10 401.X & I10) and prescribed ≥1 first-line anti-HTN during the study period, with no fills during the year prior

Outcome

- Total Therapeutic intensity score (TTIS): total daily dose (TDD) divided by the recommended max TDD, summed across the entire regimen

Statistical Analysis

- Generalized linear models to estimate the differences in TTIS by sex, race and ethnicity
- Adjusted analysis controlled for demographics and clinical factors: blood pressure (SBP & DBP), body mass index (BMI), CV-related comorbidities, with multiple imputation of missing BP (5.5%) and BMI (19.5%) values

Sensitivity Analysis

- Stratification by insurer
- More restrictive EHR-claims linkage approach (requiring NPI linkage) to ensure BP measurement accurately reflected prescribing visit BP
- Exclusion of patients with other indications (HF, CHD, AF) for anti-HTN therapy

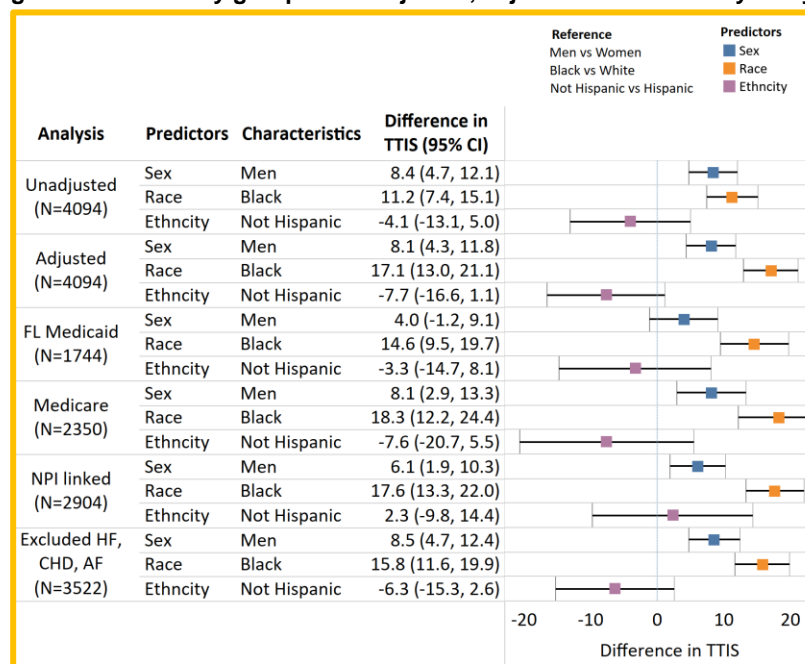
CONCLUSION

We observed disparities in treatment intensity by sex and race that were not explained by differences in clinical factors. Additional research is needed to understand the discordance observed between known worse BP control and outcomes among Black individuals despite apparent greater treatment intensity at therapy onset.

Table. Baseline Characteristics

Characteristics	N (%) or mean ± SD
No. of patients	4,094
Age, years	58.6 ± 18.5
Female	2,358 (57.6%)
Race (self-reported)	
White	2,320 (56.7%)
Black	1,550 (37.9%)
Asian	23 (0.6%)
Other	201 (4.9%)
Hispanic	219 (5.4%)
Insurer	
Florida Medicaid	1,744 (42.6%)
Medicare	2,350 (57.4%)
No. of anti-HTN	
1	2991 (73.1%)
2	821 (20.1%)
≥ 3	282 (6.8%)
Office systolic BP, mmHg	140.6 ± 20.2
Office diastolic BP, mmHg	82.4 ± 12.2
Mean TTIS	
Overall	0.64 ± 0.60
FL Medicaid	0.56 ± 0.53
Medicare	0.71 ± 0.64

Figure. Mean TTIS by group for unadjusted, adjusted and sensitivity analyses



- 4,094 patients (mean age 58.6 ± 18.5 y; 57.6% female; 56.7% White) were included (Table)
- In **unadjusted analyses**, mean TTIS was 8.4% higher for men vs women; 11.2% higher for Black vs. White individuals; and, not significantly different for Hispanic vs. non-Hispanic individuals
- Adjusted analyses** revealed similar findings (Figure) comparing sexes, a more pronounced difference comparing Black vs. White individuals, and possible evidence of a lower mean TTIS among Hispanics than non-Hispanics; and results were generally robust across several sensitivity analyses

DISCUSSION

- To the best of our knowledge this is the first study to look at anti-HTN treatment regimen intensity at therapy onset
- In unadjusted analyses, we observed greater initial treatment intensity in men and among Black individuals, whereas there was no difference by ethnicity in this study
- These disparities persisted or, in some cases, increased, after adjusting for important clinical factors** likely to influence treatment regimens, including BP, age, and a number of CV-related comorbidities (e.g., CKD)
- These disparities appeared to be primarily a function of differences in dosing monotherapy versus greater use of initial combination therapy
- We observed **greater treatment intensity in Black individuals** at therapy onset and yet prior reports indicate undertreatment in Black individuals later in the course of the disease; thus, greater research is needed to understand how these initial disparities evolve over time

LIMITATIONS

- TTIS offers a way to standardize doses across regimens with different anti-HTN agents, but is an imperfect measure of therapeutic equivalency and some of the observed difference may be an artifact of differences in drugs likely to be started, particularly between Black and White individuals
- We used robust methods to identify new-user cohort using claims linked EHR data but could not definitively measure indication (e.g., HTN vs. other CV disease) for the anti-HTN; nevertheless, comorbidity adjustment did not alter findings)
- Also, we conducted sensitivity analysis by excluding patients with HF, CHD and AF
- These findings may have limited generalizability non-publicly insured populations

