



Jenny Y Mei MD, Audra Fain MD, Kate Corry-Saavedra MD, Tina A Nguyen MD, Thalia Mok MD, Aisling Murphy MD
David Geffen School of Medicine, University of California, Los Angeles, CA

Background

- Postpartum hypertension (HTN) is one of the most frequent reasons for readmissions and has been associated with developing chronic hypertension.
- Ongoing research is investigating the optimal anti-HTN regimen postpartum.

Objective

- To compare labetalol and nifedipine in postpartum hypertension outcomes.

Study Design

- A retrospective cohort study of birthing patients with peripartum HTN at a quaternary care center over 2 years.
- This study is part of an ongoing postpartum quality improvement project that entails lower BP targets and universal remote BP monitoring.
- Inclusion criteria: delivery at the study institution, diagnosis of HTN disorder of pregnancy, and discharge on either labetalol or nifedipine. Patients discharged on both medications were excluded.
- Primary outcome: postpartum readmission for HTN.
- Secondary outcome: persistent hypertension at 6 weeks postpartum defined by continuation of anti-hypertensives (anti-HTN).
- Labetalol was compared to nifedipine for both outcomes.

Results

- Out of 6410 deliveries between April 2022-April 2024, 2019 (31.5%) were affected by HTN disorder of pregnancy.
- Total 541 (26.8%) discharged on a single medication, 105 (19.4%) labetalol and 436 (80.6%) nifedipine.
- In baseline characteristics between groups, labetalol was associated with higher rate of chronic hypertension (50.5% vs 17.9%, $p < 0.001$) and prenatal aspirin use (62.9% vs 46.8%, $p = 0.003$), and lower rate of cesarean delivery (34.3% vs 48.6%, $p = 0.008$).
- After adjusting for these 3 characteristics, labetalol use had significantly higher odds of readmission compared to nifedipine (adjusted odds ratio [aOR], 8.69; 95% confidence interval [CI], 1.45-52.11; $p = 0.02$).
- Patients on labetalol compared to nifedipine also had significantly higher odds of needing to continue anti-HTN medication past 6 weeks postpartum (aOR, 2.78; 95% CI, 1.62-4.79; $p < 0.001$).

Conclusion

- Labetalol was significantly associated with higher odds of postpartum readmission and persistent hypertension at 6 weeks postpartum compared to nifedipine.
- Further research is needed to help tailor anti-HTN medications to clinical needs of high-risk patients.

Labetalol was associated with higher odds of postpartum readmission and persistent hypertension at 6 weeks postpartum compared to nifedipine.



Questions? Email Dr. Jenny Mei at jennyangmei@gmail.com

Table 1: Baseline Characteristics Between Labetalol and Nifedipine

Baseline Characteristic	Labetalol (n=105)	Nifedipine (n=436)	P-value
Maternal age in years (mean±SD)	34.0±5.8	34.3±5.6	0.59
Maternal age 35 and above	47 (44.8%)	220 (50.5%)	0.30
Race/Ethnicity			
Asian	17 (16.2%)	74 (17.0%)	0.90
Black	12 (11.4%)	58 (13.3%)	
Caucasian	35 (33.3%)	151 (34.6%)	
Hispanic/Latina	28 (26.7%)	112 (25.7%)	
None of the above/ Mixed Race	13 (12.4%)	41 (9.4%)	
Nulliparity	62 (59.0%)	291 (66.7%)	0.14
BMI (kg/m ²) at delivery (mean±SD)	32.3±7.9	30.8±6.9	0.05
Obese (>=30 kg/m ²)	59 (56.2%)	232 (46.8%)	0.08
Gestational age (mean± SD)	37w1d±18d	37w5d±16d	0.01
Preterm delivery	75 (28.6%)	87 (20.0%)	0.05
Chronic hypertension	53 (50.5%)	78 (17.9%)	<0.001
Pre-gestational diabetes mellitus	9 (8.6%)	34 (7.8%)	0.79
Aspirin use	66 (62.9%)	204 (46.8%)	0.003
Insurance			
Private	78 (74.3%)	331 (75.9%)	0.73
Public or No Insurance	27 (25.7%)	105 (24.1%)	
Mode of delivery			
Vaginal delivery	69 (65.7%)	224 (51.4%)	0.008
Cesarean delivery	36 (34.3%)	212 (48.6%)	
Chorioamnionitis	9 (8.6%)	41 (9.4%)	0.79
Postpartum hemorrhage	15 (14.3%)	87 (20%)	0.18
Postpartum LOS in days (mean± SD)	3.0±2.3	2.9±1.3	0.57
Hypertension diagnosis at discharge			
Gestational hypertension	15 (14.3%)	164 (37.6%)	<0.001
Preeclampsia without severe features	16 (15.2%)	94 (21.6%)	
Preeclampsia with severe features or HELLP	36 (34.3%)	135 (31%)	
Chronic hypertension only	38 (36.2%)	43 (9.9%)	
Proteinuria	39 (37.1%)	176 (40.4%)	0.54
Remote monitoring compliance	81 (77.1%)	362 (83%)	0.16

Table 2: Hypertension Outcomes Between Labetalol and Nifedipine

Risk Factor	Labetalol (n=105)	Nifedipine (n=436)	P from Unadjusted X ² Test	Adjusted odds ratio (95% CI)
Postpartum readmission	5 (20.8%)	2 (2.4%)	0.001	8.69 (1.45-52.11)
Postpartum ED visit	2 (8.7%)	6 (6.9%)	0.77	1.03 (0.17-6.23)
Postpartum ED visit or readmission	7 (6.7%)	8 (1.8%)	0.007	2.84 (0.91-8.86)
Outpatient Medication Changes	32 (30.5%)	117 (26.8%)	0.45	1.03 (0.62-1.70)
Hypotension	3 (3.1%)	21 (5.3%)	0.37	0.65 (0.18-2.32)
On anti-HTN at 6 weeks postpartum	48 (50%)	87 (22.6%)	<0.001	2.33 (1.39-3.92)
Continuing anti-HTN past 6 weeks postpartum	43 (44.8%)	64 (16.6%)	<0.001	2.78 (1.62-4.79)