Discharge on Labetalol Lowers 6 Week Postpartum Diastolic Blood Pressure Compared to Nifedipine

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Background

- Hypertensive disorders of pregnancy (HDP) affect 10% of pregnancies and are associated with increased long-term cardiovascular risks
- Improved postpartum blood pressure (BP) control after HDP may decrease long-term risks, but the most effective antihypertensive regimen remains unclear

Objective

- Compare average 6-week postpartum visit BP in patients with HDP or chronic hypertension (CHTN)

Study Design

- Retrospective cohort study
- Inclusion: HDP or CHTN, discharged on nifedipine or labetalol
- Exclusion: Discharge on 0 or >1 antihypertensive
- Primary outcome: mean self-reported systolic and diastolic BP at 6 weeks following delivery
- Secondary outcomes: 6-week postpartum BP ascertainment, emergency department (ED) visits, hospital readmission, and hypotension

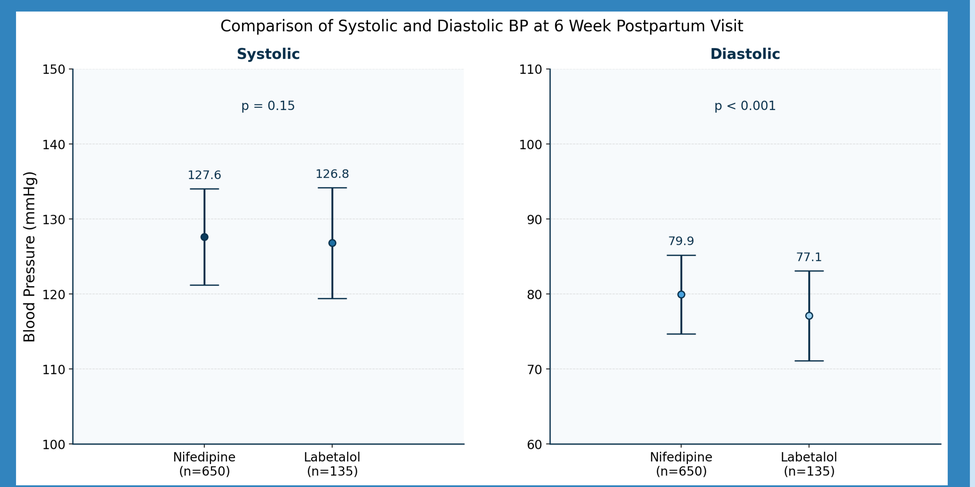
Results

- 785 pregnancies included: 650 discharged on nifedipine (N), 135 on labetalol (L)
- Average 6-week systolic BP did not differ by agent, but (L) was associated with significantly lower 6-week diastolic BPs than (N)
- Rates of documented BP measurement, ED presentations and hospital readmissions did not significantly differ by antihypertensive agent

Conclusion

- (L) had a decrease in diastolic BP at 6 weeks postpartum; no other metrics differed significantly
- Both agents are acceptable antihypertensives
- Clinical significance of mildly decreased diastolic BP remains unclear

Discharge on **labetalol** for hypertensive disorders of pregnancy was associated with **lower diastolic blood pressure** at 6 weeks **postpartum** compared to nifedipine



Questions?
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Table 1: Demographics and Obstetric Outcomes

	Total (N=785)	Nifedipine (n=650)	Labetalol (n=135)	p-value
Baseline Characteristics				
Maternal age (years), median (IQR)	36.0 (32, 39)	36 (32, 39)	36 (32, 39)	0.57[1]
Advanced maternal age	467 (59.5%)	387 (59.5%)	80 (59.3%)	0.95[2]
Race/Ethnicity				
Asian	132 (16.8%)	110 (16.9%)	22 (16.3%)	
Black	90 (11.5%)	78 (12.0%)	12 (8.9%)	
Hispanic/Latina	229 (29.2%)	190 (29.2%)	39 (28.9%)	0.90[2]
White	145 (18.5%)	117 (18.0%)	28 (20.7%)	
Mixed	36 (4.6%)	29 (4.5%)	7 (5.2%)	
Other	153 (19.5%)	126 (19.4%)	27 (20.0%)	
BMI at delivery (kg/m^2), median (IQR)	31.6 (27.8, 36.2)	31.2 (27.6, 36.0)	32.5 (28.9, 38.3)	**0.02**[1]
Obesity (BMI≥30)	457 (58.2%)	367 (56.5%)	90 (66.7%)	**0.03**[2]
Gravidity, median (IQR)	2 (1, 3)	2 (1, 3)	2 (1, 3)	0.06[1]
Parity, median (IQR)	1 (1, 2)	1 (1, 2)	1.0 (1, 2)	0.12[1]
Nulliparity, n (%)	590 (75.2%)	498 (76.6%)	92 (68.1%)	**0.04**[2]
Chronic hypertension, n (%)	182 (23.2%)	114 (17.6%)	68 (50.7%)	**<0.001**[2]
Insurance				
Private	495 (69.7%)	408 (69.7%)	87 (69.6%)	
Public	187 (26.3%)	153 (26.2%)	34 (27.2%)	0.88[2]
Other	28 (3.9%)	24 (4.1%)	4 (3.2%)	
Hypertensive diagnosis at discharge	259 (33.0%)	242 (37.2%)	17 (12.6%)	
Gestational hypertension	169 (21.5%)	144 (22.2%)	25 (18.5%)	
Preeclampsia without severe features	246 (31.3%)	200 (30.8%)	46 (34.1%)	**<0.001**[1]
Preeclampsia with severe features	1 (0.1%)	0 (0.0%)	1 (0.7%)	
HELLP	110 (14.0%)	64 (9.8%)	46 (34.1%)	
Chronic hypertension only				
Obstetric Outcomes				
Mode of Delivery				
Vaginal Delivery	396 (50.5%)	320 (49.3%)	76 (56.3%)	
Operative Vaginal Delivery	20 (2.6%)	17 (2.6%)	3 (2.2%)	0.34[1]
Cesarean Delivery	368 (46.9%)	312 (48.1%)	56 (41.5%)	
Gestational age at delivery (weeks), median (IQR)	37 (37, 39)	38 (37, 39)	37 (37, 38)	**0.01**[3]
Preterm birth	162 (20.7%)	131 (20.2%)	31 (23.0%)	0.47[1]
Birthweight (grams), median (IQR)	2970.0 (2553.5, 3362.5)	3000.0 (2569.9, 3375.0)	2830.0 (2460.0, 3205.0)	**0.01**[3]
Total length of stay (days), median (IQR)	4 (3, 5)	4 (3, 5)	4 (3, 5)	0.82[3]
Postpartum length of stay (days), median (IQR)	3 (2, 4)	3 (2, 4)	3 (2, 3)	0.55[3]

[1]Wilcoxon rank-sum; [2]Chi-Square; [3]Fisher's Exact
Data presented as n (%ile) unless otherwise noted
P-value significance was set at p<0.05 and significant values are bolded.

Table 2: 6-week Postpartum Outcomes

	Total (N=785)	Nifedipine (n=650)	Labetalol (n=135)	p-value
BP ascertained at 6-week postpartum visit	579 (73.8%)	488 (75.1%)	91 (67.4%)	0.07[1]
Average systolic BP at 6-week postpartum visit (mmHg), mean (SD)	127.46 (6.59)	127.60 (6.41)	126.79 (7.38)	0.15[2]
Average diastolic BP at 6-week postpartum visit (mmHg), mean (SD)	79.46 (5.49)	79.94 (5.25)	77.10 (5.98)	**<0.001**[2]
ED presentation for elevated BP	11 (1.4%)	8 (1.2%)	3 (2.2%)	0.41[3]
Readmission for elevated BP	17 (2.2%)	11 (1.7%)	6 (4.4%)	0.10[3]

[1]Chi-Square; [2]Wilcoxon rank-sum; [3]Fisher's Exact
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