Hypertensive Control and Delivery Outcomes with Use of Oral Antihypertensives in Pregnancy for Non-severe Hypertension

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Objective

- Hypertension in pregnancy is associated with increased rates of adverse maternal and fetal outcomes both acute and long term.
- This study aims to determine if there are differences in pregnancy outcomes and hypertension control for patients on single versus multiple antihypertensive maintenance drug regimens.

Study Design

- Retrospective cohort study of adult pregnant patients with a diagnosed hypertensive disorder requiring antenatal antihypertensive maintenance medications started by 34 weeks GA or for a minimum of 2 weeks who received prenatal care and delivered at a single academic institution between January 2013 and August 2023.
- Exclusion criteria were pregnancies of known anomalous fetus and multifetal gestations.
- Patients were then stratified by type and number of medications prescribed.
- Chi-squared, Fischer's exact, and student t-test analyses were performed.

References

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Results

Table 1. Hypertension Control and Pregnancy Outcomes for Patients Requiring Antepartum Antihypertensive Maintenance Medications

	Single drug regimen (n=96)	Multiple drug regimen (n=16)	P-value
Antepartum			
Systolic blood pressure: 1st prenatal visit (mmHg)	131.2 (± 15.9)	142.3 (± 25.1)	0.13
Diastolic blood pressure: 1st prenatal visit (mmHg)	79.6 (± 11.4)	86.6 (± 14.2)	**0.04**
Mean arterial pressure: 1st prenatal visit (mmHg)	96.8 (± 12.2)	105.1 (± 17.7)	**0.02**
Medication initiation during pregnancy	5 (13)	5 (56)	**0.01**
Inpatient admission for blood pressure control	22 (26)	11 (69)	**0.002**
Compliance issues with medication	9 (11)	3 (19)	0.41
Change in hypertension diagnosis antepartum	34 (39)	12 (75)	**0.01**
Delivery			
Gestational age at delivery (weeks)	36.8 (± 2.7)	32.6 (± 3.7)	**<0.001**
Systolic blood pressure: delivery admission (mmHg)	144.9 (± 2.6)	161.7 (± 22.1)	**0.004**
Diastolic blood pressure: delivery admission (mmHg)	84.9 (± 13.4)	98.2 (± 20.1)	**<0.001**
Mean arterial pressure: delivery admission (mmHg)	104.9 (± 14.4)	119.4 (± 19.0)	**<0.001**
Change in systolic BP (mmHg)	12.7 (± 22.7)	19.4 (± 29.5)	0.31
Change in diastolic BP (mmHg)	3.8 (± 13.3)	11.6 (± 21.1)	0.17
Fetal placental complications	8 (9)	4 (27)	0.06
Fetal growth restriction	3 (3)	2 (13)	0.15
Oligohydramnios	3 (3)	2(13)	0.15
Medically indicated preterm delivery < 37 weeks	33 (34)	13 (81)	**<0.001**
Medically indicated preterm delivery < 35 weeks	16 (17)	12 (75)	**<0.001**
Cesarean delivery	55 (57)	16 (100)	**<0.001**
Length of stay for mother (days)	3.3 (± 2.0)	7.0 (± 5.7)	**0.02**

*Data presented as N(%) or mean ± SD

Results

- 112 patients met inclusion criteria.
- 96 (85.7%) were prescribed a single drug regimen: 71 (63.4%) labetalol, 2 (1.8%) metoprolol, 11 (9.8%) nifedipine, 12 (10.7%) other; 16 (14.3%) were taking a combination of medications.
- There were no differences in age, obesity, race/ethnicity, insurance status, hypertensive diagnosis, maternal co-morbidities, aspirin or tobacco use.
- More women requiring polytherapy had more history of preeclampsia versus those on monotherapy (89% vs 28%, p<0.001), along with higher diastolic BP and MAP at prenatal visit.
- Patients on multidrug regimens had higher rates of change in hypertensive diagnosis (i.e. chronic to preeclampsia) (p=0.01), inpatient admission for blood pressure control (p=0.002), higher BP and MAP at delivery (p<0.001), earlier gestational age at delivery (p<0.001), rates of medically indicated PTD (p<0.001), cesarean delivery (p<0.001), and longer maternal hospitalization (p=0.02), as compared to the monotherapy group.

Conclusion

- Requiring multidrug antihypertensive regimens may be a proxy for pregnancies with poor hypertensive control, and furthermore a marker for poor maternal outcomes.
- Close supervision and attention to these patient populations may be warranted to optimize their pregnancy outcomes.