

Association between inpatient labetalol use during hospitalization for delivery and neonatal blood glucose and heart rate

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Background

- Outpatient β blocker use is associated with neonatal hypoglycemia and bradycardia.
- Aim: Estimate the association between inpatient labetalol vs hydralazine/nifedipine administration within 96 hours before delivery, and neonatal blood glucose and heart rate.

Methods

- Retrospective multi-institutional cohort study (2015- 2022)
- Study Population: Parturients treated with antihypertensives during delivery admission.
- Primary Outcome: Lowest neonatal blood glucose and heart rate within 7 days post delivery.
- Statistical Methods: Associations estimated in a subset of patients matched on home β blocker use and on an exposure propensity score to account for confounding.

Results

Table 1: Crude vs Matched Neonatal Outcome Comparisons Between Maternal Labetalol and Nifedipine/Hydralazine

	Unmatched (n=1,130)		
	Labetalol (n=1029)	Nifedipine/Hydralazine (n=101)	Crude difference in means (95% CI)
Lowest blood glucose 7 days post-delivery (mg/dl), mean (SD)	45.0 (14.3)	46.5 (14.6)	-1.4 (-4.4, 1.5)
Lowest heart rate 7 days post-delivery (bpm), mean (SD)	112.7 (15.3)	112.7 (13.4)	0 (-2.7, 2.8)
	Matched (n=455)		
	Labetalol (n=354)	Nifedipine/Hydralazine (n=101)	Adjusted difference in means (95% CI)
Lowest blood glucose 7 days post-delivery (mg/dl), mean (SD)	46.1 (14.9)	46.5 (14.6)	-0.6 (-3.8, 2.6)
Lowest heart rate 7 days post-delivery (bpm), mean (SD)	112.5 (17.2)	112.7 (13.4)	-0.3 (-3.5, 2.9)

Conclusion

- We did not detect an association between the inpatient use of labetalol and decreased neonatal blood glucose levels and decreased neonatal heart rate.
- Given our small sample size, caution and **close monitoring of glucose levels and heart rate** in neonates of mothers receiving inpatient labetalol is likely warranted to avoid adverse neonatal outcomes.

