



Antihypertensive Treatment Patterns Before and During Pregnancy Among Women with Chronic Hypertension: A Real-World EHR Study

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BACKGROUND

Clinical guidelines for managing chronic hypertension in pregnancy differ in their recommendations for first-line therapy. Labetalol, nifedipine, and methyldopa are frequently recommended, but guidance varies across organizations. Describing real-world antihypertensive use before pregnancy and across gestation helps clarify current practice and inform future guideline development.

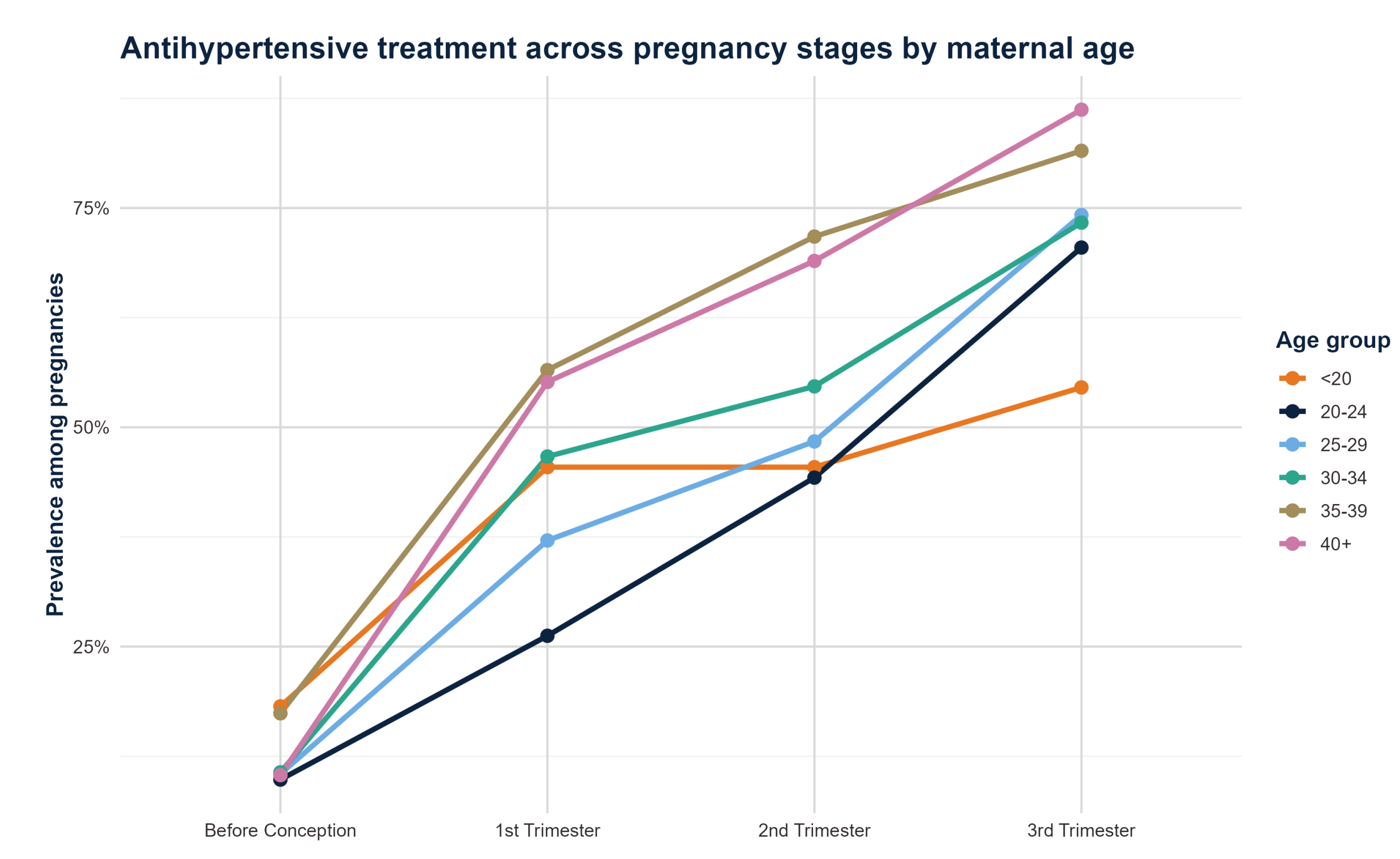
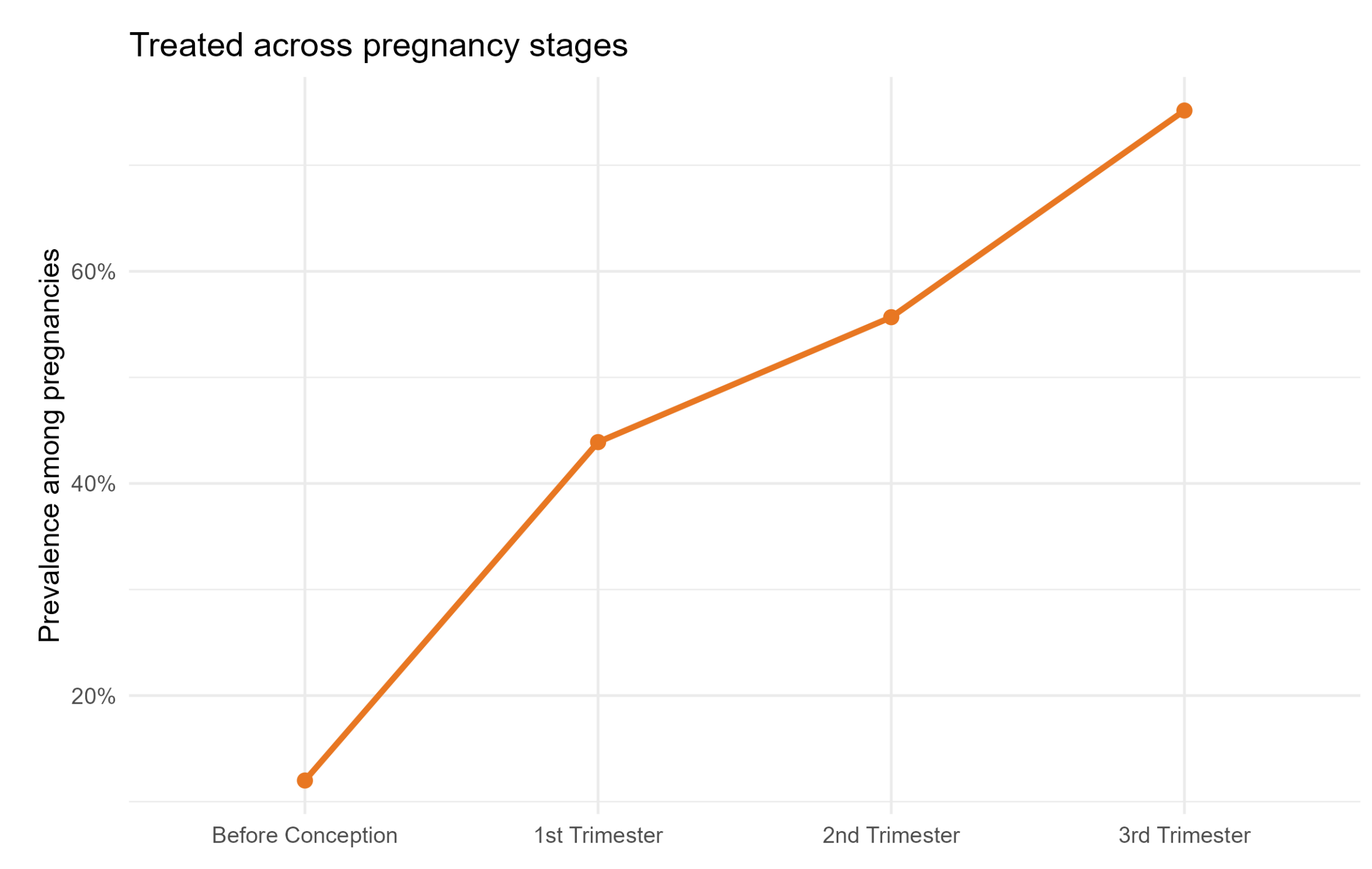
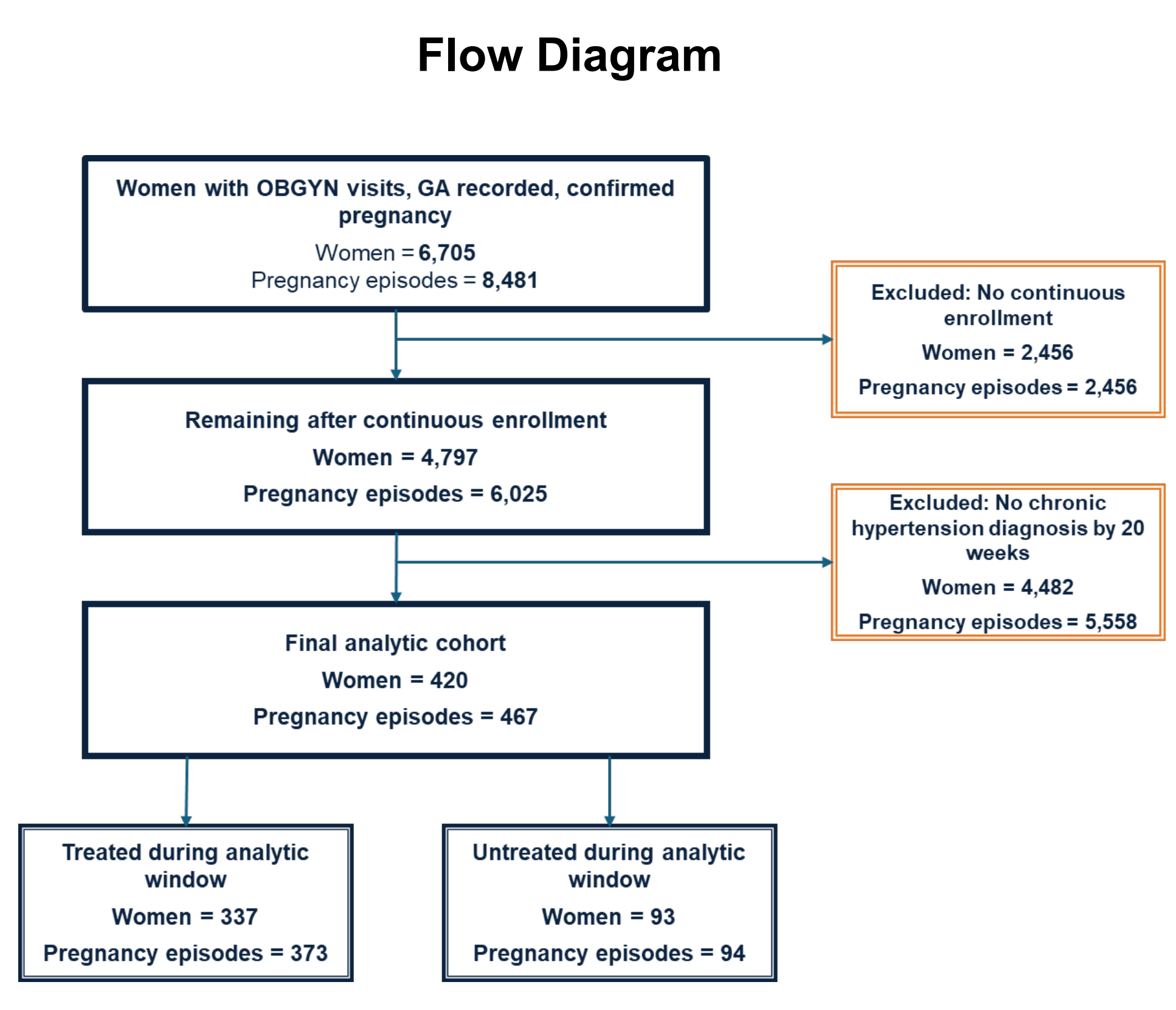
METHODS

- **Study design:** Retrospective cohort study using electronic health record (EHR) data from the University of Birmingham (UAB) EHR databases (2016–2025).
- **Study population:** Pregnant women with chronic hypertension diagnosed before or by 20 weeks' gestation.
 - Confirmed pregnancy with recorded gestational age
 - Continuous enrollment for ≥90 days before conception
 - Chronic hypertension diagnosis before or by 20 weeks
- **Exposure assessment:** Antihypertensive medication use assessed across four periods:
 - Before conception (–90 days to conception)
 - 1st trimester
 - 2nd trimester
 - 3rd trimester
- **Analysis:** Descriptive analyses were used to summarize treatment prevalence, drug utilization, and switching patterns across pregnancy.

Results

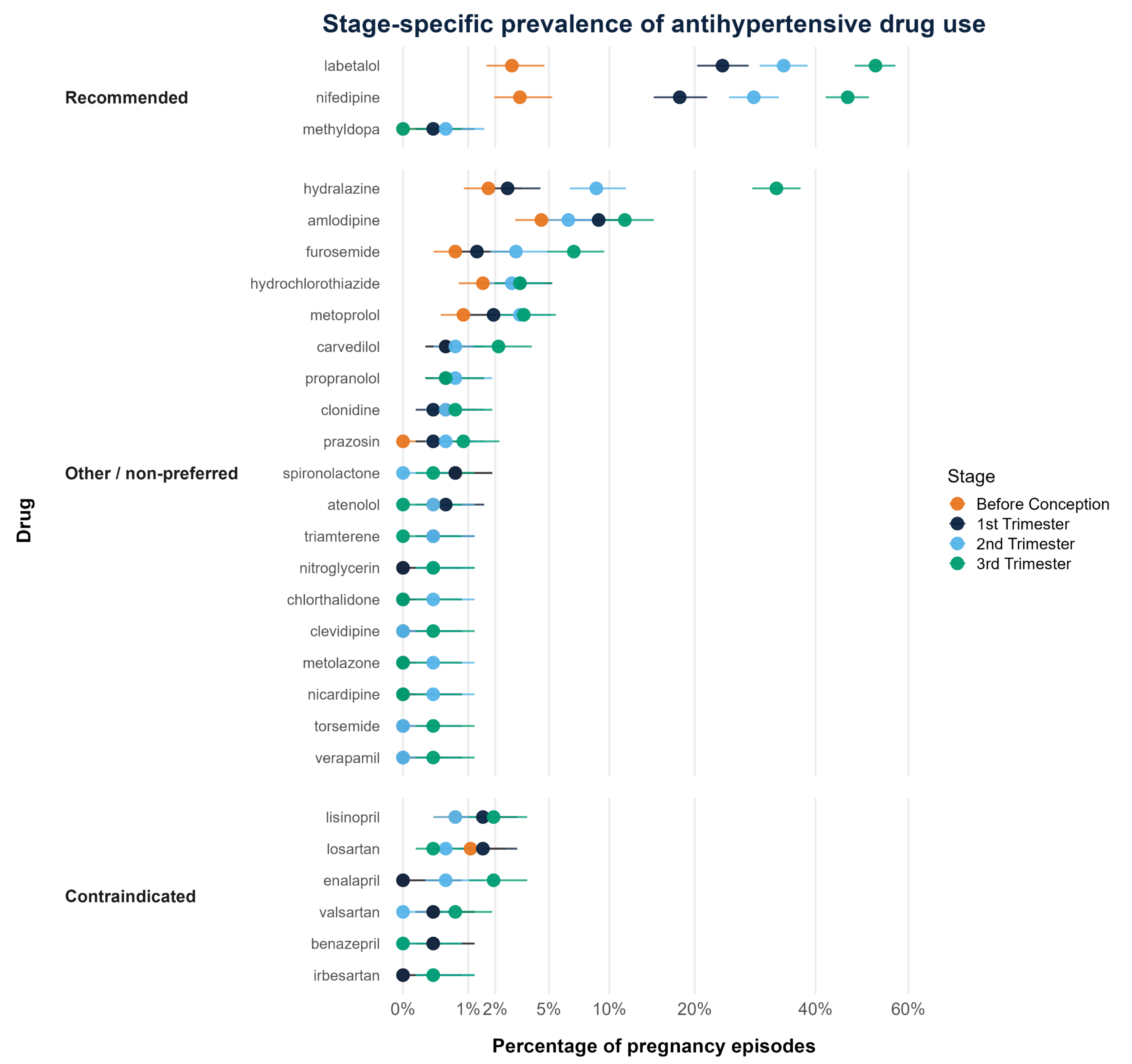
- 467 pregnancies (420 women) included; 79.9% treated, 20.1% untreated.
- Treatment increased from 11% preconception to 75% in 3rd trimester.
- Labetalol and nifedipine were the most commonly used drugs during pregnancy.
- Many women switched from contraindicated drugs before pregnancy to recommended drugs during pregnancy.

RESULT



	Overall N = 467 [†]	Untreated N = 94 [†]	Treated N = 373 [†]
Age at conception	31 (26, 35)	30 (25, 33)	31 (27, 35)
Age group			
<20	11 (2.4%)	5 (5.3%)	6 (1.6%)
20-24	61 (13%)	15 (16%)	46 (12%)
25-29	124 (27%)	25 (27%)	99 (27%)
30-34	150 (32%)	33 (35%)	117 (31%)
35-39	92 (20%)	14 (15%)	78 (21%)
40+	29 (6.2%)	2 (2.1%)	27 (7.2%)
Race			
Black or African American	352 (75%)	63 (67%)	289 (77%)
Hispanic or Latino	26 (5.6%)	9 (9.6%)	17 (4.6%)
Other	10 (2.1%)	2 (2.1%)	8 (2.1%)
White	79 (17%)	20 (21%)	59 (16%)
Ethnic group			
Hispanic/Latino	31 (6.6%)	10 (11%)	21 (5.6%)
Non-Hispanic/Latino	432 (93%)	84 (89%)	348 (93%)
Other	4 (0.9%)	0 (0%)	4 (1.1%)
Marital status			
Married	112 (24%)	23 (24%)	89 (24%)
Other	34 (7.3%)	5 (5.3%)	29 (7.8%)
Single	321 (69%)	66 (70%)	255 (68%)
language			
English	448 (96%)	87 (93%)	361 (97%)
Other	19 (4.1%)	7 (7.4%)	12 (3.2%)
[†] Median (Q1, Q3); n (%)			

Characteristics of included Patients



CONCLUSIONS

- Many women initiated treatment during pregnancy rather than before conception, and antihypertensive treatment increased as pregnancy progressed.
- Women of higher age tend to be more aggressively treated
- Labetalol and nifedipine were the most used medications, but other non-recommended drugs were also prevalent
- Use of contraindicated medications declined during pregnancy.
- Treatment switching across pregnancy was common.