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Background

- ✓ ASMs (Antiseizure Medications) are frequently prescribed during pregnancy.
- ✓ The potential impact on obstetrical outcomes is not fully understood.
- ✓ Understanding the risks associated with ASM use during pregnancy is essential for informed clinical decision-making.

Objective

Evaluate the association between prenatal ASM exposure and the following obstetrical outcomes:

Premature rupture of membranes (PROM), Cesarean section, Placental abruption, Postpartum Hemorrhage, , Pre-eclampsia, Gestational diabetes, and Gestational Hypertension.

METHODS

- Population-based cohort study using the Manitoba Research Data Repository (1998–2019).
- Statistical Analysis:

High-Dimensional Propensity Score (HDPS)

Multivariable logistic regression adjusted for maternal characteristics and Socioeconomic Status.

Stratified analyses examined prevalences of adverse outcomes by ASM.

RESULTS

- ✓ Most ASM exposures occurred during the first trimester (1.3%) compared to the second or third trimesters (0.9%).

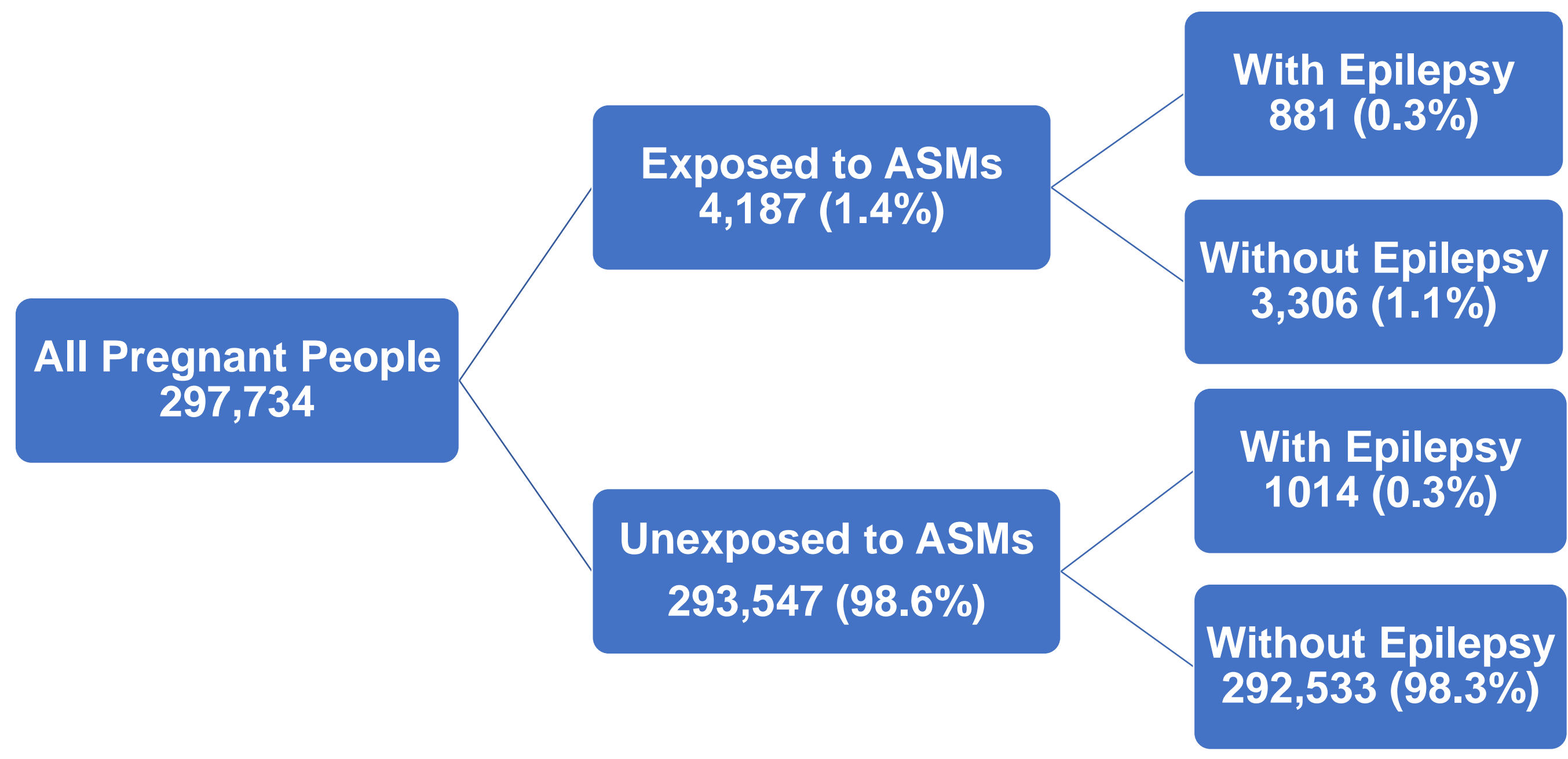


Figure 1. Distribution of Pregnant Individuals by Exposure to Antiseizure Medications and Epilepsy Diagnosis

Table 3: Adjusted OR GEE Model Results for Different Outcomes

Outcome	Cohort	Adjusted OR (95% CI)
PROM*	Any Exposure vs. Unexposed	1.18 (1.09–1.28)
	PPWOE vs. Unexposed	1.22 (1.12–1.34)
Pre-eclampsia*	Any Exposure vs. Unexposed	1.08 (0.84–1.38)
	PPWOE vs. Unexposed	1.00 (0.75–1.32)
Placental Abruption*	Any Exposure vs. Unexposed	1.58 (1.25–1.98)
	PPWOE vs. Unexposed	1.70 (1.33–2.18)
Postpartum Hemorrhage*	Any Exposure vs. Unexposed	0.81 (0.52–1.27)
	PPWOE vs. Unexposed	0.86 (0.54–1.39)
Gestational Diabetes*	Any Exposure vs. Unexposed	1.19 (1.05–1.34)
	PPWOE vs. Unexposed	1.18 (1.04–1.35)
Cesarian Section	Any Exposure vs. Unexposed	1.05 (0.99-1.21)
	Exposed PPWE vs Unexposed	1.02 (0.81-1.26)
	PPWOE vs. Unexposed	1.06 (0.99-1.13)
Gestational Hypertension	Any Exposure vs. Unexposed	1.15 (0.97-1.24)
	Exposed PPWE vs Unexposed	1.50 (1.03-2.3)
	PPWOE vs. Unexposed	1.04 (0.78-1.24)

Pregnant People with Epilepsy= PPWE, Pregnant People without Epilepsy= PPWOE, * Model for PPWE did not converge for these outcomes

Table 1: Characteristics of Study Population

Characteristic	Exposed (%)	Unexposed (%)
Age Categories		
- 18–28 years	48.4	48.2
- 29–39 years	48.2	48.6
- ≥ 40 years	2.6	2.5
Baby's Sex (Male)	51.4	50.4
Baseline Health Status		
- Hypertension (1 year)	5.8	6.6
- Diabetes (3 years)	6.2	7.2
- Mood or anxiety disorders	48.5	54.9
- Asthma (2 years)	25.0	25.4
Socioeconomic Status (SES)		
- Q1/Q2 (Low SES)*	58.8	60.5
Urban Residency	59.3	59.7


* Individuals in the lowest and second lowest median neighborhood income quintile


Table 2. Adverse Outcomes by Specific ASMs


ASM	PROM (%)	Cesarean Section (%)	Placental Abruption (%)	Gestational Diabetes (%)
Gabapentin	15.9	27.3	2.9	14.7
Valproic Acid	11.6	24.1	Suppressed	8.8
Lamotrigine	18.7	27.0	3.0	6.3
Topiramate	22.4	25.9	Not Suppressed	13.7

CONCLUSION

KEY FINDINGS


PROM


Placental Abruption


Gestational Diabetes

Higher risks seen with ASM exposure, especially during the first trimester

ACKNOWLEDGMENT