



Risk factors of severe maternal morbidity in individuals with methamphetamine use

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Background

- Stimulant use in the prenatal period has been rising in recent years, resulting in increasing obstetric morbidity and mortality
- There is limited research on the impacts of methamphetamine use in pregnancy
- Methamphetamine use has been associated with adverse maternal outcomes such as such as hypertensive disorders, placental abruption, cardiovascular morbidity
- It has further been associated with adverse neonatal outcomes such as preterm delivery, NICU admission, and perinatal mortality
- While there is limited research on the impacts of methamphetamine use in pregnancy, there is even less regarding additional risk factors contributing to adverse outcomes in this high-risk patient population

Objective

- Characterize the risk factors that contribute to non-transfusion severe maternal morbidity (SMM) among individuals using methamphetamines

Materials & Methods

- Retrospective cohort study using California-linked vital statistics and hospital discharge data from 2008-2020
- Included singleton, live born, non-anomalous births between 23-42 weeks gestational age among individuals using methamphetamines in pregnancy
- Using CDC definition of SMM, identified adverse obstetric outcomes by ICD-9 and 10 codes
- Only non-transfusion related SMM were included to improve specificity
- Chi-squared and multivariable logistic regression models were used for statistical analysis

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Many sociodemographic factors, comorbidities, and delivery characteristics contribute to non-transfusion severe maternal morbidity among individuals using methamphetamines.

These factors should be targeted in interventions to improve pregnancy outcomes.

Results

Table 1. Chi-squared and logistic regression model with adjusted odds ratios (aOR) and associated confidence intervals (CI) for risk factors of non-transfusion SMM in patients with amphetamine-related diagnoses in California 2008-2010

	No non-transfusion SMM (n = 22,749)	Non-transfusion SMM (n = 431)	p	aOR (95% CI)
Sociodemographic factors				
Attended some college	29.4%	38.1%	<0.001	1.14 (0.90, 1.44)
Public insurance	91.6%	94.4%	0.037	1.56 (0.97, 2.51)
Attended <5 prenatal visits	35.6%	46.7%	<0.001	1.37 (1.09, 1.72)
Rural hospital location	9.3%	5.1%	0.003	0.65 (0.41, 1.05)
Academic hospital	16.7%	20.0%	0.071	0.95 (0.72, 1.26)
Comorbidities				
Age ≥35 years	14.6%	32.7%	<0.001	1.95 (1.53, 2.49)
Body mass index			<0.001	
18-24.9 kg/m ²	51.0%	39.0%		1.00 (referent)
25-29.9 kg/m ²	26.1%	26.9%		1.23 (0.94, 1.62)
≥30 kg/m ²	22.9%	34.1%		1.62 (1.24, 2.11)
Chronic hypertension	5.3%	26.0%	<0.001	3.36 (2.54, 4.44)
Preexisting diabetes	1.9%	4.9%	<0.001	1.05 (0.61, 1.80)
Opioid-related diagnosis	7.5%	10.4%	0.023	1.48 (1.03, 2.14)
Delivery characteristics				
Induction of labor	16.5%	21.8%	0.003	1.44 (1.10, 1.88)
Preterm birth <37 weeks	22.9%	53.8%	<0.001	2.99 (2.39, 3.76)