Methamphetamine Abuse During Pregnancy

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1. Statistics
2. Pregnancy Concerns
3. Postpartum Concerns
4. Basic Science
5. Best Practice Guidelines
6. Withdrawal
7. Recovery
8. Key Clinical Points
9. References
Amphetamine-Related Hospitalizations in the United States
Amphetamine-Related Hospitalizations by US Census Region
Pregnancy Concerns

- Growth Restriction
- Low Birth Weight
- Placental Hemorrhage
- Managing Intoxication
- Prenatal Care
- Mental Health and Medical Comorbidity
Postpartum Concerns

- Withdrawal Syndrome
- NAS
- Breastfeeding
- Recovery
- Social Work Involvement
- Mental Health and Medical Comorbidity

Mental Health and Medical Comorbidity
Social Work Involvement
Recovery
Breastfeeding
NAS
Withdrawal Syndrome
• Dopamine • Epinephrine • Norepinephrine • Serotonin •
Onset of Action: Seconds to Minutes

Peak Plasma Concentration: 30 to 180 Minutes

Plasma Half-life: 12 to 34 Hours

Duration of Action: 24 Hours or More
Short-Term Effects

- Loss of appetite
- Increased heart rate, blood pressure, body temperature
- Dilation of pupils
- Disturbed sleep patterns
- Nausea
- Bizarre, erratic, sometimes violent behavior
- Hallucinations, hyperexcitability, irritability
- Panic and psychosis
- Convulsions, seizures and death from high doses

Long-Term Effects

- Permanent damage to blood vessels of heart and brain, high blood pressure leading to heart attacks, strokes and death
- Liver, kidney and lung damage
- Destruction of tissues in nose if sniffed
- Respiratory problems if smoked
- Infectious diseases and abscesses if injected
- Malnutrition, weight loss, severe tooth decay
- Disorientation, apathy, confused exhaustion
- Strong psychological dependence
- Psychosis, depression, neural cell damage and destruction
Best Practice Guidelines

- Agitation
- Hypertension
- Seizures
- Hyperthermia
- Tachycardia
- Cardiac Arrest
Acutely intoxicated patients may become extremely agitated.

Treat severely intoxicated patients immediately with intravenous or intramuscular benzodiazepines.

Physical restraints should be avoided if possible.
Hypertension

Sedation is the mainstay of therapy

Avoid medication with beta-blocking activity*

α and β*

Benzodiazepines
Hydralazine
Nifedipine
Labetalol *

Seizures

Seizures caused by acute methamphetamine intoxication are usually brief and self-limited, and do not require medical therapy

Prolonged seizures are treated initially with benzodiazepines

Institute Magnesium Sulfate therapy if eclampsia is suspected

Avoid pre-term or operative delivery by way of accurate diagnosis and treatment

Diazepam
Midazolam
Magnesium Sulfate
Phenytoin

Methamphetamine poisoning can produce a hyperadrenergic state associated with an increase in both alpha- and beta-adrenergic tone *
Hyperthermia

Control of hyperthermia (temperature $\geq 41.1^\circ C / 106^\circ F$) involves eliminating excessive muscle activity and aggressive cooling.

Increased body temperature in this setting arises from muscular activity, not an alteration in the hypothalamic temperature set point.

Antipyretics have no role in the management of hyperthermia due to methamphetamine intoxication.

Sedation
Aggressive Cooling
Antipyretics

Tachycardia

Although tachycardia is common among patients intoxicated with methamphetamine, heart rates are usually in a range that is well tolerated in the short-term.

Benzodiazepine therapy often reduces CNS catecholamine release sufficiently to produce an adequate reduction in heart rate.

Should additional rate control be needed, treat with a calcium channel blocker such as diltiazem.

Benzodiazepine
Beta-blockers
Cardiac Arrest

Some patients with severe methamphetamine intoxication will sustain sudden cardiovascular collapse.

No predisposing factors rigorously predict collapse, but the clinician should anticipate clinical deterioration and cardiac arrest in any wildly agitated patient, particularly those requiring physical restraints.
Withdrawal Syndrome

- Dysphoria
- Anhedonia
- Fatigue
- Increased Sleep
- Insomnia
- Agitation
- Anxiety
- Depression
- Drug Craving
- Increased Appetite
Recovery

- Individual Counseling
- Family Therapy
- Group Psychotherapy
- Crystal Meth Anonymous
- Contingency Management
Key Clinical Points

Methamphetamine has become the most common illicit substance of abuse requiring medical treatment during pregnancy.

Methamphetamine ingestion results in significant CNS penetration and leads to indirect sympathetic activation through the release of epinephrine, norepinephrine, dopamine, and serotonin.
Significant cardiovascular effects are vasoconstriction, tachycardia, and labile blood pressure.

Patients are typically hypertensive, although catecholamine depletion over time can result in hypotension.

Arrhythmias and myocardial ischemia can occur.

Hemorrhagic stroke has been reported.

In the setting of acute methamphetamine intoxication, the ensuing seizures, severe hypertension, and hyperthermia can be fatal.

Treatment goals include provision of a calm environment, with or without a benzodiazepine, and airway protection.

Active cooling, antihypertensives, and anticonvulsants should be used as needed.
Methamphetamine-induced seizures can masquerade as eclampsia

Methamphetamine withdrawal causes fatigue, depression, hunger, and intense cravings

Breastfeeding is not recommended for women with ongoing methamphetamine use

Social work consult should be ordered for all patients

False positive urine toxicology for methamphetamine may be caused by ephedrine administered during labor
Thank You!
References & Guidelines*

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*Best Practice Guidelines (Short and Long Versions) found in NOTES section of this slide