On the Street and Around the Corner: Cases of Drug Endangered Children

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Drug-endangered children

Children living in drug labs

Peer exposure to drug use/distribution

Drug-exposed newborns

Children in homes with caregivers with substance misuse and/or mental health instability

Substance abuse and child maltreatment by Wells, Peds Clin N Am April 2009
Risk Factors

• Developmental
  • Grabbing/ Hand-to-mouth behaviors
  • Close to ground/floor
  • Attracted to bright colors/ sweet tastes
  • Unknowingly imitate caregivers

• Family dynamics
  • Drug use/manufacture in the home
  • Poor parenting skills

Drug-endangered Children

Street
• Cocaine
• Methamphetamine
• Marijuana
• Heroin
• PCP
• LSD
• MDMA
• Ecstasy

Around the Corner
• Prescription
  • Opiates
  • Benzodiazepines
  • Amphetamines

By-standers
• Prescription
  • Mood
  • Sleep
  • Anti-nausea
• Over-the-counter
  • Benadryl
Drug Testing (Newborns)

- **Urine**
  - Quick results
  - Least expensive
  - Reflects recent usage

- **Meconium**
  - Only in newborns
  - Difficult to collect
  - Starts to be made during 2\textsuperscript{nd} trimester so positive result could be from recent or prior usage (but not before 2\textsuperscript{nd} trimester)

Meconium time line

<table>
<thead>
<tr>
<th>Trimester</th>
<th>Month</th>
<th>Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1-4</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5-8</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>9-13</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>14-17</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>18-21</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>22-26</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>27-30</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>31-35</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>36-40</td>
</tr>
</tbody>
</table>

http://theparentsite.com/pregnancy/trimesters.asp
Testing (Newborn)

• Hair
  • Growth starts in third trimester
  • Sufficient quantity limits use in newborns
• Umbilical cord
  • Performs as well as meconium in detection
  • Readily available and don’t have to wait for meconium to pass
  • ~ 20 week window of exposure

Guidelines for Neonatal Testing

• Evidence-based guidelines can standardize testing and decrease bias as maternal history is often unreliable and symptoms may not be present in baby

<table>
<thead>
<tr>
<th>Maternal Indicators</th>
<th>Newborn Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of drug use</td>
<td>Unexplained CNS complications:</td>
</tr>
<tr>
<td></td>
<td>1. Intracranial bleeding</td>
</tr>
<tr>
<td></td>
<td>2. Seizures</td>
</tr>
<tr>
<td>No or limited pre-natal care</td>
<td>Symptoms of drug withdrawal</td>
</tr>
<tr>
<td>Unexplained Placental abruption</td>
<td>Unexplained IUGR</td>
</tr>
<tr>
<td>Unexplained pre-term delivery</td>
<td></td>
</tr>
</tbody>
</table>
Testing children beyond the newborn period for drug-exposure

- Urine is often negative within ~ 12 hours after leaving environment of exposure.
- Interpretation of unconfirmed UDS results can be problematic.
- Hair drug testing has variable availability and reimbursement and does not allow determination of where exposure occurred (~ 3 month window).

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Drugs in class</th>
<th>False (+) possibilities (not a complete list)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphetamines (AMP)</td>
<td>Methamphetamine, amphetamines (ADD and weight loss)</td>
<td>Decongestants Anti-depressants</td>
</tr>
<tr>
<td>Opiates</td>
<td>Heroin, morphine, oxycodone, hydromorphone</td>
<td>Dextromethorphan (DM), poppy seeds</td>
</tr>
<tr>
<td>Marijuana (THC)</td>
<td>Cannabinoids</td>
<td>Ibuprofen (NSAIDS)</td>
</tr>
<tr>
<td>Cocaine</td>
<td>Cocaine + metabolites</td>
<td>Amoxicillin</td>
</tr>
<tr>
<td>Benzodiazepines (Benzo)</td>
<td>Diazepam (Valium) Alprazolam (Xanax) Clonazepam (Klonopin)</td>
<td>Ibuprofen (NSAIDS) famotidine (pepcid)</td>
</tr>
<tr>
<td>Phencyclidine (PCP)</td>
<td>PCP</td>
<td>Dextromethorphan (DM), allergy meds (benadryl)</td>
</tr>
<tr>
<td>Barbiturates (Barbs)</td>
<td>Amobarbital, secobarbital (sleep aids)</td>
<td>Phenobarbital (seizure medication)</td>
</tr>
</tbody>
</table>
Opioids = Pain Relievers
(Prescription and controlled by DEA)

- (Heroin-street drug, not prescription)
- Codeine
  - Tylenol #2/3
- Hydrocodone
  - Vicodin, Lortab
- Oxycodone
  - Oxycontin, Percocet
- Synthetic opioids
  - Fentanyl, Demerol, Methadone, etc.

http://www.drugabuse.gov/DrugPages/DrugsofAbuse.html
# SYNTHETIC ANALGESICS
(Opiate-like Actions)

- Meperidine
  - *Demerol*®
- Methadone
- Propoxyphene
  - *Darvocet*®
- Tramadol
  - *Ultram*®
- Fentanyl

These will not show up on routine drug screens unless a separate category is listed for them. So their “prescribed use” would not explain positive screening test.

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## Hair Testing

- Drug can be on the surface of the hair (smoke, vapor, particle)
- Systemic inhalation and ingestion can lead to uptake into follicle which grows out in shaft
- Levels not that helpful (except to show above minimal detectable level)
Interpreting Results

• Methamphetamine by-product is amphetamine
  • Ratio ~ 10:1 (metabolized in liver)
• Cocaine
  • Benzoylecgonine
  • Ecgonine methly ester
  • Norcocaine
  • (Methylecgonine from Crack)

Marijuana (Cannabis)

• Short term (Recreational Use)
  • High and euphoria
• Long term
  • Short term memory loss
  • Anhedonia
• Potency of THC in seized marijuana has increased over past decades
  
  http://www.usdoj.gov/dea/concern/concern.htm

• Jacques, et al. Cannabis, the pregnant woman and her child: weeding out the myths. *J of Perinatology* 2014;34
Living with a caregiver with a substance-abuse disorder

• Drug manufacture and/or distribution by caregiver
  • Meth labs
• Co-occurring risk factors
  • Personal violence/impulse control
    • Physical and sexual abuse
  • Domestic violence
  • Caregiver mental health (may be self-medicating with illicit drugs)
• Neglect by caregiver
  • Supervision, provision of needs, interaction

• Adverse Childhood Experiences Study
  • Being victimized by psychological/sexual/physical abuse
  • Witnessing violence against mother
  • Living with a substance abuser
  • Living with a caregiver who is mentally ill/suicidal
  • Having a family member imprisoned

http://www.cdc.gov/ace/index.htm
References

• Info sections for parents, kids and health care providers
  http://www.drugabuse.gov/

  http://www.hindawi.com/journals/ijped/2011/951616/

Resources

• “Drug Testing in Child Welfare: Practice and Policy Considerations

“Tackling Toxic Stress”

• http://developingchild.harvard.edu/resources/stories_from_the_field/tackling_toxic_stress/pushing_toward_breakthroughs/

• Dr. Nadine Burke Harris, Center for Youth Wellness (Toxic stress and ACE’s)
  http://www.nadineburkeharris.com/