

Drug Endangered Children: Medical Effects

Jennifer Sleiter CPNP, ARNP
Regional Child Protection Center
Blank Children's Hospital



Symptoms of Meth Exposed Infants and Children

NB to 4 weeks: (Dopamine Depletion Syndrome)

- Lethargic-Excessive Sleep Period
- Poor Suck and Swallow Coordination
- Sleep apnea
- Poor habituation





Symptoms of Meth Exposed Infants and Children

Four Weeks to Four Months Age:

- Symptoms of CNS immaturity - Effects on Motor Development
- Sensory Integration Problems - Tactile Defensive, Texture Issues
- Neurobehavioral Symptoms – Interaction, Social Development



Symptoms of Meth Exposed Infants and Children

Six Months to Eighteen Months:

The Honeymoon Phase
Symptom Free Period



Symptoms of Meth Exposed Infants and Children

Eighteen Months to Five Years:

- Sensory Integration Deficit
- Less Focused Attention
- Easily Distracted
- Poor Anger Management
- Aggressive Outbursts





IDEAL Study

- Infant Development, Environment and Lifestyle Study
- Los Angeles, Honolulu, Des Moines, Tulsa, and Auckland, New Zealand
- 27,000 newborn infants screened for methamphetamine exposure
- In utero methamphetamine-exposed group and comparison group



IDEAL Study

- Developmental examinations at birth, 1 month, and 1,2, and 3 years and home visit at 18 months
- Measure cognition, social relationships, neuromotor development, neuroendocrine function, and general health
- Child Behavior Checklist (CBCL) at ages 3 and 5 years



Demographic and Psychosocial Characteristics of Mothers

	MA users	Nonusers
Prenatal care	89%	99%
Prenatal visits	11	14
First visit	15 weeks	9 weeks



Newborn Effects

Intrauterine Growth

- MA-exposed newborns had lower birth weight and were 4.5 times more likely to be small for gestational age than babies born to non-MA users



Newborn Effects

Neonatal Neurobehavioral Outcomes

- Measured using NICU Network Neurobehavioral Scale (NNNS) during the first 4 days of life
- MA exposure associated with lower arousal and increased stress of the central nervous system

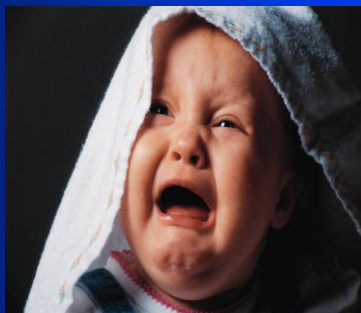


Newborn Effects

Neonatal Cry Acoustic Analysis

- MA-exposed infants more likely to cry in response to initial stimulation and had poorer respiratory control and neural control of the vocal tract





So What Does This Mean???



What to Expect

- Symptoms exhibited by babies may vary
- Most of the symptoms are not exclusive to drug exposed infants
- Treatment is based on the symptoms that the child may be having



What to Expect

- Not all children exposed to drugs will have problems
- The effects from prenatal events should be balanced against the effects of a stable environment and early intervention services



Possible Symptoms in Infants and How to Treat



Hypertonicity (Increased Muscle Tone)

- Passive range of motion
- Infant massage
- Possibly physical therapy
- Avoid baby walkers



Trunkal Muscle Weakness

- Encourage supervised tummy time
- Supportive positioning
- May refer to OT/PT



Tremors

- Shaking of arms and/or legs
- Minimize overstimulation
 - Stress reduction
 - May refer to OT/PT



Irritability/Excessive Crying

- Avoid overstimulation
- Provide a consistent stable environment
- Swaddle in a blanket
- Offer pacifier



Poor Self Regulation of Sleep/Wake Cycle

- Minimize overstimulation
- Establish sleep time routine



Poor Regulation of Feeding (Overeating)

- Consult pediatrician to determine optimal caloric needs of infant
- Offer bottled water between feedings
- Offer pacifier for nonnutritive suck



Poor Regulation of Feeding (Difficulty Feeding)

- May need to wake child every four hours
- May need to try different nipples on the bottle
- May need to refer to therapy for a feeding evaluation



IDEAL Study

- Using CBCL, ages 3 & 5 years
- Increased emotional reactivity and anxious/depressed problems at both ages
- Externalizing and ADHD problems by age 5 years
- Attention problems and withdrawn behavior at both ages with heavy exposure



Possible Symptoms in Toddlers and Preschool Children and How to Treat



Speech Problems

- Encourage interactive reading at home
- Encourage to use words to communicate needs and wants
- Encourage sign language communication, start at an early age
- May refer for a hearing and/or speech evaluation



Temper Tantrums/Aggressive Behaviors

- Teach sign language for expression of feelings
- Redirect behavior
- Use positive, non-punitive reinforcement



Sensory Integration Issues

- Avoid triggers for sensory defensiveness
- Refer to OT for sensory integration evaluation and treatment



Possible Symptoms in School Age Children and How to Treat



Attention Deficit Hyperactivity Disorder

- Medical treatment combined with behavioral therapy treatment
 - Manage undesirable behaviors with positive reinforcement
 - Communication between school and home
 - Special classroom management




SUMMARY

- There is very little research about the effects of prenatal exposure to meth
- The effects can vary
- With a stable environment and early interventions, these children can do very well






Environmental Drug Exposure



Toxins in a Home Meth Lab

- Methamphetamine powder and solution
- Flammable solvents
- Phosphorus
- Lye
- Acid
- Iodine



Meth Lab Human Toxicity

- Phosphorus-Inhalation of phosphine gas is lethal
- Lye or Acid-Concentrated caustic substance produces severe burns
- Iodine-Eyes, nose, skin irritation or burn, abdominal pain, thyroid disease
- Ammonia and Ether-Respiratory toxins





Children Who Ingest/Inhale Illegal Drugs

- Children pick up pieces of the raw drug or the drug powder
- Children inhale the smoke in the home
- Few cases reported in the literature



Child Abuse & Neglect and Caretaker Substance Abuse

- Neglect
- Physical abuse
- Sexual abuse
- Increased risk for accidents
- Increased risk for infant mortality





Effects on Caretakers

- CNS depressants: impaired performance & thinking
- CNS stimulants: depression, anxiety, irritation, aggression
- Hallucinogens: harsh physical side effects, brain damage, bad "trips"



Effects on Caretakers

- Dissociative Anesthetics: harsh physical side effects, illogical thinking, violent behaviors, psychosis
- Narcotic Analgesics: overdose, malnutrition, sleep deprivation, anger, anxiety
- Inhalants: injuries, death



Caretaker Substance Abuse and Neglect

- Lack of nurturing and emotional stimulation results in developmental delays, depression and attachment disorder
- Malnutrition/Failure to Thrive



Caretaker Substance Abuse and Neglect

- Poor hygiene and infectious skin conditions
- Medical neglect of chronic medical problems
- Little well child care/Immunization delay
- No insurance/Frequent Emergency Room use



Caretaker Substance Abuse and Increased Risk for Accidents

- Lack of supervision-increased injury from falls, burns, lacerations, drowning
- DUIs increased serious risk for injury from MVA- no car seat/seatbelt
- Increases risk of injury in house fires



DEC Medical Protocol

- Follow-up assessment
 - Assessment provided at designated center by professionals trained in assessing DEC patients
 - Complete physical exam
 - Nutritional assessment
 - Developmental screen
 - Mental health exam
 - Referral to collaborating agencies for ongoing follow up



Jennifer Sleiter MSN, ARNP
Regional Child Protection Center

1215 Pleasant Street Suite 303
Des Moines, IA 50309
515-241-4311



The Developmental, Psychological, and Medical Effects on Drug Endangered Children

Beth Schmitz, Ph.D.
Orchard Place-Child Guidance Center



Important Resources

- ▶ Siegal, Daniel (1999) *The Developing Mind*; Guilford Press.
- ▶ Selected works of Dr. Richard Gaskill, Sumner Mental Health Center; Wellington, Kansas
- ▶ Selected works of Dr. Bruce Perry and the Child Trauma Academy; Houston, Texas
- ▶ Cohen, Mannarino, & Deblinger (2006) *Treating Trauma and Traumatic Grief in Children and Adolescents*; Guilford Press.
- ▶ Appelstein, Charles (1998) *No Such Thing as a Bad Kid*; Gifford School



Effects of Exposure to DEC Environments

- ▶ DEC=Trauma
- ▶ Trauma Informed Care
- ▶ Prolonged Stress Reactions
- ▶ Intervention Question
- ▶ Charles Appelstein: No Such Thing as a Bad Kid (1998)



DEC Environments Effects on Children

- Impact of Trauma on Brain Development
- Regulation Issues
- Emotional Issues
- Arousal States
- Relationship Issues
- Triggers
- Emotional Age vs. Chronological Age



Impact of Trauma: Brain Development

- Brain size and Brain growth
- PET Scan research
- Brain Development is relationship-based and therefore is a reflection of our experiences.
- Brain develops in a use-dependent manner.
- Stress response important to understand.
- All stress is not bad stress.
- Predictable vs. Unpredictable Stress.
- Prenatal trauma and trauma in earlier generations.

Bruce Perry (2008/2009)



Trauma effects (continued)

- Important to know and understand child's early history and whether there is presence of trauma.
- Changes in brain connections occur under prolonged and unpredictable stress/distress.
- When the trauma occurred can make big difference in the functioning of the child.
- Once connections are fully made, it is difficult to unmake them.

Bruce Perry/Rick Gaskill (2008/2009)



Impact of Trauma: Regulation Issues

- ▶ Sleep Issues
- ▶ Eating Issues
- ▶ Language Concerns
- ▶ Cognitive/Learning Issues



Impact of Trauma: Emotional Issues

- ▶ Anxiety/Hyperarousal
- ▶ Ruminations
- ▶ Flashbacks
- ▶ Low Self-Esteem
- ▶ Regressive Behaviors
- ▶ Limited understanding of boundaries
- ▶ Self-destructive behaviors/self-harm
- ▶ Advanced and inappropriate knowledge.



Arousal Continuum

- ▶ Calm
- ▶ Alert
- ▶ Alarm
- ▶ Fear
- ▶ Terror

Bruce Perry (2008/2009)



Impact of Trauma: Relationship Issues

- ▶ Trust
- ▶ Testing Adults
- ▶ Sibling relationships



Impact of Trauma: Triggers



Impact of Trauma: Emotional Age vs. Chronological Age



Interventions That Can Help

- ▶ Support
- ▶ Structure
- ▶ Language Interventions
- ▶ Self-esteem
- ▶ NMT Interventions

Bruce Perry/Rick Gaskill (2008/2009)
Charles Appelstein (1998)



Questions????

Contact info: Beth Schmitz, Ph.D.
OP-Child Guidance Center
808 5th Avenue
Des Moines, Iowa 50309
(515) 244-2267
bschmitz@orchardplace.org