NEUROPSYCHOLOGY OF ALCOHOL AND SUBSTANCE ABUSE DISORDERS: NEUROTOXIC SEQUELAE IN INFANTS, CHILDREN AND ADULTS

James E. Lewis, Ph. D.
Clinical Neuropsychologist
Florida Children’s Medical Services
Suncoast Center Child Protection Team
A Webinar for the
National Alliance for Drug Endangered Children
September 24, 2015

OVERVIEW OF SEMINAR

• Practical “down to earth” applications of Clinical Neuropsychological assessments with alcohol and drug affected infants, children and adults
• Comparisons of limited concept of “Fetal Alcohol Syndrome” and more inclusive “Fetal Drug/Alcohol Exposure”
• Concept of gross underestimation of childhood neuropsychological disorders that rely solely on birth drug screens (the “drug affected newborn”)

OVERVIEW - CONTINUED

• Why childhood and adolescent alcohol and drug use “targets” frontal lobe Executive Functions
• Adolescent and adult Substance Abuse neuro consequences “mimic” Bipolar and Mood Disorders – failures of diagnosis and medication management
• FREQUENT “comorbidity” of neuro damage from concussive head injuries (from fights, falls, motor vehicle, sports accidents)
Neurodevelopmental Consequences of Fetal Drug/Alcohol Exposure

- Most severe FAS does lead to high incidence of Intellectual Deficiency (MR), sensory deficits, severe developmental delays
- **However**, Fetal Drug/Alcohol Exposure not diagnosed by mother-infant blood testing at birth also are:
  - Associated with 10-15x increase in Dyslexic and other Learning and Attention Disorders (all forms of ADHD); frontotemporal Executive Function, mood and behavior disorders, etc.
  - Common “sawtooth” neurocognitive test pattern: some higher IQ areas but other moderate to severe selective neuro deficits

Suggested Investigative/Clinical Interview “Do’s and Don’ts”

- **Avoid asking** “how much did you drink or do drugs when you were pregnant?”
- More effective, reliable and less threatening approach:
  - first time you ever drank (not got drunk)
  - first time you drank to excess; how often lost memory of whole days or part of day (partial/total alcohol blackouts)
  - first drug ever “tried” (not used regularly)
  - other drugs “tried”; what drugs used the most
  - how far into pregnancy (missed periods) before realize pregnant
- Then do the math – idea of first trimester exposure (even unwitting) aside from more honest admission of other abuse
Underdiagnosis and Misdiagnosis of Fetal Drug/Alcohol Related Neuro Disorders

• Concept of “acquired” (from Fetal Neurotoxicity) Dyslexic, Learning, Attention and Behavioral Disorders (not “random” or congenital)
• Frequent educational misdiagnosis: IEP lists Primary Disability/Exceptionality as “Emotionally Handicapped”
• Actual issue is that “organic” Fetal Alcohol/Drug-related neurocognitive and neurobehavioral disabilities produce social and behavioral problems
• Accurate Primary Disability/Exceptionality on IEP: Other Health Impaired or Specific Learning Disabilities
• Crucial need for Parent/Educational advocacy

“Double Whammy” of Preadolescent and Adolescent Alcohol/Drug Abuse

• Acute and chronic alcohol intoxication and drug “highs” – AND – increased neurotoxic effects on the physiologically immature “developing” brain
• Translation: Alcohol and Drug Abuse potentially damaging at all ages but more drastic effects on the physiologically “immature” (developing) brain
• “Targeting” of frontal lobe executive functions: higher-level thinking, planning, reasoning, organizational skills
• Prefrontal cortex is the last higher cortical region to fully develop (age 18-21); additional damage from concussions (fights, falls, sports, motor vehicle, recreational accidents)

Neurotoxicology of Adult Alcohol/Substance Abuse

• Overriding concept: Alcohol/Substance Disorders “mimic” other chronic mental disorders, esp. Bipolar Disorder I and II; Depression; and, Psychosis
• Actual diagnoses are Substance Induced Mood and Cognitive Disorders
• Examples: Psychostimulants = increase in paranoia, hypomania, cycling of mania and depression (all forms of cocaine, Ecstasy, crystal meth, etc.)
• CNS Depressants: increase Major Depression – with/without Psychosis (Alcohol, all opiates/narcotics, higher doses of benzodiazepines)
CONTACT INFORMATION FOR PRESENTER

• Dr. James E. Lewis, Clinical Neuropsychologist
• Cell: 301-769-4180
• Email: docjimlewis@gmail.com
• Offices: The Suncoast Center
  3800 Central Avenue, St. Petersburg, FL and
  2960 Roosevelt Blvd., Clearwater, FL