Objectives

- Participants will learn about the prevalence and patterns of auditory hallucinations in youth.
- Participants will become familiar with approaches to assess possible auditory hallucinations in youth.
- Participants will be able to describe appropriate management of possible auditory hallucinations in youth.

Disclosures

- I have no financial interests to disclose.
- I will discuss FDA off-label use of medications, but I will designate it as such.
Key Points

• Psychotic-like symptoms are fairly common in childhood and adolescence
• Schizophrenia is exceedingly rare in children (<1/10,000), and still very uncommon in adolescents
• Most youth who experience psychotic-like symptoms will never develop a primary psychotic disorder
• Most people who do develop schizophrenia will pass through a non-specific "prodrome" that may only be identifiable in hindsight

What is psychosis?

• Hallucinations or delusions without insight
• Delusions or hallucinations
• Grossly disorganized speech or behavior
• Loss of contact with consensual reality

The Continuum Perspective

• Hallucinations and perceptual abnormalities occur outside of psychopathology in children, adolescents, and adults (PLIKS)
  • Barrett and Etheridge 1992, Verdoux and van Os 2002
  • Adolescents: McGorry 1995
  • Poulton 2000: 14.1% of 11 year old children in population sample had psychosis-like symptoms
  • Self-report questionnaires have shown 6.0-58.9% of adolescents reporting psychosis-like symptoms
The Continuum Perspective: The ALSPAC Cohort

- 6455 general population 12.9 year olds given a structured questionnaire followed by a triggered semi-structured interview (PLIKSi)
- 5.6% of 12 year old children in population sample assessed as having had definite psychotic spectrum symptoms. 3.62% had definite or suspected core symptom of schizophrenia

Horwood 2008
The Continuum Perspective

- In a non-clinical population of German adolescents 5.2% experienced “thought interference” and 4.2% experienced “thought perseveration.” (Meng, 2009)
- In non-clinical populations of adolescents “prodromal” symptoms have been found in 10-50% of subjects (McGorry 1995)
- In clinical populations of adolescents with non-psychotic disorders, 15% have been found to have “ultra high risk” characteristics (Salokangas 2004)

Interview: Basic

- Target to developmental level
- Join first, ask later
- Start positive or neutral, then ask ?’s in increasing order of severity(…mostly)
- Maintain a consistent tone
- Avoid compound and leading questions
- Watch for nonverbal cues and avoidance
- Normalize: “Lots of kids have heard voices. Have you heard voices?”

Interview: Conviction

- How sure are you?
  - “Really, really sure?”
  - “60% sure?”
- Is it possible it’s your imagination?
- Could the voice actually be your own thoughts?
- Could your mind be playing tricks on you?
- How would you know if you were wrong?
- BUT DON’T CONFRONT OR CHALLENGE!
Interview: Developmental Issues

- Younger children can have difficulty distinguishing inner speech from hallucination
- But...even young children, when pressed, can often distinguish between real and “make believe” or “imaginary”
- Illogical thinking and loosening of associations decreases in normal children by age 7, and are rare by age 10 (Caplan 1994)
- Imaginary friends rarely cause distress/impairment
- Teens may be trying to assume outsider identity

Interview: Auditory Hallucinations

- Onset
- Frequency
- Duration
- Context/Triggers
- Explanatory Models / Delusional Interpretations
- Degree of Distress or Preoccupation

Interview: Parents

- Parents better at describing observable than internal symptoms
  - 57% of mothers of adolescents admitted with 1st episode of psychosis unaware of the psychotic symptoms (de Haan 2004)
- Be attuned to the many influences of family history:
  - Parent may have psychosis
  - Parent may have specific model of psychosis
Interview: Obstacles

- Patients and families may need breaks or diversions to less troubling topics or activities
- Active symptoms may make participation difficult
  - Look for signs of distraction, preoccupation, paranoia
- Disorganization and cognitive impairment may require developmental adjustments, closed-ended questions, redirection, limit-setting, temporal or spatial anchors, or just patience
- Negative symptoms can block expression of affect, so ask

“Atypical” Symptoms

- Inconsistent reports
- Overly detailed descriptions suggestive of fantasy or imagination
- Highly context-dependant symptoms

Differential Diagnosis of Psychotic Symptoms

- Fantasy
- Bereavement
- Anxiety (in Younger Children)
- Trauma and abuse
- Substances
- Medical Illness
- Psychiatric Illness
- Personality Disorders
- Developmental Disorders
Differential Diagnosis: Mood Disorders

- Psychosis common in severe mood disorders:
  - Hallucinations in 9-27% of children with MDD, delusions in 6%
  - Psychosis in 16-75% of samples with BAD
- Mood symptoms do not rule out prodromal state
- Mood-congruent psychosis and psychosis present exclusively during mood episode help with diagnosis

Differential Diagnosis: Anxiety Disorders

- OCD
  - OCD symptoms common in prodrome and in primary psychotic disorders (28% of EOs per Nechmad 2003)
  - Some obsessions take on delusional intensity, but may still be best understood as OCD (Tixel 1996)
- Children will sometimes have anxiety-based psychosis

Differential Diagnosis: Substances

- Can be mimics or precipitants
- Average age of first substance use in US is now between 11-12
- Marijuana use appears to be risk factor for psychosis
Trauma…not just differential diagnosis

- Maltreatment increases risk of psychotic symptoms
- Peer victimization at age 8 increased risk of psychotic symptoms at 12.9 (OR=1.94)
- Acute stress can cause brief psychotic symptoms
- Dissociation can be hard to distinguish from psychosis
- Some youths diagnosed with schizophrenia are later found to have borderline personality disorder
- But…disorganized communication, bizarre delusions, voices making running commentary, persistent negative symptoms are rare in trauma alone


Differential Diagnosis: Developmental Disorders

- MR and ASD elevate risk for psychosis, but also can confuse diagnosis
- Intellectual disability can overlap with psychosis, and is a risk factor for psychosis
- Thought disorder often present in ASD
- Fantasy with transient conviction common ASD
- Normal early childhood excludes DD/ASD

20% of COSECS has IQ<80 (Werry 1994)

Differential Diagnosis: General Medical

- Seizure Disorders
- Neurodegenerative Disorders
- Rheumatologic Disorders
- Endocrinologic Disorders
- Deficiencies
- Infectious Diseases
- Head Injury
- Neoplasms
- Delerium
Medical Evaluation

- Consider: Physical Exam, UTox, UTox, UTox, UPreg, TSH, Metabolic Panel, VDRL, HIV
- Sometimes: EEG, MRI, ESR
- Rarely: LP, Copper and Ceruloplasm, Cortisol, Heavy Metals
- Really Rarely: Arylsulfatase A, Karyotype, Cytogenetics

Worry Signs

- Family history of psychotic disorder
- Motor symptoms
- Very poor family function
- Insidious decline prior to emergence of hallucinations
- Cognitive decline
- Social anhedonia, and other negative symptoms
- More severe symptoms
- Acting on symptoms with bizarre behaviors

Negative Symptoms in Children

- Social withdrawal, social anhedonia
- Amotivation
- Reduced motor movements
- Reduced number or quality of thoughts
- Diminished emotional expression
Normalize, Don’t Minimize!

- Explain that it’s more common than thought
- Doesn’t mean youth is “going crazy”
- Doesn’t mean youth can’t recover
- Doesn’t mean youth has to take medications
- Doesn’t mean youth is going to end up homeless

The “Prodrome”

- Early: impaired concentration, decreased motivation, depressive or labile mood, sleep disturbance, anxiety, social withdrawal, suspiciousness, irritability, defiance, aggression, obsessions, compulsions, dissociation
- Later in course (~1 year before conversion): perceptual disturbances

The Psychosis Prodrome

Early Prodrome: impaired concentration, decreased motivation, depressive or labile mood, sleep disturbance, anxiety, social withdrawal, suspiciousness, irritability

Subpsychotic Prodrome: paranoid ideation, voices of reference, magical thinking, perceptual disturbances, atypical speech or behavior

Transient Psychotic Symptoms

Several Years | One Year | Months

Psychosis

Meyer 2005
Risk Stratification

- Ultra-High Risk (UHR) → 9-54% Conversion at 1 year
  - Attenuated positive psychotic symptoms
  - BLIPS or BIPS
  - Family History or Schizotypal Personality Disorder + Functional Decline

Conversion of High Risk Patients to Full Psychosis

Controlled Studies for UHR: All off-label

- Risperidone + psychosocial treatment (non-blind)
  - Reduction in 6-month conversion rate, but no difference by 12 months
- Olanzapine
  - Trend of reduction of 12-month conversion rate.
- CBT (non-blind)
  - Reduction in 12-month conversion rate.
- Omega-3 Fatty Acids
  - Reduction in 12-month conversion rate (5% v. 28%).
Safety Risk Assessment

- Psychosis increases risk of suicide, violence, victimization and abuse
  - In inpatient sample, children with psychosis were 3x more likely to have attempted or threatened suicide
  - Suicide risk may be highest early in course
- Assess for hopelessness, command auditory hallucinations, paranoia