PSYCHIATRIC DIAGNOSIS AND PEDIATRIC PSYCHOPHARMACOLOGY

Michael W. Naylor, MD

Clinical Services in Psychopharmacology
Institute for Juvenile Research
University of Illinois at Chicago
FDA

- FDA requires that drugs used in the United States be safe and effective
FDA

• FDA approval:
  – drug's use approved in doses, routes of administration and in specific populations

• Label information:
  – package insert
  – Physicians Desk Reference
  – advertising
Definition

• Off-label medication - a medication used at a different dose, for a different medical indication or in a different population than approved by the FDA
Off-Label Medications

- Legal
  - May represent standard of care
  - Prescribers must be well informed about the product and base off-label use on sound medical evidence
  - Maintain records of product's use and effects
Off-Label Medications

- > 70% of all medications in the PDR have no dosing information for pediatric patients or state that safety and efficacy have not been determined in children.
- Vast majority of chemotherapy agents are not approved for use in children or adolescents.
Off-Label Medications

• 50% of medications prescribed for psychiatric disorders are not approved for use under 18 years
• Some are approved for medical illnesses, not psychiatric disorders
• 35% are approved for treatment of at least one psychiatric disorder
Dr Naylor, can I be excused? My brain is full!
Common Referral Symptoms

• Mood/affect disturbances
  – depression
  – anxiety
  – mania
  – affective lability

• Self-destructive behavior
  – suicidal behavior
  – self-mutilation
Common Referral Symptoms

• Disruptive behaviors
  – inattention
  – hyperactivity
  – impulsivity
  – aggression/rage
  – explosivity
  – oppositional/defiant
Common Referral Symptoms

- Trauma-related
  - flashbacks
  - nightmares
  - overarousal
- Other
  - enuresis
  - psychosis
Diagnostic Assessment

- History of complaint
- Medical history
- Psychiatric history
- Family history
- Social history
- Mental status examination
Treatment Planning

- Formulation
- Diagnosis
- Treatment plan
Attention Deficit Hyperactivity Disorder

- 6 or more symptoms of inattention:
  - fails to pay close attention
  - difficulty sustaining attention
  - does not seem to listen
  - does not follow through on instructions or complete tasks
  - difficulty organizing tasks
  - avoids tasks that require sustained mental effort
  - often loses things
  - easily distracted
  - forgetful
Attention Deficit Hyperactivity Disorder

- 6 or more of the following symptoms of hyperactivity-impulsivity
  - hyperactivity
    - fidgets
    - cannot remain seated
    - runs about or climbs excessively
    - difficulty engaging in quiet activities
    - on the go
    - talks excessively
  - impulsivity
    - blurts out answers
    - difficulty waiting turn
    - interrupts others
"I say we do it . . . and trichinosis be damned!"
The class was quietly doing its lesson when Russell, suffering from problems at home, prepared to employ an attention getting device.
Post-traumatic Stress Disorder

• Child exposed to traumatic event
  – child witnessed or experienced event that involved threat of death or serious injury
  – child’s response involved intense fear, helplessness, or horror
Post-traumatic Stress Disorder

• Re-experiencing traumatic event
  – recurrent and intrusive distressing recollections (repetitive play)
  – recurrent dreams
  – feeling as if the event was re-occurring (flashbacks)
  – distress with exposure to symbolic cues
  – physiological reactivity with exposure to symbolic cues
Post-traumatic Stress Disorder

- Avoidance of stimuli associated with trauma
  - avoidance of thoughts and feelings
  - effort to avoid activities
  - inability to recall
  - decreased interest
  - restricted range of affect
  - sense of foreshortened future
Post-traumatic Stress Disorder

• Hyperarousal
  – difficulty falling asleep
  – irritability or anger outbursts
  – difficulty concentrating
  – hypervigilance
  – exaggerated startle response
“TICK-TOCK, TICK-TOCK, TICK-TOCK, TICK-TOCK, . . .”
Intermittent Explosive Disorder

• Failure to resist aggressive impulses that result in assault or destruction of property
• Aggression expressed is out of proportion to precipitant
"Hey! You wanna kick me? Go ahead! C’mon, tough guy! Cat got your tongue? Maybe he took your whole brain! ... C’mon! Kick me!"
Major Depression

- Five or more of the following symptoms have been present during the same 2 week period
  - depressed mood*
  - loss of interest/pleasure*
  - change in weight or appetite
  - sleep disturbance

(cont.)

* - one of these must be present.
Major Depression

• (cont.)
  – fatigue or loss of energy
  – feelings of worthlessness or inappropriate guilt
  – decreased concentration or indecisiveness
  – suicidal ideation or behavior, thoughts of death
Mania

- Distinct period of abnormally and persistently elevated, expansive, or irritable mood lasting $\geq 1$ week or requiring hospitalization
Mania

• During the period of mood disturbance, 3 or more of the following symptoms are present:
  – inflated self-esteem or grandiosity
  – decreased need for sleep
  – pressured speech
  – flight of ideas
  – distractibility
  – increase in goal directed activity or psychomotor agitation
  – excessive involvement in pleasurable activities
Bipolar Disorder

• Currently (or most recently) in either a depressive or manic episode.
• There has previously been at least one manic/mixed or depressive episode.
Bipolar Disorder

- Subtypes
  - bipolar I
  - bipolar II
  - NOS
FRANK & ERNEST

HOW'S YOUR MANIC-DEPRESSION?

EASY GLUM - EASY GLOW!
Schizophrenia

- Characteristic symptoms
  - delusions
  - hallucinations
  - disorganized speech
  - grossly disorganized or disorganized behavior
  - negative symptoms
Schizophrenia

• Social/occupational dysfunction
  – for a significant period of time since onset of disorder the level of social, occupational, and self-care has deteriorated below level attained before onset
HOW NATURE SAYS, “DO NOT TOUCH.”
Conduct Disorder

- Repetitive and persistent pattern of behavior in which the basic rights of other or major age appropriate societal norms or rules are violated.
Conduct Disorder

- 3 or more examples of the following in last 12 months with at least one in past 6 months:
  - Aggression to people and animals
  - Behavior causing property damage/loss
  - Deceitfulness or theft
  - Serious violations of rules
Conduct Disorder

- Aggression to people and animals:
  - often bullies, threatens, or intimidates others
  - often initiates physical fights
  - has used a weapon that can cause serious physical harm to others
  - has been physically cruel to people
  - has been physically cruel to animals
  - has stolen while confronting a victim
  - has forced someone into sexual activity
Conduct Disorder

- **Destruction of property:**
  - has deliberately engaged in fire setting with the intention of causing serious damage
  - has deliberately destroyed others' property (other than by fire setting)
Conduct Disorder

• Deceitfulness or theft
  – has broken into someone else's house, building, or car
  – often lies to obtain goods or favors or to avoid obligations
  – has stolen items of nontrivial value without confronting a victim
Conduct Disorder

• Serious violations of rules:
  – often stays out at night despite parental prohibitions
  – has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period)
  – is often truant from school
Killer bees are generally thought to develop from larvae delinquents.
Oppositional Defiant Disorder

- Recurrent pattern of negative, defiant, disobedient and hostile behavior toward authority figures (> 6 months).
Oppositional Defiant Disorder

- 4 our more present:
  - Loses temper
  - Argues with adults
  - Actively defies or refuses to comply with adults rules
  - Deliberately annoys people
  - Easily annoyed
  - Blames others for his or her mistakes or misbehaviors
  - Angry or resentful
  - Spiteful or vindictive
"Just ignore him. That's our young calf, Matthew - he's into wearing leather for the shock value."
Mental Retardation

- Significantly subaverage intellectual functioning: an IQ of approximately 70 or below on an individually administered IQ test.
Mental Retardation

- Concurrent deficits or impairments in present adaptive functioning in at least two of the following areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety.
Mental Retardation

- **Classification**
  - Mild; > 50-55
  - Moderate; 35-40 to 50-55
  - Severe; 20-25 to 35-40
  - Profound <20-25
Autistic Disorder

- Symptoms from A, B, and C below:
  - qualitative impairment in social interaction
  - qualitative impairments in communication
  - restricted repetitive and stereotyped patterns of behavior, interest and activities
Autistic Disorder

- Delays or abnormal functioning in one of following areas with onset before age 3:
  - social interaction
  - language
  - symbolic play
Asperger’s Syndrome

- Qualitative impairment in social interaction.
- Restricted repetitive and stereotyped patterns of behavior, interests, and activities.
Asperger’s Syndrome

- There is no clinically significant general delay in language.
- There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior, and curiosity about the environment in childhood.
Reactive Attachment Disorder

- Markedly disturbed and developmentally inappropriate social relatedness in most contexts:
  - Persistent failure to initiate or respond in a developmentally appropriate fashion to most social interactions
  - Diffuse attachments as manifest by indiscriminate sociability with marked inability to exhibit appropriate selective attachments
Reactive Attachment Disorder

- Pathogenic care as evidenced by at least one of the following:
  - Persistent disregard of the child's basic emotional needs for comfort, stimulation, and affection
  - Persistent disregard of the child's basic physical needs
  - Repeated changes of primary caregiver that prevent formation of stable attachments
Reactive Attachment Disorder

- The pathogenic care is responsible for the disturbed behavior.
- **Subtypes:**
  - Inhibited
  - Disinhibited
That’s true, Andre, that is not one of the listed side effects.
Medication Classifications

- ADHD Medications
- Antipsychotics
- Antidepressants
- Mood stabilizers
- Other Commonly Used Agents
ADHD Medications

• Psychostimulants
• Other
  – atomoxetine (Strattera)
  – alpha-agonists
  – antidepressants
Psychostimulants

- Methylphenidate preparations
  - Ritalin
  - Concerta
  - Metadate
  - Methylin
  - (dexmethylphenidate) Focalin
Psychostimulants

- Amphetamine preparations
  - d-amphetamine (Dexedrine)
  - mixed l- and d-amphetamine salts (Adderall)
Psychostimulants

• Common side effects
  – anorexia and weight loss
  – insomnia
  – irritability
  – headaches, stomach aches
  – increased HR, BP
  – tics
• May cause psychosis
Strattera

- Side Effects
  - stomach upset
  - decreased appetite
  - mood swings
  - fatigue, insomnia
  - increased heart rate, blood pressure
Antipsychotics

• Common uses
  – psychosis
  – mania
  – aggression
  – tics
Antipsychotics

Neuroleptics

- chlorpromazine (Thorazine)
- thioridazine (Mellaril)
- mesoridazine (Serentil)
- perphenazine (Trilafon)
- fluphenazine (Prolixin)
- haloperidol (Haldol)
- pimozide (Orap)
- trifluoperazine (Stelazine)
- thiothixene (Navane)
Antipsychotics

• Common side effects
  – sedation
  – extrapyramidal side effects, dystonia
  – akathisia
  – weight gain
  – hypotension
  – cognitive dulling
  – affective blunting
  – elevated prolactin
Antipsychotics

- Severe adverse effects
  - tardive dyskinesia
  - hepatotoxicity
  - agranulocytosis
  - ocular pigmentation
  - neuroleptic malignant syndrome
  - sudden death
Antipsychotics

• Atypical
  – risperidone (Risperdal)
  – olanzepine (Zyprexa)
  – quetiapine (Seroquel)
  – ziprasidone (Geodon)
  – clozapine (Clozaril)
  – aripiprazole (Abilify)
Antipsychotics

- Common side effects
  - extrapyramidal side effects (high dose)
  - hypotension
  - low white blood cell count
  - elevated prolactin
  - weight gain
  - elevated lipids
  - insulin resistance, diabetes mellitus II
Antidepressants

• Common uses
  – depression
  – anxiety (SSRIs)
  – ADHD (bupropion, TCAs)
  – enuresis (TCAs)
  – insomnia (TCAs, trazodone, mirtazapine)
Antidepressants

- Selective serotonin reuptake inhibitors
- Serotonin/norepinephrine reuptake inhibitors
- Atypical
- Tricyclic antidepressants
- Monoamine oxidase inhibitors
- Others
Antidepressants

• Selective serotonin reuptake inhibitors
  – fluoxetine (Prozac)
  – sertraline (Zoloft)
  – paroxetine (Paxil)
  – fluvoxamine (Luvox)
  – citalopram (Celexa)
  – escitalopram (Lexapro)
Antidepressants

- SSRI side effects
  - nausea, vomiting
  - dizziness
  - insomnia/sedation
  - GI upset
  - weight loss
  - serotonin syndrome
Antidepressants

• Serotonin/norepinephrine reuptake inhibitors
  – venlafaxine (Effexor)
  – duloxetine (Cymbalta)
Antidepressants

• Atypical antidepressants
  – bupropion (Wellbutrin)
  – trazodone (Desyrel)*
  – nefazodone (Serzone)
  – mirtazapine (Remeron)*

* - highly sedating, often used for treating insomnia
Antidepressants

• Tricyclic antidepressants
  – imipramine (Tofranil)
  – desipramine (Norpramin)
  – nortriptyline (Pamelor)
  – amitriptyline (Elavil)
  – clomipramine (Anafranil)
Antidepressants

• Tricyclic antidepressants - side effects
  – dry mouth, dry eyes, constipation, blurred vision
  – cardiac conduction abnormalities
  – confusion
Antidepressants

- Monoamine oxidase inhibitors
  - tranylcypromine (Parnate)
  - phenelzine (Nardil)
  - pelegeline (Ensam)
Antidepressants

• Monoamine oxidase inhibitors
  – rarely used in adolescents
  – tyramine reaction – need special diet
Antidepressants

• Other
  – Symbyax
    • Combination medication – fluoxetine/olanzepine
    • fixed dosages
Mood Stabilizers

• Uses:
  – bipolar disorders
    • mood disorders
    • mania
    • mood instability
  – aggression
Mood Stabilizers

- LiCO₃
- divalproex sodium (Depakote)
- carbamazepine (Tegretol)
- topiramate (Topamax)
- oxcarbazepine (Trileptal)
- lamotrigine (Lamictal)
Mood Stabilizers

• $\text{LiCO}_3$
  – treatment of acute manic and depressive episodes
  – prevention of recurrence
  – reduction of mood instability between episodes
  – excreted by the kidney
Mood Stabilizers

- LiCO$_3$ side effects
  - neurologic
  - gastrointestinal
  - renal
  - cardiovascular
  - endocrinologic
  - dermatologic
  - other
Mood Stabilizers

- **Divalproex sodium side effects**
  - neuropsychiatric
  - hematologic
  - gastrointestinal
  - hepatic
  - dermatologic
  - other
Mood Stabilizers

• Carbamazepine side effects
  – neurological
  – gastrointestinal
  – hematologic
  – dermatologic
  – hepatic
Other Commonly Used Agents

- $\alpha$ – agonists
  - clonidine (Catapres)
  - guanfacine (Tenex)
- propranolol (Inderal)
- desmopressin (DDAVP)
- benztropine mesylate (Cogentin)
α - Agonists

• Uses:
  – ADHD
  – PTSD
  – tic disorders
  – aggression
  – insomnia
α - Agonists

• Side effects
  – sedation
  – irritability
  – dizziness
  – sleep disturbance

  – dry mouth
  – hypotension
  – bradycardia
  – prolonged PR interval
Desmopressin

- DDAVP
- Synthetic analogue of vasopressin
  - concentration of urine
  - oral or nasal spray
- High risk of relapse on discontinuation
Desmopressin

• Adverse effects
  – headaches
  – stomach upset
  – nasal stuffiness*
  – nose bleeds*
  – water intoxication
  – hyponatremic seizures

* – nasal spray contraindicated for enuresis
Propranolol

- β blocker
- dosages to 640 mg/d
- used for aggression:
  - mental retardation
  - autism
  - central nervous system dysfunction
- onset of the antiaggressive effect - 4 to 8 weeks
Propranolol

- Side effects
  - bradycardia
  - hypotension
  - blood pressure
  - bronchospasm
  - lethargy
  - nightmares
Partnering in Care

• Preparing for the first visit
  – explain the purpose
    • address guilt feelings, not a punishment
    • tell your child what
  – gather information for the doctor
    • list of symptoms
    • history of your child's previous illnesses and medical conditions
    • list of current medications
    • family history of illnesses (if known)
Partnering in Care

• Preparing for the first visit
  – be organized and focused when giving the history
  – keep a log of your child’s treatments and how he or she responded
  – keep copies of diagnostic and lab tests
  – keep your child’s physician informed
  – connect all the doctors to your child’s primary care physician
Partnering in Care

- Follow-up care
  - stay on top of appointments
  - follow through on giving the medication as prescribed
  - be an informed consumer
  - ask questions
  - feel free to request a second opinion
Partnering in Care

- Partnering in care
  - ask questions about the diagnosis and proposed treatment
  - encourage your child to ask questions
  - ask about goals and objectives
  - ask about “wrap around” or other individualized services
  - help your child learn about their condition