Rational Psychopharmacology – blending of the new with the old

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Overview

- Purposes of prescribing legal medications
- Classes of medication and general use guidelines
- Bioavailability of drugs within the body
- Strategies for reviewing efficacy
  - Side effect issues
- Questions, questions....
PSYCHOACTIVE MEDICATIONS

Definition:

Any medication which has the capability to alter mood, anxiety, behavior or cognitive processes; usually denotes drugs used in the treatment of mental illness.
Reasons for Prescribing

Changing One’s Internal Experience

- Improve performance
- Pleasure and relaxation
- Sleep
- To decrease worry
- Sadness
- Out of control
- Pain relief
Making Evaluation

- Safety and trust
- Purpose of evaluation
- What is the distress?
- What has been tried, has it worked?...
- Who can consent to treatment.
Treatment Approach

- **Hypothesis driven**
  - Note observations
  - Behavioral changes are markers of medical illness

- **Expectations by patient, physician, family, support staff, others**

- **Be open to new sources of information**
  - Does the hypothesis need to be revised?
  - Consider side effects
  - Look for metaphors in description of medication effects.
OTC Psychoactive Medications

- Alcohol
- Nicotine
- Caffeine/No Doz/Cocaine
- Marijuana
- Antihistamines
- Cold Medications/Methamphetamine
- Diet Pills
- Tylenol/NSAIDS/Aspirin
- Codeine/Heroin
Neurobiological Effects

- Receptors and availability of neurotransmitter
  - Neurotransmitter synthesis
  - Release
  - Reuptake
  - Degradation
  - Modulation
Neurobiological Effects

- Pharmacokinetics
  - Relationship between drug dose and its plasma level
  - Deactivation by liver; excretion by kidneys
    - Hydroxylation, desmethylation, oxidation ($P_{450}$), deamination, followed by conjugation and glucuronidation
    - Clearance dependent on renal function and fluid balance
  - Gut absorption determines bioavailability
Neurobiological Effects

- **Pharmacodynamics**
  - Relationship between plasma concentration and physiologic effects
  - Receptors: saturability, specificity, reversibility, affinities for compounds
  - Potency of drug is dose or concentration required to produce an effect
Conditions & Medication classes

- **Psychosis**
  - Schizophrenia
  - Psychosis due to other (medical) condition; PTSD; Depression; drug interaction...

- **Potency**
  - Amount to have an observed effect (rigidity) in an animal model: range haldol > mellaril.

- **Efficacy**
  - How well medication works on clinical problem; most antipsychotics more effective on positive symptoms.
Conditions & Medication classes

Antipsychotics – Typicals (mg dose range)

- Haldol (0.5-40)
- Pimozide (0.5-8)
- Prolixin (1-40)
- Navane (3-60)
- Moban (50-250)
- Loxitane (5-300)
- Droperidol (2.5-10) -- IM
- Mellaril/Thorazine (100-800)
Conditions & Medication classes

Antipsychotics – Atypicals  (mg dose range)

- Clozapine (200-600)
- Risperidone (0.5-8)
- Zyprexa (5-35)
- Geodon (20-180)
- Seroquel (100-800)
- Abilify (5-10)
Conditions & Medication classes

- Depressive disorders
  - Major Depression
    - Recurrent v. single episode
    - With/without psychosis
  - Atypical Depression
    - Increased appetite, weight; similar cognitive sx.
  - Dysthymia
    - Chronic, “low-grade”; debilitating
- Schizo-Affective Disorder
  - Mood and psychotic symptoms have occurred separately, as well as overlapping
- Mood disorder due to medical condition
Conditions & Medication classes

Antidepressants

◆ Tricyclic antidepressants (TCA)
  [anticholinergic side effect profile]
  – ELAVIL (Amitriptyline): 50-300 mg/d
    sedation; pain
  – NORPRAMINE (Desipramine): 75-300 mg/d
  – TOFRANIL (Imipramine): 75-300 mg/d
  – PAMELOR (Nortriptyline): 50-200 mg/d
  – ANAFRANIL (Clomipraminet): 75-300 mg/d
    obsessions, compulsions
Conditions & Medication classes

Antidepressants

- Selective Serotonin Reuptake Inhibitors (SSRI)
  - PROZAC (fluoxetine): 10-80 mg/d
  - PAXIL (paroxetine): 10-60 mg/d
  - ZOLOFT (sertraline): 50-200 mg/d
  - CELEXA (citalopram): 10-40 mg/d
  - LEXAPRO (L-form; escitalopram)
  - LUVOX (fluvoxamine): 50-300 mg/d
Conditions & Medication classes

- Antidepressants
  - Combined Reuptake Inhibitors (CRI) or Serotonin-Noradrenalin Reuptake Inhibitors (SNRI)
    - SERZONE (nefazodone): 100-600 mg/d
    - EFFEXOR (venlafaxine): 75-225 mg/d
    - REMERON (mirtazapine): 15-45 mg/d
Conditions & Medication classes

- **Antidepressants**
  - **Monoamine Oxidase Inhibitors (MAOI)**
    - MARPLAN (Isocarboxazid): 10-60 mg/d
    - NARDIL (Phenylzine): 45-90 mg/d
    - PARNATE (Tranylcypromine): 20-50 mg/d
    - sx sx depress with incr. eating, incr. sleeping
Conditions & Medication classes

Antidepressants

- Miscellaneous agents
  - WELLBUTRIN (Bupropion): 75-400 mg/d
  - DESYREL (Trazodone): 100-600 mg/d
    [used for sleep]
  - LUDIOMIL (Maprotiline): 100-225 mg/d
Conditions & Medication classes

- **Anxiety**
  - Necessary to recognize danger/threat.
  - Modulated, responsive; has a purpose.

- **Generalized Anxiety Disorder**

- **Panic Disorder**

- **PTSD**

- **OCD**

- **Anxiety due to medical condition**
Conditions & Medication classes

**Anti-anxiety**

- Benzodiazepines
  - Alprazolam (Xanax): 0.25 – 4 mg/d
  - Lorazepam (Ativan): 0.5 – 8 [16] mg/d
  - Diazepam (Valium): 5 – 40 mg/d
  - Clonazepam (Klonopin): 0.5 – 4 mg/d
Conditions & Medication classes

- **Anti-anxiety**
  - Buspirone (20 – 80 mg/d)
    - BUSPAR
  - Beta-blockers (>240 mg/d little change BP)
    - INDERAL, INDERAL-LA
  - Tricyclic antidepressants
  - SSRI, SNRI (CRI)
  - Antiepileptic drugs
Conditions & Medication classes

- **Impulsivity**
  - Intermittent Explosive Disorder
    - Reactive, unpredictable, often violent.
    - May have specific antecedent; may be severe variant of PTSD response.
  - Impulse Control Disorder
    - Generalizes across activities; crossing of boundaries; repetitive; sometimes can be suppressed.
  - Addictions...
Conditions & Medication classes

- **Impulsivity**
  - Anticonvulsants
    - Depakote, Topamax, Tegretol, Lamictal
  - Antipsychotics
    - Quetiapine, Risperidone, Olanzapine, Chlorpromazine, Abilify
  - Beta-blockers
    - Propranolol
  - Mood stabilizers
    - Lithium, Depakote, Lamictal
Conditions & Medication classes

- **Mania**
  - Change in activity level; sleep-wake cycle; eating, resting, exercise.
  - Thoughts racing, grandiose, beyond possible; in extreme $\Rightarrow$ psychosis.
  - Concentration impaired; language derailed.
  - May be due to medications; medical condition; medication interactions.

- **Hypomania**
  - Remains below level of extreme impairment.
Conditions & Medication classes

- **Mania – mood stabilizers**
  - **Lithium**
    - LITHOBID, ESKALITH
    - measure electrolytes, renal fx; levels

- **Antiepileptic Drugs**
  - TEGRETOL, DEPAKOTE, LAMICTAL, NEURONTIN, TOPAMAX, KLOPONOFIN, TRILEPTAL
    - measure levels; monitor liver fx;
    - therapeutic range
Conditions & Medication classes

- **Agitation**
  - Identify driving force.
  - Restless inability to sit still; usually with a pressure to keep doing something.
  - Drug-drug interaction or side effect.
  - Intense, relentless.
  - Internal and external sources.
  - Evaluate for untreated anxiety or depression.
Conditions & Medication classes

- **Anti-agitation -- examples**
  - Clonidine – alpha blocker
  - Inderal – beta blocker
  - Ativan - benzodiazepine
  - Depakote/Tegretol - anticonvulsant
  - Lithium – mood stabilizer
  - Tylenol – pain and inflammation
  - Zyprexa - antipsychotic
Conditions & Medication classes

- **Sleep problems**
  - **Disorders of Initiating and Maintaining Sleep (DIMS)**
    - Depression
    - Sleep apnea
    - Pain
  - **Disorders of Excessive (Daytime) Sleepiness**
    - Narcolepsy
    - Catalepsy
    - Medications
    - Shift-work; not enough sleep
Conditions & Medication classes

**Sedative – Hypnotics**

- Restoril
- Ambien
- Lunesta
- Benadryl
- Atarax
- Chlortal hydrate
- Ativan
- Trazodone
Side Effects of Medications

- Changes in Blood Pressure
- Sedation

- **Weight Gain or Loss:**
  - secondary health risks
  - Metabolic Syndrome monitoring – atypicals
    - Weight, pre-Diabetes, Hypertension
Side Effects of Medications

- **Dermatologic**
  - Mild rashes → severe bullous sloughing
- **Hematologic**
  - Bone marrow suppression [VPA; Cloz]
- **Cardiac**
  - Blood pressure: increase or decrease
  - Arrhythmias
- **GastroIntestinal**
  - Diarrhea, nausea, vomiting [AEDs; SSRIs]
- **Hepatic**
  - Evaluate acute versus chronic
  - Influence of alcohol
Side Effects of Medications

- Prolonged Seizure
- CNS Disturbances
  - Confusion, disinhibition [Benzos; toxic levels]
- Neuroleptic Malignant Syndrome
  - Fever; Dry as a bone; Mad as a hatter; Hypertension
  - Consider particularly during medical crisis (primary symptoms may be blocked)
Side Effects of Medications

- Addiction/dependence
- Water Intoxication
  - Lithium; psychogenic polydipsia
- Difficulty Urinating [increase or decrease]
- Dry Mouth
Side Effects of Medications

- Involuntary movements
  - Tardive dyskinesia
  - Tardive dystonia
  - Akathisia
  - Acute EPS

- Tremors
  - Interference with functioning
Drug-Drug Interactions

- Date start any and all medications
  - Over the counter
  - Food supplements
- Change in dose
  - Increase of decrease
  - Associated symptoms
- Onset of symptoms
Drug-Drug Interactions

- **Rate of change in symptoms**
  - Better; Worse
  - Time of day

- **Changes in environment**
  - New stressors
  - Changes in supports
    - Did new staff receive full training?

- **History of past reactions**
Factors Affecting Dosage and Administration

- Age
- Medical conditions
- Amount of time the body takes to metabolize the drug
- Route
- Hydration
Potential Implications of Missed Doses

- **Compliance Issues**
  - Patient; team; guardian

- **Need to maintain therapeutic levels**
  - Check if change in behavior without explanation

- **Clinical diagnosis made upon the patient’s presentation in drug-missing state**
  - Document need for ongoing use of medicine
Nursing Assessment

- Observation.
- Data collection.
- Education: patient/staff/caregivers.
- Accurate transfer of information.
- Common sense & skills & past experiences.
Conclusions

- Psychotropic medications should be used to improve an individual’s functioning and quality of life.

- Medications should be used in conjunction with other therapies.
Conclusions

- “Start low and go slow”.

- Monitor regularly for side effects and need for usage.

- Don’t continue to administer unneeded drugs (“first do no harm”).
Theoretical Model of Mental Retardation
AAMR 2002*

Intellectual Abilities

Adaptive Behavior

Participation, Interactions, Social Roles

Health

Context

Supports

Individual Functioning