Psychiatric Medications: Quick & Dirty review

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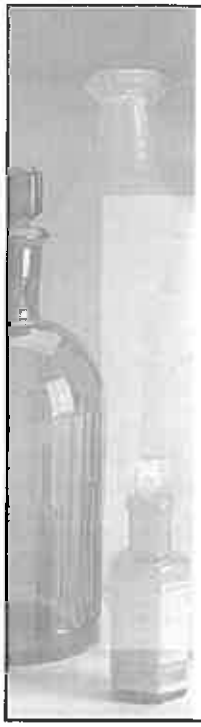


RCN document

- "Health problems might be accompanied by unusual signs and symptoms, for example someone with severe learning disabilities might demonstrate discomfort by self-injuring."

Challenging Behaviors

- SIB
- Aggression
- Refusals
- Withdrawal or irritability
- Yelling
- "Non-compliance": changes in sleep pattern, appetite, or activity level

Pain Assessment *

Indicators of pain:

- SIB or aggression
- Refusals
- Withdrawal or irritability
- Yelling
- "Non-compliance": changes in sleep pattern, appetite, or activity level
- Denial, inability to communicate or high pain tolerance?

Things that make you say Hmmm…

- Prevalence of mental illness in individuals with developmental disabilities is high.
- Use of psychiatric medication has been reported as approaching 26-40% in community residential placements and 35-50% in institutions in North America.
- Aggression, self-injurious behaviour, over activity, and sleep disturbances are all common.

Mental Illness

O'Hara, McCarthy & Bouras, 2010; p.167-169, p.171

Mental illness	Prevalence
ADHD	15-60 %
Anxiety disorders	3-35 %
Pica	9-25 %
Mood disorders	4-20 %
Psychotic disorders	1-4,4 %
Dementia	8-21 %
Personality disorders	1-22 %
OCD	0,2 (community) - 40 % (severe/ profound)
Severe CB	10-22,5 %
Substance Abuse (ETOH)	Same rate as general population

Things that make you say Hmmm…

Behavioural changes are often linked to underlying cognitive (thinking) changes, and mood changes occurring in the context of:

- adverse reactions to prescribed medications
- distress arising from a physical illness
- distress arising from mental illness

Pharmacokinetics

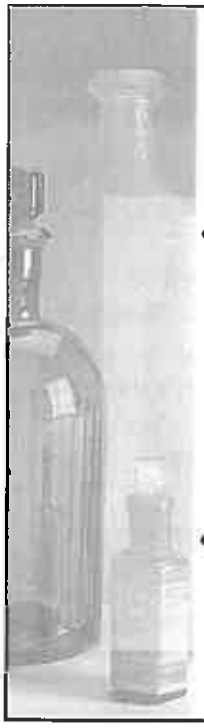
- Def'n: the study of the metabolism & action of drugs, with particular emphasis on the time required for absorption, duration of action, distribution in the body & method of excretion

  (Taber's medical dictionary, 1989)

Pharmacokinetics

What the body does to the drug…..

- Absorption
- Distribution
- Metabolism
- Excretion



Pharmacokinetics

- **Absorption:** the rate at which the medication enters the systemic circulation: via the digestive tract, the respiratory system, the skin or other routes of administration

- **Bioavailability:** the fraction of the dose that reaches systemic circulation.

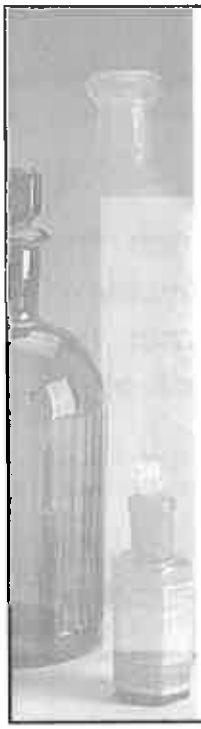
Absorption:

GI tract:
- Oral
- Sublingual
- Buccal
- Rectal

Respiratory:
- Inhalation
- Intranasal

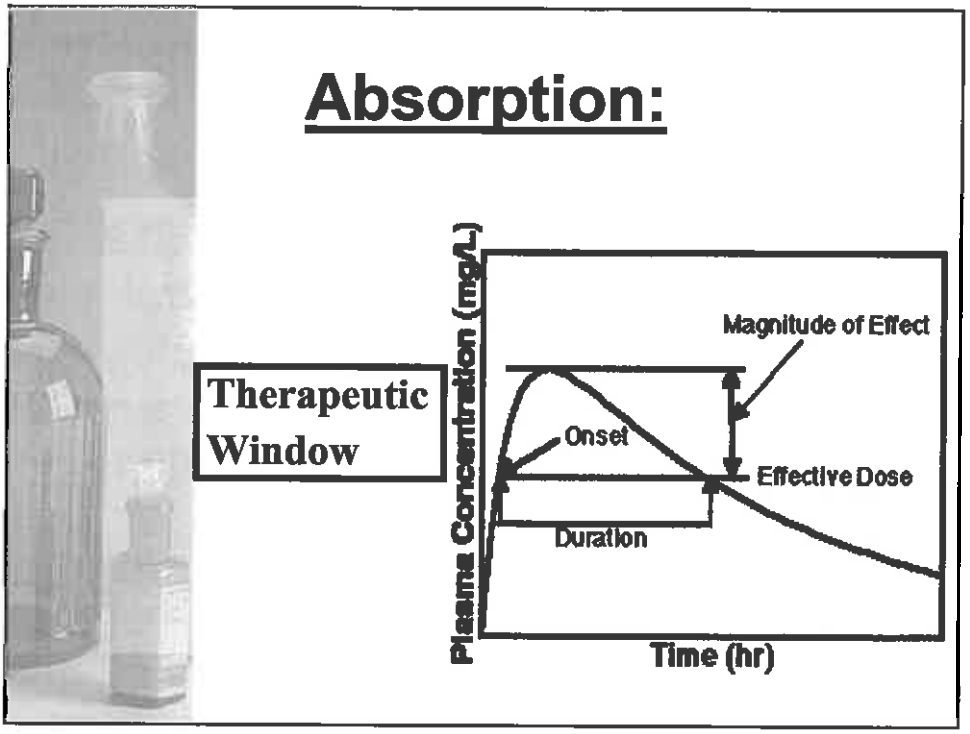
Integumentary:
- Transdermal
- Subcutaneous
- Intramuscular
- Intravenous

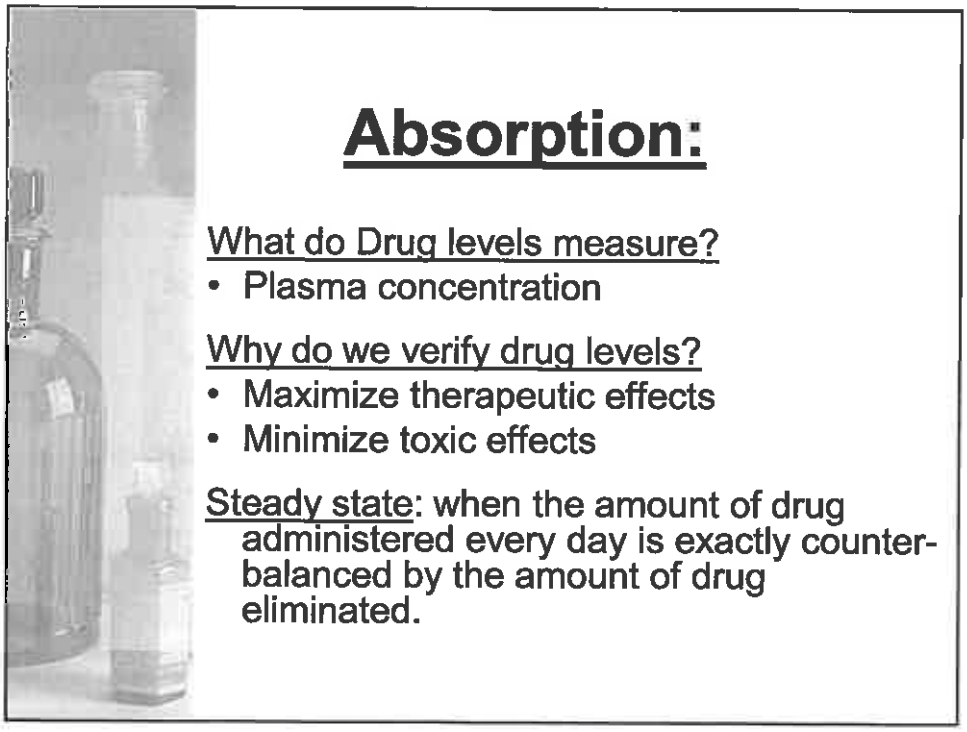
Other:
- Epidural, intrathecal
- Intrasynovial, intracardiac
- Eye, ear, vagina, urethra



Psychotropic medications

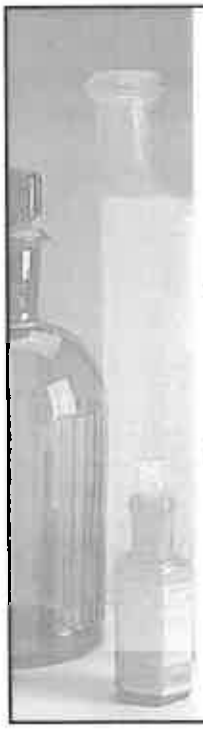
- **onset of action** - time required for medication to have an optimal effect.
- **duration of action** - determines appropriate dosing intervals (minimum time between doses of medication).
- **therapeutic range** - level of medication in the blood & brain achieved over a period of time by prescription of a specific dose of medication. This range is characterized by:
  a) *a therapeutic threshold* below which the drug has a suboptimal effect
  b) *a toxic threshold* above which adverse effects increase in the absence of any further positive effects


Absorption:
Therapeutic Window
Plasma Concentration (mg/L)
Magnitude of Effect
Onset
Effective Dose
Duration
Time (hr)


Absorption:
What do Drug levels measure?
• Plasma concentration
Why do we verify drug levels?
• Maximize therapeutic effects
• Minimize toxic effects
Steady state: when the amount of drug administered every day is exactly counter-balanced by the amount of drug eliminated.

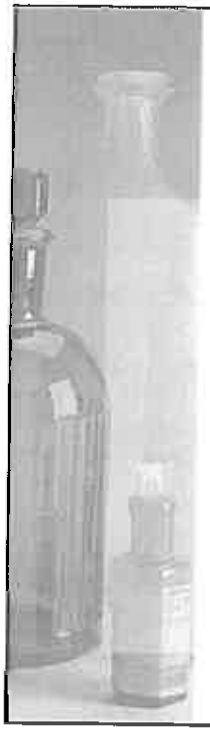
Pharmacokinetics

Distribution: the rate at which a drug moves from the central compartment (blood & highly perfused organs: brain, heart, liver, lungs, kidneys) into the peripheral compartments (muscle, bone, tendons).



Metabolism:

- Hepatic enzymes = Cytochrome P450 system (CYP-450) (about 30 different enzymes).
- Drugs metabolized by an enzyme are *substrates* of that enzyme



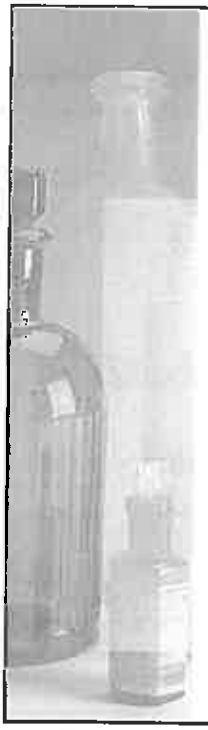
Metabolism:

Possible drug/metabolite interactions:

Competition: substrates compete for same enzyme (2nd substrate can be less 'effective')

Inhibition: blocking enzyme activity (may cause toxicity)

Induction: accelerated metabolism of drugs or their substrates (decreases drug effect as it is metabolized quicker & then eliminated, ex. smoking & clozaril)



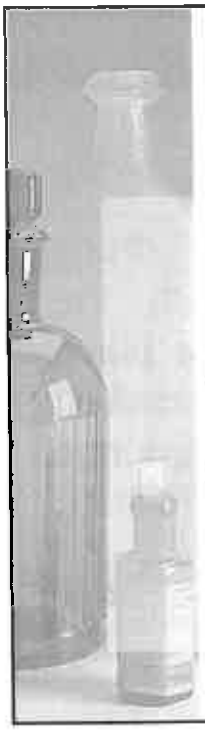
Pharmacokinetics

Excretion: the elimination of drugs and their metabolites from the body. Most excretion takes place in the kidney (urine) but excretion also occurs via skin (sweat), lungs (breath) & the digestive (biliary) system (feces).

Pharmacokinetics

Factors that can influence plasma concentration:

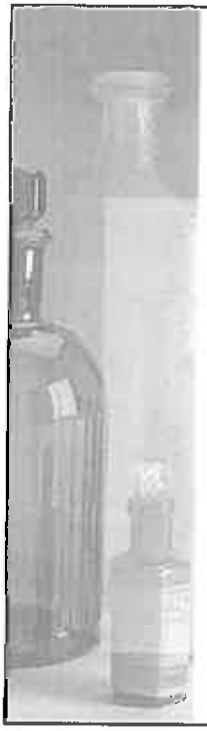
- Physiologic factors: age, weight, sex
- Drug-drug interactions (competition for binding at receptor sites, effects of cigarettes & ETOH)
- Patient's health status:
  - especially GI, cardiac, hepatic & renal diseases



Pharmacokinetics

Other factors that can influence plasma concentration:

- Drug absorption variation & presence of food in stomach
- Differences in the pt's ability to metabolize & eliminate the drug (genetics, race)



Case presentation

Ideas?

- _____
_____
_____
_____
_____
_____
_____
_____

Definitions of Mood-Stabilizer:

- Substance which is effective for one pole without inducing the other.
- Substance which is effective for both poles of the illness.
- Substance which is effective for both poles of the illness and for prophylaxis of recurrences.

Psychotropic Medication Classes

Mood Stabilizers

- Lithium Carbonate
- Carbamazepine (Tegretol)
- Valproic Acid (Epival, Depakene)
- Lamotrigine (Lamictal)
- Topiramate (Topamax)

Problems of Current Mood Stabilizers

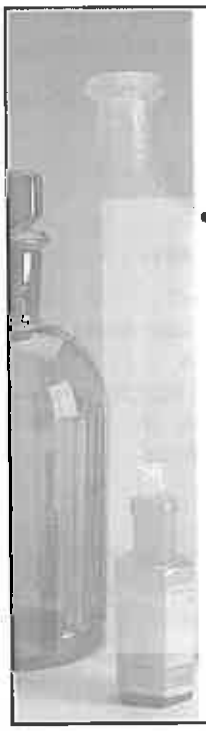
- Limited efficacy
- Toxicity
- Side effects: renal, thyroid, hematological, hepatic
- Monitoring
- Interactions
- Teratogeny
- Weight gain
- Poor compliance
- Refractoriness

Lithium

- **Therapeutic Range:** 0.7 – 1.2 mEq/L
- Clearance predominantly through kidneys (95%)
- Dosing adjusted based on renal function
  - Individuals with chronic renal insufficiency must be closely monitored
  - Reabsorption of lithium is increased and toxicity more likely in patients who are hyponatremic or volume depleted (ex. vomiting, diarrhea, diuretics)
- **Half life**
  - 12 – 27 hours
  - Increases to 36 hours in elderly persons (**renal function)
  - May be considered longer with long-term lithium use (up to 58 hr after one year of therapy)

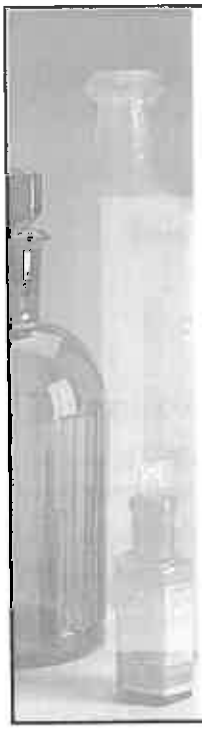
Lithium Toxicity

- **Closely related to concentration of lithium in the blood**
  - * Serum concentrations in excess of 2mmol/L
- **Preceded by appearance/aggravation of:**
  - Sluggishness, drowsiness, lethargy, coarse hand tremor or muscle twitching, loss of appetite, vomiting and diarrhea
  - **repeated episodes of lithium toxicity can cause kidney damage



Lithium Toxicity

- **Treatment:**
  - D/C lithium therapy
  - Support resp & cardiac functions
  - Depending on mental status, use ipecac syrup or gastric lavage
  - Follow with charcoal and saline cathartic if multiple ingestion
  - Restore fluid and electrolyte balance
  - *** Hemodialysis is treatment of choice when above measures fail**



Important considerations:

- 30-50% of persons with DD have epilepsy, so they may be receiving AEDs (Devinsky, 2002)
- Persons with DD may be 3-4 X more likely to have a psychiatric illness (Hellings, 1999)
- Persons with DD are more prone to drug side effects & are also often unable to articulate the effects of the drugs
- 40-60% of persons in general population show inadequate response to mood stabilizer Tx alone & require additional Rx (antipsychotics) (Hellings, 1999)

Bipolar Mood Chart

Client's Name: Month:

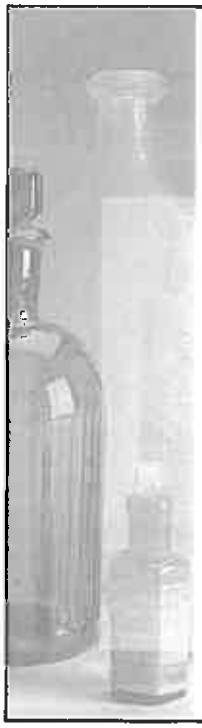
Each day, assess the client's mood state for that day by circling the appropriate mood scale item. Your rating should be based on observations for the entire day and evening. If the client is both manic and depressed during the day, carry out separate ratings based upon 12 hour time periods. When completing the log, please use the following anchor points for your mood rating.

+3 = markedly manic +2 = moderately manic +1 = mildly manic 0 = normal mood for the day

-1 = mildly depressed -2 = moderately depressed -3 = markedly depressed

+3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
+2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
+1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
-2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
-3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Developed by Hurley & Sovner



Antidepressants in Bipolar Depression

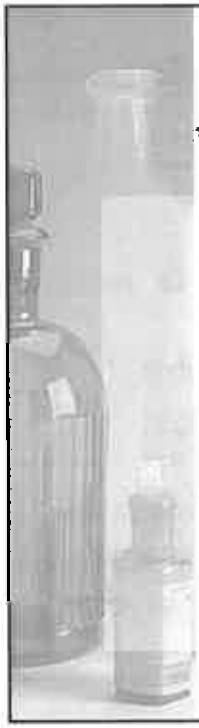
- **DO NOT** use in monotherapy
- Combine antidepressant with 1 or more mood stabilizers
- Try first SSRI or buproprion (wellbutrin)
- Beware of noradrenergic drugs and tricyclics
- Discontinue add-on SSRI after response (3-6 months) or may flip into (hypo)mania
- Consider combination with atypical antipsychotics

Classic & Newer AEDS

Classic AEDs
- Phenobarbital (PB)
- Ethosuximide (Zarontin®)
- Clonazepam (Rivotril®) -> benzo
- Phenytoin (Dilantin®)

N/A in Canada yet:
- Tiagabine (Gabitril®)
- Zonisamide (Zonegran ®)
- Rufinamide (Banzel®) (used for LGS)
- Lacosamide (Vimpat®)

Newer AEDs
- Primidone (Mysoline®) -> PB
- Clobazam (Frisium®) -> benzo
- Nitrazepam (Mogodon®) -> benzo
- Carbamazepine (Tegretol®) **(CBZ)**
- Divalproex (DVA)/Valproate/Valproic Acid (Epival®/Depakene®) **VPA** *>GI SE*
- Levetiracetam (Keppra®)
- Felbamate (Felbatol®) D/C d/t liver probs
- Vigabatrin (Sabril®) **Restricted** d/t vision probs
- Oxcarbazepine (Trileptal®) ->CBZ
- Gabapentin (Neurontin) -> gaba
- Lamotrigine (Lamictal®) ->no P450!
- Topiramate (Topamax®)
- Pregabalin (Lyrica®) ->gaba



Drug Levels

*need to be drawn 12hrs after last dose!

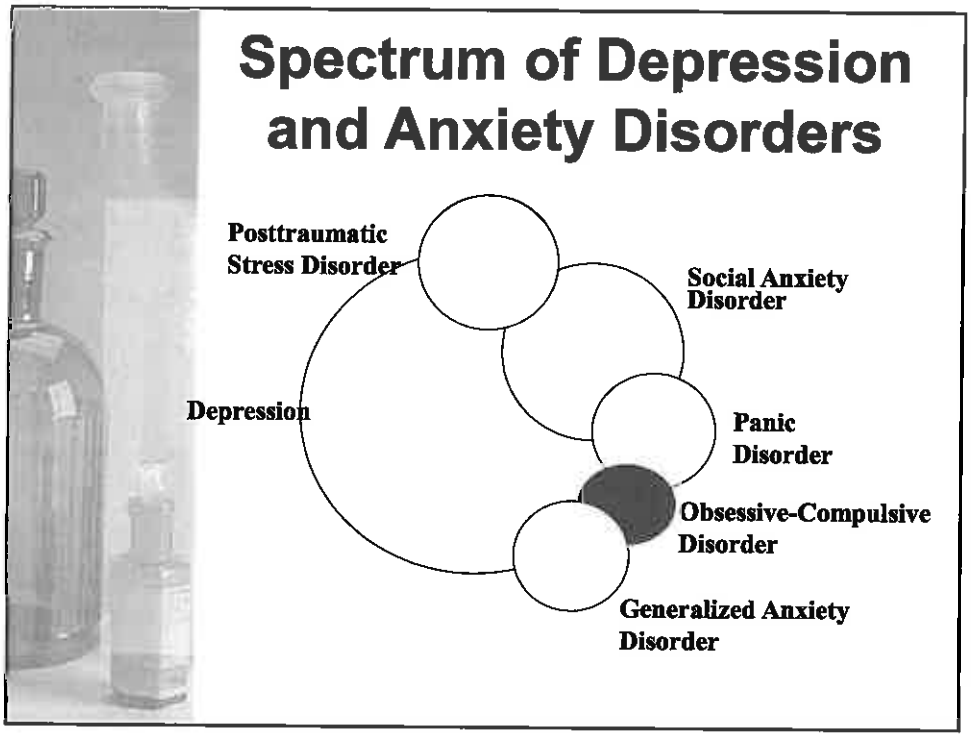
- Carbamazepine (CBZ)
  17-54 µmol/L
  4-12 mcg/ml
- Phenobarbitol (PB)
  65-150 µmol/L
  20-40 mcg/ml
- Phenytoin (PHT)
  40-80 µmol/L
  10-20 mcg/ml
- Valproic acid (VPA)
  350-800 µmol/L
  50-115 mcg/ml

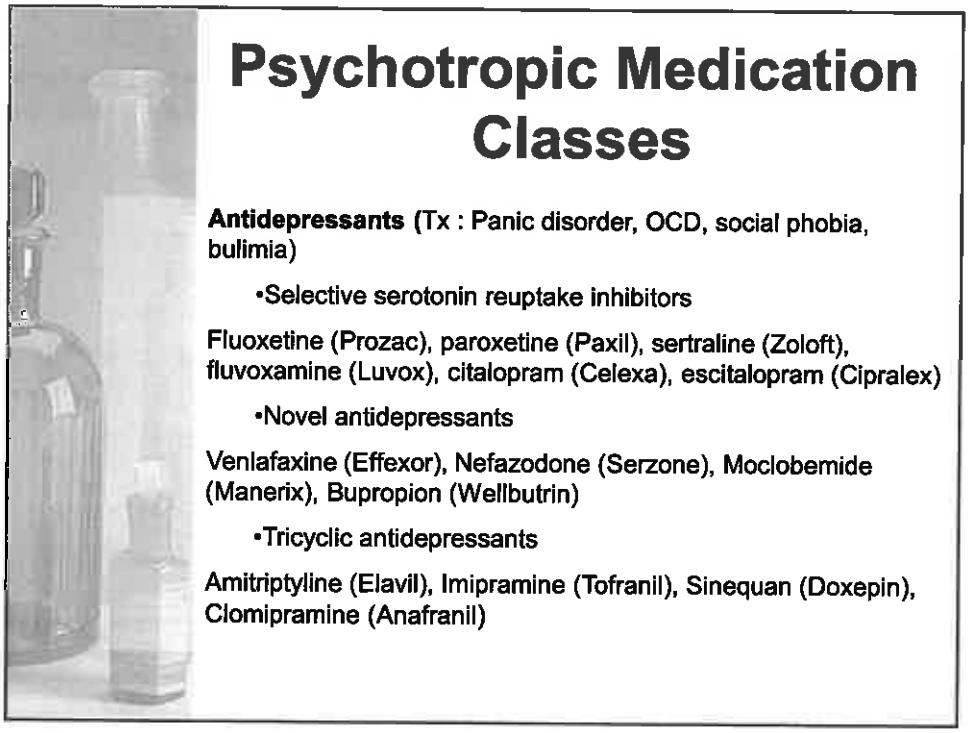
Medication	Systemic/Physical Effects	CNS Effects
Phenobarbital	Rash Sleep problems ↓ Vit D & K *Rare:* blood dyscrasias, liver toxicity	Sedation, ataxia, dizziness Nystagmus ↓ concentration & cognition Behavior Δ, irritability (kids)
Phenytoin (Dilantin)	Hirsutism Acne Gingival hyperplasia (50%) ↓ folate/T4/Vitamin D & K levels Rash Osteomalacia ↑ LFTs Blood dyscrasias	Ataxia, dizziness Nystagmus ↓ concentration Sedation Dyskinesia, tremor Arrhythmia N & V, diarrhea
Ethosuximide (Zarontin)	Anorexia *Rare:* Rash (SJS), blood dyscrasias, behavioral Δ (kids)	Drowsiness, dizziness Hiccups Headache N & V, diarrhea

Medication	Systemic/Physical Effects	CNS Effects
Clonazepam (Rivotril)	Drooling *Rare:* Rash Paradoxical anger Thrombocytopenia Depression	Sedation, dizziness Risk of aspiration Paradoxical reaction: disinhibition ↓ concentration Anterograde amnesia Ataxia Nystagmus
Carbamazepine (Tegretol) *CR tab < GI & CNS effects	Pruritic rash ↓ WBC, ↓ Vit D *Rare:* Aplastic anemia, ↑ LFTs (GGT/ALK), Hyponatremia (SIADH) Cardiac abnormalities ↓ T3/T4/Vit K Alopecia, ocular effects, Osteomalacia	 N & V Diplopia Ataxia Sedation, dizziness Dyskinesia Nystagmus

Medication	Systemic/Physical Effects	CNS Effects
Valproic Acid (Depakene) *(VPA > GI SE)* Divalproex (Epival)	Alopecia Abdominal cramps Hyperammonemia Menstrual disturbances ***Rare:*** ↓ platelet & WBC Hepatotoxicity Pancreatitis Low carnitine **CAUTION:** PCOS Obesity (more common in ♀) *SJS w/ Lamotrigine	Sedation, fatigue Dizziness, ataxia N & V Confusion Headache Tremor
Gabapentin (Neurontin)	Edema Weight gain Rash Behavior Δ, irritability (kids) ↓ WBC Low platelets (rare) ECG changes (rare)	Lethargy, fatigue Dizziness, ataxia Headache N & V Diplopia Tremor Slurred speech

Medication	Systemic/Physical Effects	CNS Effects
Lamotrigine (Lamictal)	**Rash (1st month: gen. red morbilliform) Abdominal pain Alopecia ***Rare:*** SJS & toxic epidermal necrolysis Hepatotoxicity Tics in kids	Dizziness, Ataxia N & V Asthenia Headache Lethargy, fatigue Blurred vision, diplopia
Topiramate (Topamax)	Diarrhea Weight loss Kidney stones Glaucoma Rare: ↑ LFTs	Drowsiness, fatigue Headache Dizziness, ataxia Agitation Behavioral Δ Paresthesias (fingers, toes) Cognitive deficits (memory, concentration, word-finding)


Spectrum of Depression and Anxiety Disorders
Posttraumatic Stress Disorder
Social Anxiety Disorder
Depression
Panic Disorder
Obsessive-Compulsive Disorder
Generalized Anxiety Disorder


Psychotropic Medication Classes
Antidepressants (Tx : Panic disorder, OCD, social phobia, bulimia)
•Selective serotonin reuptake inhibitors
Fluoxetine (Prozac), paroxetine (Paxil), sertraline (Zoloft), fluvoxamine (Luvox), citalopram (Celexa), escitalopram (Cipralex)
•Novel antidepressants
Venlafaxine (Effexor), Nefazodone (Serzone), Moclobemide (Manerix), Bupropion (Wellbutrin)
•Tricyclic antidepressants
Amitriptyline (Elavil), Imipramine (Tofranil), Sinequan (Doxepin), Clomipramine (Anafranil)

Pharmacotherapy for Obsessive-Compulsive Disorder

- **First-Line**
  - SSRI's
- **Second-line**
  - Clomipramine

Considerations

- Higher mean doses
- Delayed onset of response
- Residual symptoms common
- Often long-term (maintenance)

Pharmacologic Management of OCD

Drug	Dose Range (Frequency	Target Symptoms	Common Adverse Effect
Clomipramine	10-300 mg/d (qhs)	Obsessions, compulsions, ADHD, Nocturnal enuresis	Dry mouth, blurred vision, constipation, sexual dysfunction, orthostatic hypotension
Fluoxetine	10-80 mg/d (qam)	Obsessions, compulsions	Insomnia, nausea, headache, agitation, sexual dysfunction
Fluvoxamine	50-300 mg/d (qhs or bid)	Obsessions, compulsions	As above
Sertraline	50-200 mg/d (qam or bid	Obsessions, compulsions	As above
Paroxetine	10-40 mg/d (qam or bid)	Obsessions, compulsions	As above
Citalopram	10-40 mg/d (qam or bid)	Obsessions, compulsions	As above

Rationale for Antidepressant Use in Generalized Anxiety Disorder

- **GAD is comorbid w/ major depression in 62% of cases**
- **Clinical goal: treat both anxiety and depression**

When you see the anxiety,
don't miss the depression
When you see the depression,
don't miss the anxiety

Psychotropic Medication Classes

Antidepressants (Tx : Panic disorder, OCD, social phobia, bulimia)

•Selective serotonin reuptake inhibitors

Fluoxetine (Prozac), paroxetine (Paxil), sertraline (Zoloft), fluvoxamine (Luvox), citalopram (Celexa)

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Amitriptyline (Elavil), Imipramine (Tofranil), Sinequan (Doxepin), Clomipramine (Anafranil)

SSRIs, SNRIs, etc

Antidepressants

•Selective serotonin reuptake inhibitors

GAD

Panic disorder

OCD

Social phobia

Bulimia

SSRIs, SNRIs, etc

•Novel antidepressants

Desvenlafaxine (Pristiq), Venlafaxine (Effexor),

Duloxetine (Cymbalta)

Buproprion (Wellbutrin)

•Tricyclic antidepressants

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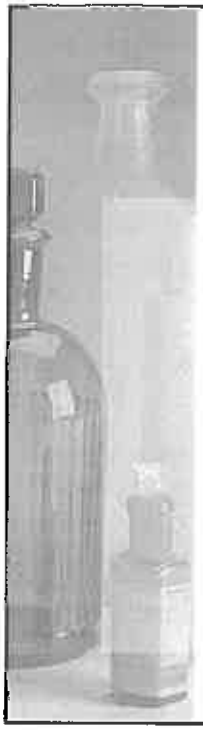
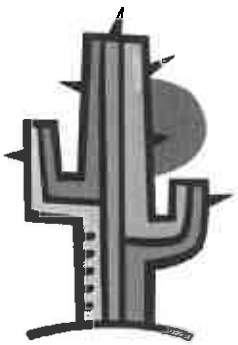


Anticholinergic Side Effects

- Blurry vision
- Nasal congestion
- Dry mouth
- Urinary retention
- Constipation*

(*deaths with Clozapine)



Rx : tricyclic antidepressants, antipsychotics

Serotonin Syndrome & Discontinuation syndrome

- **Serotonin syndrome**
  - Within 24hrs of start or increase (or additional Rx)
  - S/S: nausea, diarrhea, chills, sweating, dizziness, fever, increased BP, palpitations, increased muscle tone & twitching, tremor, hyperreflexia, restlessness, agitation, disorientation, confusion (muscle breakdown, coma & death!)
- **Withdrawal/discontinuation syndrome**
  - Within 1-7 days of abrupt D/C & for up to 3 weeks!
  - S/S: asthenia, dizziness, H/A, insomnia, tinnitus, N & V, irritability, disorientation, confusion, agitation, nightmares/vivid dreams, electric-shock sensations, chills, cramps, diarrhea

Psychotropic Medication Classes

Benzodiazepines

Target psychomotor agitation, anxious and fearful affects, and have a calming or sleep-inducing effect

Examples include:

- •Lorazepam (Ativan),
- •Diazepam (Valium),
- •Oxazepam (Serax),
- •Alprazolam (Xanax),
- •Clonazepam (Rivotril),
- •Midazolam (Versed)

Use of Benzodiazepines

- **Useful in many patients but not recommended first-line**
- **Use only for short periods of time (less than 4 months)**
- **Side effect profile**
  - **Sedation**
  - **Reduced coordination**
  - **Increased risk of falls**
  - **Impaired cognition**
- **Risk of dependency/tolerance**
- **Withdrawal symptoms/rebound anxiety**

****(decrease gradually: 10 - 25% every 1 - 4 weeks)**

Benzodiazepines

Class	Drug
1. Long half-life (>13hrs) & high potency	Clonazepam (Rivotril) Clobazam (Frisium) (*AED)
2. Long half-life (>13hrs) & low potency	Chlordiazepoxide (Librium) Diazepam (Valium) Flurazepam (Dalmane) Nitrazepam (Mogadon)
3. Short half-life (<13hrs) & high potency	Lorazepam (Ativan) Alprazolam (Xanax)
4. Short half-life (<13hrs) & low potency	Oxazepam (Serax) Temazepam (Restoril)

Indications for the Use of Benzodiazepines

ESTABLISHED INDICATIONS:	PROBABLE INDICATIONS:	POSSIBLE INDICATIONS:
•Panic disorder •GAD •Social phobia •Mania/excited schizophrenia	•Adjustment disorder w/ anxiety •Acute stress-related insomnia •Circadian rhythm disturbances	•Akathisia •Tourette syndrome •Severely excited states (ER)

Psychotropic Medication Classes

Antipsychotics

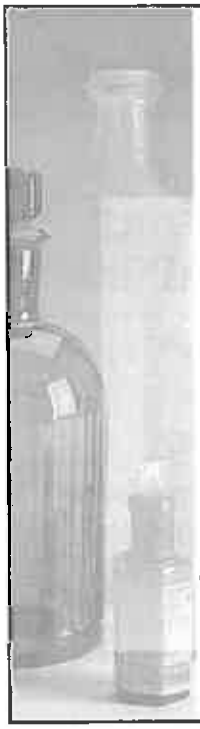
Target psychomotor agitation & aggressive behaviour, particularly in the presence of psychotic symptoms (hallucinations, delusions, and disorganized behaviour)

- **Traditional**

Haloperidol (Haldol), Chlorpromazine (Thorazine/Largactil), Methotrimeprazine (Nozinan), Trifluoperazine (Stelazine), Loxapine (Loxapac)

- **Atypical**

Clozapine (Clozaril), Risperidone (Risperdal), Paliperidone (Invega), Olanzapine (Zyprexa), Quetiapine (Seroquel), Ziprasidone (Zeldox/Geodon), Aripiprazole (Abilify)



Atypical Antipsychotic Medication

Risperidone (Risperdal)

Paliperidone (Invega)

Clozapine (Clozaril)

Olanzapine (Zyprexa)

Quetiapine (Seroquel)

Ziprasidone(Geodon)

Aripiprazole (Abilify)

Acute Dystonia

Clinical Signs/Symptoms			
Motor Symptoms	**Psychological Symptoms**	**Differential Diagnosis**	**Risk**
Briefly sustained or fixed abnormal movement e.g., torticollis (30%) tongue (25%) trismus/jaw (14.6%) oculogyric crisis (6%)	• fear • anxiety	• malingering • seizure • catatonia	• high potency first-generation antipsychotics (FGAP) • young males • first exposure to FGAP

Case presentation

Ideas?

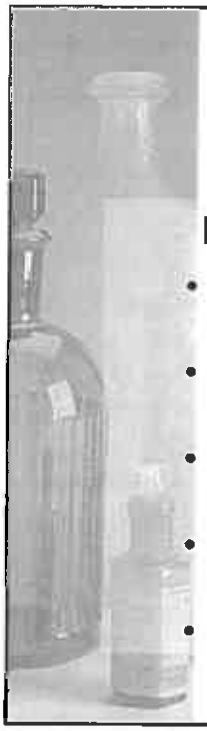
•

Akathisia

Clinical Signs/Symptoms			
Motor Symptoms	**Psychological Symptoms**	**Differential Diagnosis**	**Risk**
• Foot shifting • Pacing • Rocking	• Agitation • Restlessness • Decreased concentration	• Psychotic exacerbation	• High potency first-generation antipsychotics (FGAP) • Elderly • Female

Parkinsonism

Clinical Signs/Symptoms			
Motor Symptoms	**Psychological Symptoms**	**Differential Diagnosis**	**Risk**
• Tremor • Bradykinesia • Rigidity • Akinesia (masked facies, decreased arm swing)	• Poor concentration attention • Bradyphrenia	• Depression • Negative symptoms of psychosis	• High potency first-generation antipsychotics (FGAP) • Elderly • Female • Neurological disorders



Tardive Dyskinesia (TD)

Diagnostic Criteria:

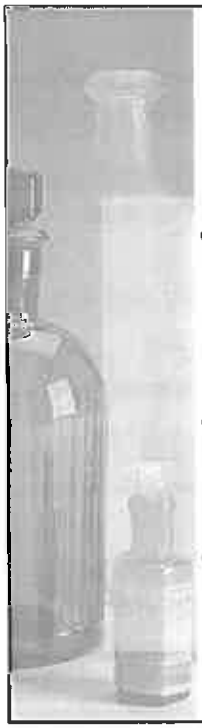
- History of 3 months total cumulative neuroleptic use
- Dyskinesia of lingual-facial-buccal muscle (most common), upper face, limb, trunk
- Movements which are repetitive, stereotyped in appearance and distribution
- Most common is choreoathetoid movements (classical TD)
- Gait is usually not affected

TD Risk Factors

Variable	Factor	Determinant of Increased Risk
Patient Characteristics	• Age • Gender • Diagnosis • Previous EPS • Diabetes	• Increased risk w/ age (>55) • Female (slightly higher) • Affective disorder • Risk 2 to 3 times higher • Risk 50-100% higher
Drug Characteristics	• Type of neuroleptic • Dose/Duration • Continuous vs. intermittent	• Typical neuroleptics have similar liability • Positive correlation with total drug exposure • Higher with intermittent treatment

Tardive Dystonia

Clinical Signs/Symptoms		Risks
Motor • Sustained muscle contractions • Blepharospasm • Sustained jaw opening (83%) • Torticollis (50-65%) • Arm hyperextension (42%) • Back arching/flexion/leaning (35%) • Hand flexion/grasp-like	**Psychological** • Distress • Mobility dysfunction • Embarrassment	• Abnormal birth • Abnormal development • Neurological disorders • Diagnosis of a developmental disability • Male, younger age • Earlier onset



Other side effects

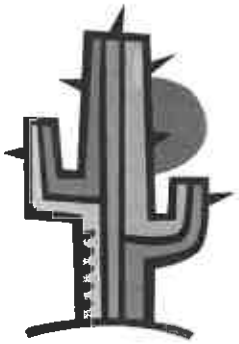
- Sedation, gait disturbance, orthostatic hypotension => increased risk of falls
- Metabolic issues: diabetes, hyperlipidemia, abdominal girth
- Anticholinergic side effects

Anticholinergic Side Effects

- Blurry vision
- Nasal congestion
- Dry mouth
- Urinary retention
- Constipation*

(*deaths with Clozapine)

Rx : tricyclic antidepressants, antipsychotics



NMS recall: F-E-V-E-R

Cause: **d/t blockage of dopamine receptor**

S/S:

- **F**ever: hyperthermia & diaphoresis
- **E**ncephalopathy: abrupt onset confusion, stupor
- **V**ital sign instability: BP unstable, tachycardia
- **E**nzyme elevation: CPK (creatinine phosphokinase)
- **R**igidity: "lead pipe" rigidity (generalized)

Rx for ADHD

Stimulants

- Ritalin/Concerta / Methylphenidate
- Dexedrine Dextroamphetamine
- Adderall/ amphetamine salts

SNRI : *Selective NE Reuptake Inhibitor*

- Strattera/ Atomoxetine

Adrenergic

- Clonidine

Stimulants

- Take effect within the first week (without mood/anxiety dx)
  - 75 % children
  - 25-78 % adults
- Can increase anxiety
- Should be taken with or after meals
- Dosage q. 2 – 6 h
- SE: anorexia (↓wt), abdominal pain, insomnia, irritability, sadness, can increase tics & induce psychotic episodes (rare)
- Check P, BP with ↑ dose

Side effects – Stimulants

- Nervousness, irritability
- Insomnia
- Anorexia & weight loss (*growth may be effected)
- Headache
- Hypertension, tachycardia
- Tics
- Dry mouth, blurry vision

Strattera : atomoxetine

- Blocks recapture of NE (↑attention, ↓impulsivity, activity)
- With/without meals
- Takes effect in **4 weeks**
- No withdrawal symptoms noted
- SE : headache, N & V, abdominal discomfort, anorexia (weight loss), labile mood, fatigue
- Precautions : hypertension, cardiovascular disease, hypotension, liver disorders, glaucoma

Side effects - Strattera

- **N & V, abdominal discomfort**
- **Loss of appetite**
- **Headache, dizziness**
- **Insomnia**
- **Fatigue, lethargy**
- Anticholinergic side effects
- Irritability, aggressiveness
- Palpitations
- Sexual dysfunction

Clonidine

- Vs hyperactivity & impulsivity
- Inhibition of noradrenergic transmission

Dosage :

- ADHD : 0,05-0,3mg/day
- Aggression : 0,15-0,4mg/day
- Anxiety: 0,15-0,5mg/day

- Takes effect in : 30-60 minutes (patch: 2-3jrs)
- Duration: 8 hours (patch : 7 days)
- SE : fatigue, hypotension, vertigo, dermatitis (patch), agitation, depression
- *withdrawal symptoms

Naltrexone

- Opiate Antagonist (blocks the sites)
- Used in severe cases of SIB (& in alcoholism)

SE :

N & V, abdominal discomfort, weight loss, insomnia, anxiety, depression, confusion, fatigue, headache, rare cases of panic attacks.

INDIVIDUALIZED Treatments!

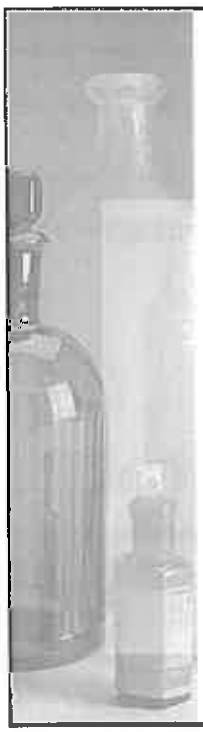
Non pharmacological

- **Multimodal approach**
- **Decrease stress / anxiety:**
  - **Sensory**
  - **Environmental modifications**
  - **Staff support & training**
- **Communication aids**
- **CBT , Psychotherapy**

Pharmacological

- Antidepressants
- Mood stabilizers
- Benzodiazepines
- Anxiolytics
- Antipsychotics
- Stimulants
- Monitoring side effects!

O'Hara, et al., 2010, Chapter 16



Monitoring of side effects

- Medication side effect monitoring
- MOSES
- SSRI side effect monitoring tool

Caregiver role

- **Observe for particular signs**
  - Grimacing
  - Body posturing/positions
  - New posture
  - Change in regular habits/behaviours
- **Note observations & tabulate data**
  - charts
    - Sleep, food diary, weight
    - Pain scale/checklist
    - Side effects of meds
- **Precision!**

Special concerns

- KNOW YOUR PT: Baseline lab values!
- PMHx
- HPI
- Behavior changes, concerns
- Think outside the box, too!
  (Insomnia Tx: socks!)
- Syndrome specific care!

Tools

- F/U sheet for clinic
- A-B-C sheets
- Scatterplot
- Pain assessment: NCAPC
- Sleep chart/ sleep hygiene
- Side effects of meds
- Food diary
- Bristol stool chart for BM monitoring
- Sz records
- Dementia screening