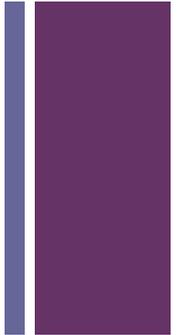


Medication and Side Effects

Monique E Simpson, MD



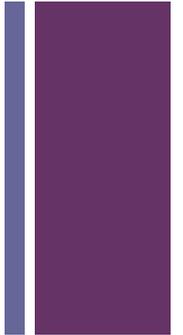
Overview



- Part I - Medication Classes
- Part II - Why do we care and what can we (you!) do?



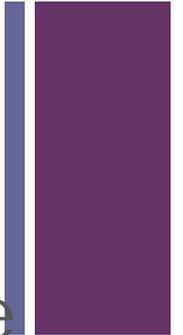
Part I - Medication Classes



- Antidepressants
- Antipsychotics
- Mood Stabilizers
- Other Medications



Antidepressants

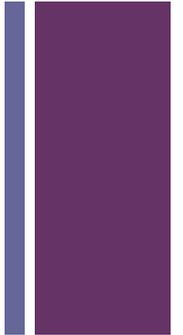


- Activities in the serotonin, norepinephrine and dopamine systems
- Function by affecting re-uptake or breakdown of these neurotransmitters in the brain
- Often take multiple weeks before *full effect* of medication is noted



Antidepressants -- SSRIs

Selective Serotonin Re-uptake Inhibitors

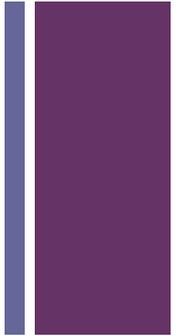


Common examples:

- Citalopram (Celexa)
- Escitalopram (Lexapro)
- Fluoxetine (Prozac)
- Sertraline (Zoloft)
- Paroxetine (Paxil)



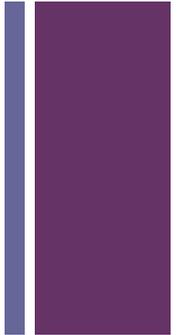
Antidepressants -- SSRIs



- First-line of treatment for depression & anxiety
- Relatively safe in overdose compared to TCAs
- Most common side effects:
 - Nausea/upset stomach
 - Insomnia/hypersomnia
 - Decreased *sexual function/desire*



Serotonin Syndrome



Potentially life threatening drug interaction, medical emergency

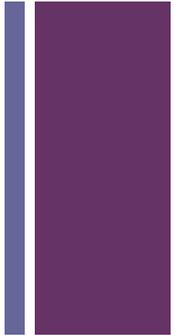
Relatively rare, typically occurs with combinations of serotonin-affecting medications although can be from a single medicine

Symptoms:

- Psychological — agitation, irritability, confusion, hyperactivity.
- Muscular — restlessness, shaking, jerking, tremor, incoordination.
- Other side effects — fever, rapid heart rate, increased blood pressure, sweating, nausea, diarrhea dilated pupils
- Seizures — this is a very rare side effect of serotonin medications.



Antidepressants -- TCAs



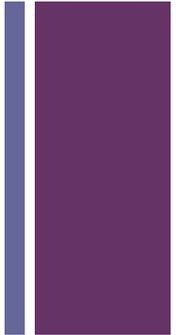
- Tricyclic Antidepressants

Common Examples:

- Amitriptyline (Elavil)
- Clomipramine (Anafranil)
- Doxepin (Sinequan)
- Imipramine (Tofranil)
- Nortriptyline (Pamelor)



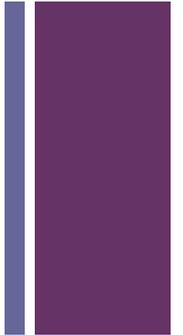
Antidepressants -- TCAs



- Typically second-line treatments for depression and anxiety due to side effects
 - Only really used for treatment refractory depression nowadays
- Most common side effects:
 - Dry mouth
 - Blurry vision
 - Constipation
 - Urinary retention
 - Drowsiness
 - Sexual dysfunction
- Cardio-toxic in overdose!



Antidepressants -- MAOIs



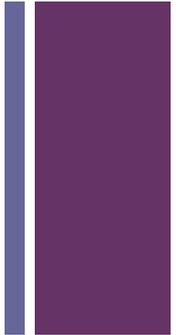
- Monoamine Oxidase Inhibitors

Common examples:

- Selegiline (Emsam, Anipryl)
- Phenzelzine (Nardil)



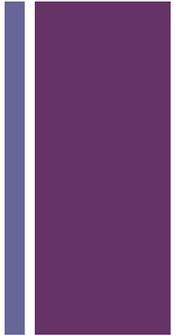
Antidepressants -- MAOIs



- Typically saved for cases of refractory depression due to possible dangerous side effects & interactions
- Risk of **hypertensive crisis**
...if combined with other antidepressant medications, cold medicines and tyramine containing foods (aged wines, meats and cheeses, etc)



Other Antidepressants



Selective Norepinephrine Uptake Inhibitors (SNRIs)

- Venlafaxine (Effexor), Desvenlafaxine (Pristiq), Duloxetine (Cymbalta)
- Benefits for pain disorders

Bupropion (Wellbutrin/Zyban)

- Effectiveness for smoking cessation
- Minimal sexual side effects
- Augmentation of other agents

Mirtazapine (Remeron)

- Effectiveness for sleep, appetite
- Commonly used in elderly & cancer patients.

Trazodone (Desyrel)

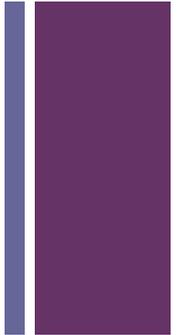
- Effectiveness for sleep

Buspirone (Buspar)

- Non-addictive treatment of anxiety, TID dosing, good for generalized anxiety



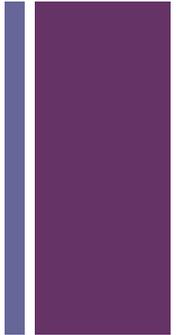
Antipsychotics



- Primary effects on the dopamine system, however do have effects on other neurotransmitter systems as well (serotonin, norepinephrine, histamine etc)
- First-line treatment for psychotic disorders as well as some role in treatment of the manic phase of bipolar disorder and agitation in the hospital



Antipsychotics -- Typical



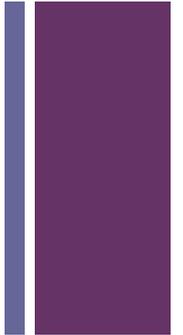
Typical antipsychotics (may also be referred to as conventional antipsychotics, first generation antipsychotics)

Common examples:

- Haloperidol (Haldol)
- Chlorpromazine (Thorazine)
- Perphenazine (Trilifon)
- Fluphenazine (Prolixin)



Antipsychotics -- Typical



Older antipsychotics...therefore cheap (off patent)

Higher risk of Extrapyramidal Symptoms (EPS -- movement problems) than atypical (newer) antipsychotics

Most Common side effects:

- Dry mouth
- Muscle stiffness/cramping
- Tremor
- Weight gain
- Akathisia
- Parkinsonism
- *Dystonia*

+ EPS - Extrapyramidal Symptoms

“Rule of Fours”

4mins/hrs -- Acute Dystonia

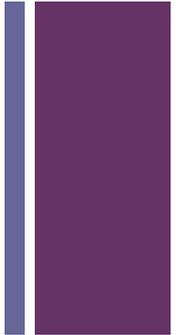
4hrs/days -- Akathisia

4days/wks -- Parkinsonism

4wks/mths -- Tardive Dyskinesia



Tardive Dyskinesia



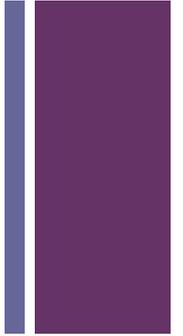
- Involuntary movement disorder
- Usually manifests as a *long term side effect* of antipsychotic use

Symptoms

- Repetitive, involuntary movements
 - Grimacing
 - Tongue protrusion and fasciculation
 - Lip smacking
 - Eye blinking
 - Writhing body movements
- Treatment generally involves using lowest dose of antipsychotic possible
 - Can be permanent



Antipsychotics -- Atypicals



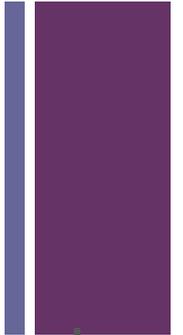
Atypical antipsychotics (also referred to as second generation antipsychotics)

Common examples:

- Risperidone (Risperdal)
- Quetiapine (Seroquel)
- Olanzapine (Zyprexa)
- Aripiprazole (Abilify)
- Ziprasidone (Geodone)
- Clozapine (Clozaril)



Antipsychotics -- Atypicals



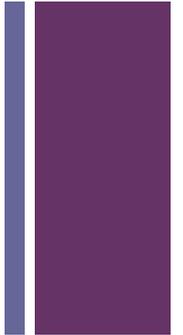
Generally replaced typical antipsychotics as first line treatment of psychotic disorders

Most common side effects:

- "HAM" side effects
 - Sedation, dry mouth, constipation, orthostatic hypotension (dizziness)
- Lower risk of EPS than w/typicals
- Weight gain
 - Hyperglycemia/Diabetes
 - Hyperlipidemia



Long-acting Injectables (LAIA)



- “Depot formulations” or “decanoate”
- Administered every 1-4 weeks
- Shoulder, thigh or buttocks
- Works in the same way / same risk of side effects
 - EXCEPT in the case of Neuroleptic Malignant Syndrome
 - Cautious in titration, etc...it is LONG ACTING.

Examples -- Haloperidol (Haldol decanoate), Fluphenazine (Prolixin), Risperidone (Risperdal Consta), Olanzapine (Zyprexa Relprev), Paliperidone (Invega Sustenna), Aripiprazole (Abilify Maintenna)

+ Neuroleptic Malignant Syndrome

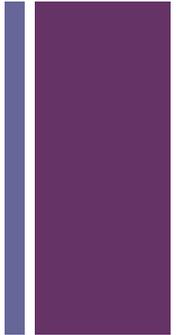
- NMS is a **life threatening** adverse reaction to antipsychotic medications

Symptoms

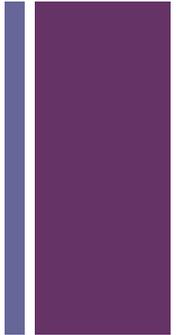
- Muscle cramps/tremor
 - Fever
 - Diaphoresis
 - Muscle rigidity
 - Unstable blood pressure
 - Delirium
-
- Medical emergency, pts often need to be in the ICU!

+ Mood stabilizers

- Commonly used in the treatment of bipolar disorder
 - Common examples:
 - Valproic acid (Depakote)
 - Carbamazepine (Tegretol)
 - Lamotrigine (lamcital)
 - Lithium

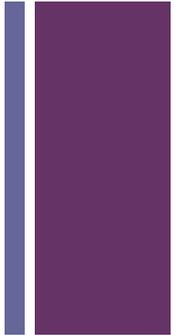


+ Mood Stabilizers



- Valproic acid
 - Most common side effects
 - Upset stomach
 - Weight gain
 - Fatigue
 - Headache
 - Hair loss/thinning
- Carbamazepine
 - Most common side effects
 - Stomach upset
 - Headache
 - Fatigue
 - Rare cause of aplastic anemia (must check blood counts)

+ Mood Stabilizers



- **Lamotrigine**

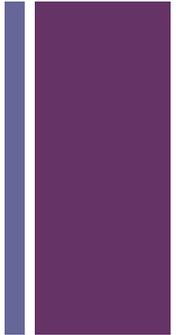
- Most common side effects
 - Headache
 - Dizziness
 - Insomnia
- Risk of dangerous drug rashes which can be fatal therefore dose must be slowly tapered. If pt stops for more than 3 days RESTART entire titration.

- **Lithium**

- Most common side effects
 - Fine tremor
 - Polyuria/polydipsia
- Narrow therapeutic range therefore must be monitored via blood work
- Signs of lithium toxicity include confusion, tremor, diarrhea, blurred vision, unsteady gait and seizure.



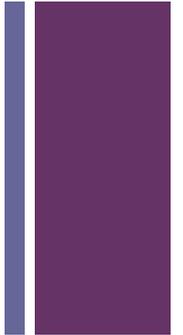
Lab Monitoring



- **Lithium**
 - Lithium level
 - Thyroid and renal function
- **Depakote**
 - Complete blood count (CBC)
 - Platelets
 - Liver function
- **Second general antipsychotics**
 - Fasting blood glucose
 - Fasting lipid panel
 - BMI/weight (at every appointment)
 - *Clozaril* has very close monitoring of cell counts (CBC) and initially weekly, then every 3 months as well as clozaril levels



Other Medications

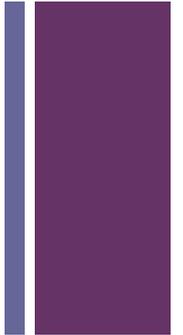


Benzodiazepines

- Common examples:
 - Diazepam (Valium)
 - Alprazolam (Xanax)
 - Lorazepam (Ativan)
 - Chlordiazepoxide (Librium)
 - Clonazepam (Klonopin)
- Often used in treatment of anxiety
- Risk of tolerance and withdrawal, withdrawal can be fatal
- Very commonly abused...but that doesn't mean they aren't good/useful drugs.



Other Medications



Stimulants

- Common examples:
 - Methylphenidate (Ritalin, Concerta)
 - Dextroamphetamine (Adderall)
 - Dexmethylphenidate (Focalin)
- Used as first line agents in treatment of ADHD
- Sometimes used as supplemental medications in treatment resistant depression
- Abuse potential, diversion risk (especially college-aged kids or parents w/addiction issues)



Children

Same medication classes are used although often at lower doses

- Children are not little adults
- Limited research (most studies use adult men)
- Higher rates of stimulants due to ADHD

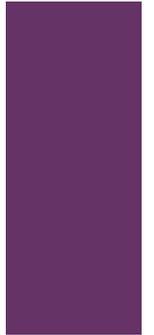
Alarming high use of antipsychotics for treatment of behavioral disorders

Limited research as to long term effects of these medications over the lifespan (Benefit > Risk)



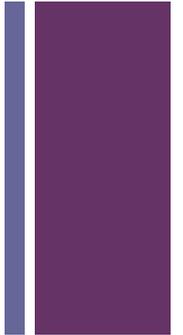


Part I - Questions?





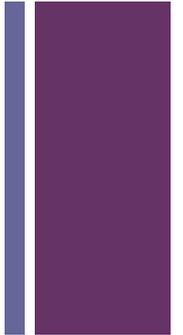
Discussion



- How comfortable are you discussing medications?
- When you pick up a new case, what discussion do you have about someone's medications?
- Do consumers often know their medications?
- Do they know what they are taking them for?



Part II - Why do we care?



Goals of treatment:

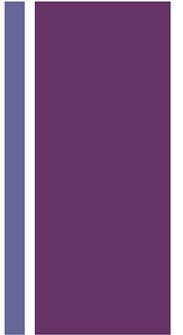
- Reduction of psychiatric symptoms
- Improvement in role functioning
- Improved quality of life

All medications come with side effects

- Most are benign and self limited
- Some can be quite serious
 - Serotonin Syndrome
 - Neuroleptic Malignant Syndrome
 - Tardive Dyskinesia
 - Weight gain, Diabetes, Metabolic Syndrome



Why do we care?



Balancing Act

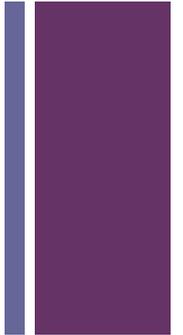
Intended effects vs. Side effects

- Ex: Tardive dyskinesia
 - Lower dose = decreased involuntary movements
 - Lower dose = increased psychotic symptoms
- Ex: Sexual dysfunction
 - Take medication vs. impotence

Are we making things better or worse?



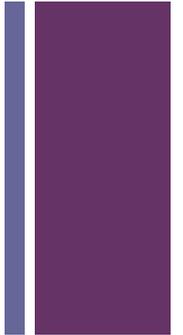
Metabolic Syndrome



- Associated with many psychiatric medications
 - Weight gain
 - Elevated glucose
 - Elevated blood pressure
 - Elevated cholesterol
 - Increased risk of heart attack, stroke and death



Barriers to Care - Individual Factors



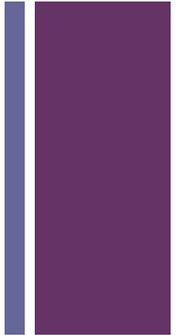
- Lower treatment adherence
- Avoidance of contact with health care practitioners
- Lack of awareness of symptoms due to cognitive deficits
- Difficulty in communication of needs
- Reluctance to disclose symptoms

+ Barriers to Care - System Factors

- Hesitancy of non-psychiatrists to treat people with serious mental illness
- Lack of adequate follow-up
- Lower rates of longitudinal follow up
- More challenging/time consuming physical examination due to psychiatric symptoms
- Physical complaints regarded as psychosomatic



Lifestyle

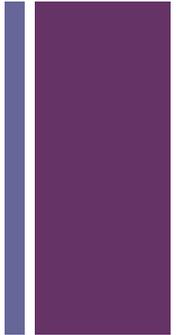


Higher likelihood of unhealthy and high risk behaviors among those with serious mental illness

- Smoking
- Substance abuse
- Lack of exercise
- Poor diet



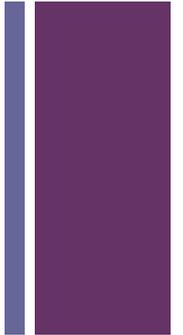
Rates of Detection



- People with serious mental illness also have high rates of physical comorbidity
- Detection rates of physical illness among people with mental illness are very poor



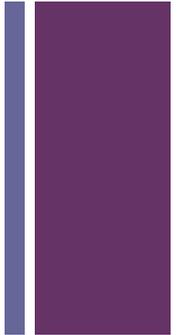
Recap



- 1) High risk of having medical problems
 - 2) Added risks from medication side effects
 - 3) Poor job of detecting illness
 - 4) Many barriers, both individual and system wide
- $1 + 2 + 3 + 4 = \text{high risk of bad outcome}$



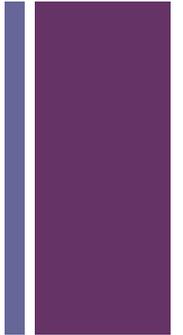
Alternatives



- Medication is not the only option for many disorders
- Therapy
 - CBT for depression/anxiety
 - Exposure-Response prevention (ERCP) for OCD
 - DBT for chronic SI and borderline personality d/o
 - MI to identify and explore ambivalence in addictions



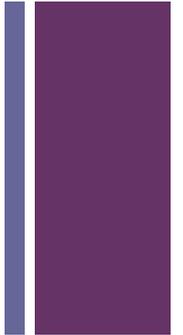
Discussion



- How comfortable are you discussing side effects?
- How do you talk to consumers about their medications?
- How do you talk to family about their medications?
- How do you talk to doctors about medications being prescribed?
- Do consumers tell you when they've stopped taking their medications?
- Why do they stop medications?
- Are you comfortable talking about sexual dysfunction?



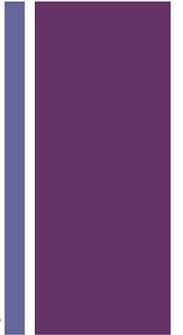
What is your role?



- Access to 1st hand, front line information often otherwise unavailable to other members of the treatment team
 - Direct observation of behaviors in the community
 - Direct observation of the home environment
 - Direct communication with family members and significant others



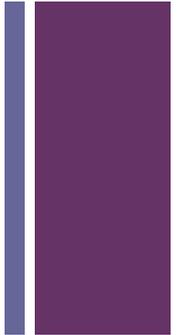
What is your role?



- When possible, attend appointments
 - Valuable information as member of psychiatric treatment team
 - Valuable liaison to primary care
 - Consider sending an email/other communication if you have concerns.
- Advocate
 - Provide information without speaking over consumer



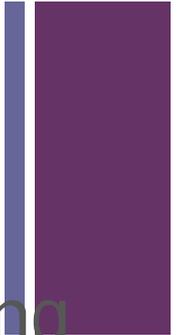
Typical doctor visit



- 15 minute med check
 - 5 minutes discussing current events
 - 5 minutes discussing medications
 - 5 minutes reviewing documentation
- Best foot forward
 - Shower, nicest clothes
 - “Everything’s great” often regardless of actual events



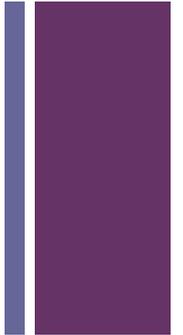
Medication Adherence



- Tendency for patients to say they're taking their medications even when they're not
 - Confusing medications regimens
 - Cognitive issues related to mental illness diagnosis
 - Want to "please" providers
 - Cost
- Outcomes
 - Inappropriate increased dose of medications leading to increased side effects
 - Polypharmacy leading to increased side effects



Polypharmacy



"The use of multiple medications and/or the administration of more medications than are clinically indicated, representing unnecessary drug use"

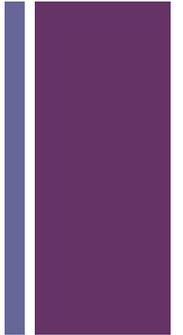
- Increased risk of side effects
- Increased risk of serious drug-drug interactions
- Increased cost, both to patient and the healthcare system

Highest risk in elderly whom have accumulated multiple medical problems and medications

Results can be fatal!



Medication Adherence



What can we do?

- Personal Medication lists

Name of medication, dosing, whom its prescribed by and what is it for

- Pill box programs

- Assist with questions

- Alliance building

- Be creative

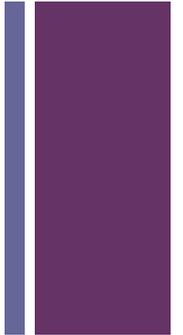
Phone alarms, charts (best for kids/intellectual disability), other motivations?

- Change the way we ask questions:

- Are you taking your medications? or How many doses of your medication do you miss in a typical week/month?



Medication Adherence



What can't we do?

- Force medications

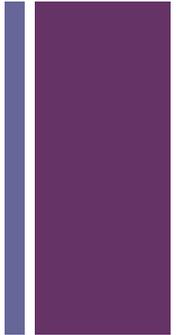
Limited exceptions during inpatient hospitalizations and via outpatient commitments

- Force attendance at appointments

Be too focused on adherence alone...we're likely to alienate our patients and risk loss of therapeutic alliance.



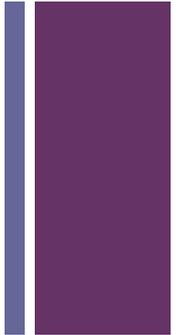
Where can I get more info?



- NAMI.org
- GoodRX.com
- <http://www.nlm.nih.gov/medlineplus/druginformation.html>
- Don't be afraid to ask!
 - Psychiatrist
 - Pharmacist
 - Consumer



Discussion



- ✓ Successes in advocating for consumers? Failures?
- ✓ Experiences thus far with:
 - primary care programs?
 - psychiatrists?
 - pharmacists?
- ✓ Role of addiction in medication adherence?
- ✓ Have you ever had suspicions of pts abusing medications? Diverting/selling?
- ✓ Do you feel comfortable asking about addictions?



Thank-you!

