

Seminar one:

Flash Cards.



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Which mood stabilizer is cleared by the renal system?

lithium



Which medications can INCREASE drug serum concentrations resulting in symptoms such as confusion, tremors, slurred speech, and vomiting?

- **NSAIDS** (ibuprofen [Advil or Motrin] and naproxen [Naprosyn or Aleve])
- **Thiazides** (bumetanide [Bumex], ethacrynic acid [Edecrin], furosemide [Lasix])
- **ACE Inhibitors** (lisinopril [Prinivil or Zestril])



What occurs during old old that affects medication?

- DECREASED intracellular water
- DECREASED protein binding capabilities (not necessarily caused by old age, but by the disease processes seen with aging)
- DECREASED (low) muscle mass
- DECREASED metabolism



Inducers

DECREASE serum drug levels =
Subtherapeutic



Inhibitors

INCREASE serum drug levels =
Supratherapeutic



Cytochrome P-450 (CYP) enzymes

Responsible for the metabolism of many psychotropic medications and can be inhibited or induced by certain drugs, resulting in significant drug-to-drug interactions and adverse reactions



First-pass metabolism

Process by which the drug is metabolized by P-450 enzymes in the intestines and liver prior to going to systemic circulation



1A2

| Inducers | Inhibitors |
|---|--|
| phenobarbital, carbamazepine, phenytoin, tobacco | fluvoxamine, fluoxetine, paroxetine, sertraline |



2C9

| Inducers | Inhibitors |
|----------------------------|------------------------------|
| carbamazepine, rifampin | valproic acid, fluoxetine |



2C19

| Inducers | Inhibitors |
|---|----------------------------|
| carbamazepine, valproic acid, phenobarbital, phenytoin | fluvoxamine, fluoxetine |



2D6

| Inducers | Inhibitors |
|----------|--|
| None | bupropion, fluoxetine, paroxetine, duloxetine |



3A4

| Inducers | Inhibitors |
|--|--|
| carbamazepine, phenytoin, phenobarbital, Saint John's Wort, rifampin | fluvoxamine, nefazodone, clarithromycin, erythromycin, fluconazole |



Clozapine (Clozaril) is an atypical antipsychotic that is metabolized by the...

P-450 enzyme 1A2



 Bull Shark CRAP GPS+

Inducers: Bull Shark CRAP GPS+

Barbiturates
St John's Wart

Carbamazepine
Rifampin
Alcohol
Phenytoin

Griseofulvin
Phenobarbital
Sulfonylureas
+ smoking and the pill



If a patient who smokes and is taking phenobarbital stops smoking what should the clinician do?

The clinician needs to remember to adjust or decrease the dose of medication since it is no longer being induced (if not, there will be too much medication in the system)



inhibitors can cause

"Big Freaking Problems"

Inhibitors: can cause "Big Freaking Problems"

Bupropion
Fluoxetine
Paroxetine



Blockage of Muscarinic acetylcholine receptors by antipsychotics can cause:

Constipation, urinary retention, blurry vision, dry mouth, tachycardia, and cognitive impairment



Blockage of A-1 norepinephrine receptors by antipsychotics can cause:

Orthostatic hypotension and reflex tachycardia



Blockage of Serotonin receptors by antipsychotics can cause:

Sedation and weight gain; however, modulation of these receptors may be the reason for improvement in treating depression and other bipolar disorders



Blockage of Histamine receptors by antipsychotics can cause:

Sedation, weight gain, insulin resistance, diabetes, and hyperlipidemia



Blockage in the mesolimbic area pathway results in:

A decrease in hallucinations, delusions, and other positive symptoms typically seen in schizophrenia or other psychotic conditions



Blockage in the mesocortical pathway results in:

Negative symptoms or diminished energy, lack of motivation, restrictions and emotions, and alterations in social engagements



Blockage in the nigrostriatal pathway may lead to:

Extrapyramidal symptoms (EPS), such as tardive dyskinesia, parkinsonian like symptoms (i.e., tremors, muscle rigidity, and difficulty starting and stopping movement)



Blockage in the tuberoinfundibular pathway results in:

Decreased follicle stimulating hormone (FSH) and an increase in prolactin, resulting in amenorrhea, gynecomastia, galactorrhea, and/or sexual dysfunction



EPS

Akathisia = the “Ants in ‘yo pants” effect
can cause:

- Restlessness
- Pacing motions
- Difficulty standing still
- Feet constantly in motion
- Rocking



EPS

Akathisia is commonly measured using the...

Barnes Akathisia Rating Scale
(BARS) or the Extraparamidal
Symptom Rating Scale (ESRS)



EPS

Akathisia is often mistaken for:

Increased anxiety



EPS

Available treatment options for akathisia:

- Beta blockers (caution must be taken;
beta blockers can result in
bronchospasms, do not give to a patient
if they are already on a bronchodilator)
- benztropine (Cogentin; anticholinergic)
- Benzodiazepines



EPS

Akinesia =

The absence of movement; cannot initiate motion or has a lack of motivation to move



EPS

Pharmacological management of akinesia is:

benztropine (Cogentin; anticholinergic)



EPS

Pseudo-parkinsonism =

- Stooped posturing
- Shuffling gait
- Rigidity
- Bradykinesia
- Tremors while at rest
- Pill-rolling hand motions



EPS

What causes Pseudo-parkinsonism?

The blockage of dopamine-2 (D2) receptors either pathologically or due to antipsychotic medication use



EPS

Pharmacological treatment for pseudo-parkinsonism?

benztropine (Cogentin; anticholinergic)



EPS

Acute Dystonia =

- Facial grimacing
- Involuntary upward eye movement
- Muscle spasms of the tongue, face, and/or neck
- Laryngeal spasms
- Symptoms may or may not be reversible



EPS

Acute Dystonia can be mistaken for:

Agitation or unusual stereotypical movements associated with schizophrenia



EPS

Oculogyric Crises =

A rare presentation of acute dystonia, which can lead to permanent eye injury due to involuntary upward deviation of the eyes – bilaterally



EPS

Oculogyric Crises can be treated with:

benztropine (Cogentin; anticholinergic)



EPS

Tardive Dyskinesia =

Iatrogenic movements caused by the blockade of dopamine receptors



EPS

Tardive Dyskinesia can cause...

- Rolling and protruding of the tongue
- Sucking and/or smacking of the lips
- Chewing motions
- Facial dyskinesia
- Involuntary movement of the extremities



EPS

How long can it take for tardive dyskinesia to occur?

- It can take up to one to two years for tardive dyskinesia to present itself
- It can always occur acutely at the start of medication treatment or present chronically at any point after treatment



EPS

Treatment options for tardive dyskinesia:

- Reduce the medication dose
- Stop the offending medication
- Or switch to clozapine (Clozaril; atypical antipsychotic)



EPS

Besides Clozaril, what other medications can treat tardive dyskinesia?

- deutetrabenazine (Austedo; selective vesicular monoamine transporter 2 [VMAT2] inhibitor)
- valbenazine (Ingrezza; VMAT2 inhibitor) are also FDA approved to treat tardive dyskinesia



EPS

Which medication should be avoided in a patient with tardive dyskinesia?

benztropine (Cogentin; anticholinergic) should be AVOIDED because it is known to worsen tardive dyskinesia



EPS

Which medication is known for causing tardive dyskinesia (involuntary puckering/pursing of lips and sticking out of the tongue)

metoclopramide (Reglan; antiemetic agent)



The first generation antipsychotics, or typicals, block almost all of which receptors?

dopamine (1 through 5) receptors



Second generation antipsychotics, or atypicals, block...

- Both D2 receptors and 5-HT2A (serotonin) receptors
- The blockage of 5-HT2A may increase levels of dopamine in areas of the brain that are in need and often are deprived of dopamine when using a typical anti-psychotic and can reduce side effects



What are the three second generation antipsychotics with fewer instances of weight gain?

ziprasidone (Geodon)
aripiprazole (Abilify)
lurasidone (Latuda)

"ZAL" she's a skinny gal!



A patient having mild anxiety should be treated with...

Psychotherapy only (or nothing)



NMS

Neuroleptic Malignant Syndrome (NMS) =

- Adverse reactions to antipsychotic use
- More common with first generation antipsychotics
- Causes extreme muscle rigidity and mutism
- The provider will need to monitor laboratory values



NMS

The provider will need to monitor which laboratory values with NMS?

- Increased CPK (caused by muscle destruction)
- Myoglobinuria (caused by rhabdomyolysis)
- Increased white blood cells (WBCs; leukocytosis)
- Increased aspartate aminotransferase (AST) and alanine transaminase (ALT) on a liver function test (LFT)



NMS

NMS presents with a characteristic pattern of symptoms:

"FEVER"
 Fever
 Encephalopathy
 Vital sign instability
 Elevated WBC and CPK
 Rigidity



NMS

Pharmacological management of NMS =

- Administer bromocriptine (dopamine [D2] agonist)
- Administer dantrolene (Dantrium; skeletal muscle relaxant) for extreme muscle rigidity

“BRO, you’ve got NMS! DAN, relax, I’ll be fine”



What are the common classes of medications used to treat depression?

- SSRIs
- SNRIs
- TCAs
- MAOIs
- Atypicals



Selective serotonin reuptake inhibitors (SSRIs)

- fluoxetine (Prozac)
- paroxetine (Paxil)
- sertraline (Zoloft)
- fluvoxamine (Luvox)
- citalopram (Celexa)
- escitalopram (Lexapro)

- Are safer in overdose and can be given to many cancer patients d/t fewer drug interactions



Serotonin-norepinephrine reuptake inhibitors (SNRIs)

- desvenlafaxine (Pristiq)
- duloxetine (Cymbalta)
- levomilnacipran (Fetzima)
- venlafaxine (Effexor XR)



SNRIs can also be used for:

- Neuropathic pain (Cymbalta)

- So, if the patient presents with depression and neuropathic pain, consider using a SNRI



Tricyclic antidepressants (TCAs)

- amitriptyline (Elavil)
- doxepin (Silenor)
- imipramine (Tofranil)
- nortriptyline (Pamelor)



TCAs can cause:

- Dry mouth
- Slight blurring of vision
- Constipation
- Urinary complications
- Drowsiness
- Dizziness
- Weight gain
- Excessive sweating (especially at night)



Monoamine oxidase inhibitors (MAOIs)

- tranylcypromine (Parnate)
- selegiline (Emsam)
- isocarboxazid (Marplan)



Hypertensive crisis may occur when taking an MAOI in conjunction with...

Foods containing tyramine

- Strong or aged cheeses
- Cured meats
- Smoked or processed meats
- Pickled or fermented foods
- Sauces
- Soybeans
- Dried or overripe fruits
- Yeasted products
- Alcoholic beverages (tap or home-brewed beer; red wine, sherry, and liqueurs)



Symptoms of hypertensive crisis:

- Elevated blood pressure
- Explosive headaches
- Facial flushing
- Heart palpitations
- Pupillary dilation
- Excessive sweating
- Fever



Hypertensive crisis treatment plan:

- Discontinue the offending agent
- Administer phentolamine (Regitine; α -adrenergic agonist)



Atypical antidepressants =

- bupropion (Wellbutrin; NDRI)
- mirtazapine (Remeron; α -2 receptor antagonist)
- trazodone (Molipaxin; serotonin modulator)



bupropion (Wellbutrin) is contraindicated with a patient history of...

- Seizures
- Eating disorder (bulimia or anorexia)
- It can decrease the seizure threshold and cause a seizure; or for a patient with an eating disorder, there is an increased risk for seizures d/t electrolyte imbalance



SS

What can occur when there is too much serotonin in the system? Usually caused by taking too much medication or due to a drug-to-drug interaction

Serotonin Syndrome



SS

Which drug combinations that can cause Serotonin Syndrome?

- SSRIs taken with MAOIs
- Taking more than one SSRI at a time
- Drug and herbal interactions. Some examples include ginseng, St. John's wort, Syrian rue, Garcinia cambogia (HCA), 5-HTP, SAMe, and nutmeg



SS

Symptoms of Serotonin Syndrome =

- Hyperreflexia (overactive body reflexes)
- Myoclonic jerks
- Sweating
- Fever
- Extreme headaches
- Confusion
- Tachycardia (heart rate > 100 BPM in adults)
- Agitation



SS

Serotonin Syndrome treatment plan:

- Discontinue the offending agent
- Administer cyproheptadine
- (Periactin, antihistamine)



When switching from a SSRI to a MAOI, the patient will need to...

Wait 14 days



When switching from fluoxetine (Prozac) to a MAOI, the patient will need to...

Wait 5 to 6 weeks



When switching from a MAOI back to fluoxetine (Prozac), the patient will need to...

Wait 14 days



Serotonin Discontinuation Syndrome =

Occurs when a patient stops taking a SSRI or SNRI abruptly



Symptoms of Serotonin Discontinuation Syndrome =

- Myoclonic jerks
- Flu-like symptoms (worse with TCAs)
- Fatigue
- Myalgia (muscle aches and pain)
- Decreased concentration
- Nausea and vomiting
- Ataxia (an unsteady gait)
- Impaired memory
- Agitation
- Hyperreflexia



Never use an SSRI with a...

MAOI



SSRIs can increase...

lithium and carbamazepine serum levels



Bipolar DIG FAST =

DIG FAST

- distractibility, impulsivity, grandiosity, flight of ideas, increased activity, decreased need for sleep, and talkativeness



Bipolar MANIA medications:

lithium carbonate (Eskalith; antimanic)
carbamazepine (Tegretol; anticonvulsant)
divalproex (Depakote; anticonvulsant)
oxcarbazepine (Trileptal; anticonvulsant)



Bipolar DEPRESSION medications

lamotrigine (Lamictal; anticonvulsant)
lurasidone (Latuda; atypical antipsychotics)
olanzapine-fluoxetine combo (Symbyax)
quetiapine (Seroquel; atypical)



Side effects of mood stabilizers

Stevens-Johnson Syndrome – STOP
taking with these signs (Lamictal)

- Fever
- Sore throat
- Facial and tongue swelling
- Severe rash
- Skin sloughing
- Painful mucus membranes



carbamazepine (Tegretol; anticonvulsant) =
BLACK BOX WARNING

Agranulocytosis (extremely low WBCs-type)

- Aplastic anemia (pallor, fatigue, headache, fever, nose, bleeds, bleeding gums, skin, rash, and shortness of breath)



An Asian patient starting on a mood stabilizer must first...

Be screened for the HLAB-1502 allele before starting on carbamazepine (Tegretol; anticonvulsant), because of increased risk for carbamazepine-induced Stevens-Johnson Syndrome



Always, ALWAYS perform what BEFORE starting a female patient (12-51 yo) on a mood stabilizer?

Perform a pregnancy test (HCG) and check pregnancy status BEFORE starting a female patient of child-bearing years (12-51) on a mood stabilizer due to increased risk of neural tube defects



Anxiolytics (stress, panic, social anxiety, obsessive-compulsion...)

- **GAD** - SSRIs, Buspar, Lyrica
- **Stress-related anxiety** - benzos, Atarax or Visaril
- **Panic Disorder** - benzos, antidepressants
- **Social Phobia** - Inderal, Effexor, SSRIs
- **Stress-related Insomnia** - Ambien, Lunesta, Restoril
- **Nightmares** - Minipress



First-line pharm treatment of OCD includes...

- fluoxetine (Prozac)
- sertraline (Zoloft)
- fluvoxamine (Luvox)
- citalopram (Celexa)
- escitalopram (Lexapro)
- Vilazodone (Viibryd)



Medications are not treating personality disorders directly but used to target and improve the symptoms. What medications can treat the symptoms?

- **Impulsivity/anger** - SSRIs, atypicals
- **Schizotypal-type** - low dose olanzapine and risperidone
- **Emotional instability** - lithium, divalproex, atypicals



What medication is used to treat anorexia?

There is no medication treatment specifically for anorexia nervosa, however, atypical antipsychotics (olanzapine; Zyprexa) can reduce delusional thinking associated with the need to lose weight



What medication is used to treat bulimia?

Bulimia nervosa can be treated with antidepressants - Prozac



Medications that can cause mania:

- **Steroids** (can also cause psychosis)
- **disulfiram** (Antabuse)
- **isoniazid** (INH; antituberculosis agent)
- **Antidepressants** when taken by **patient with BD**



Medications that can cause depression:

- **Steroids**
- **isotretinoin** (Accutane)
- **Beta blockers**
- **interferon** (Intron; cytokine)
- **Retrovirals**
- **Antineoplastics**
- **Benzodiazepines**
- **progesterone** (Prometrium)



What medications can render mood stabilizers ineffective and what needs to be done about it?

- fluticasone (Flonase; corticosteroid)
- prednisone (Rayos; corticosteroid)
- Provider will need to make mood stabilizer dose adjustments after talking with the PCP



Teratogenic Risks of lithium:

Ebstein anomaly (heart defect; tricuspid valve abnormality resulting in blood leakage back through the valve)



Teratogenic Risks of benzodiazepines:

Floppy infant syndrome (decrease muscle tone) and **cleft palate** (malformation of the mouth with an opening in the pallet that can result in difficulty communicating and feeding)



Teratogenic Risks of carbamazepine:

Neural tube defects (complications of the brain, spine, and/or spinal cord that can cause paralysis, urinary and bowel complications, blindness, deafness, developmental, intellectual disabilities, and death



Teratogenic Risks of divalproex:

Neural tube defects and spina bifida (spinal cord that does not develop properly and can be seen on the skin above the spinal defect



Lithium is considered at toxic levels when equal to or greater than...

1.5 mEq/L



The GOLD standard for treating mania =

lithium



There is strong evidence supporting the fact that lithium has an...

Anti-suicidal effect



Teratogenic Risks of divalproex:

Neural tube defects and spina bifida (spinal cord that does not develop properly and can be seen on the skin above the spinal defect)



Baseline labs should be taken before starting lithium:

- Thyroid stimulating hormone (TSH)
- Serum creatinine and blood urea nitrogen (BUN)
- Pregnancy test
- Electrocardiogram (ECG) for patients older than 50



Side effects of lithium treatment:

- Hypothyroidism
- Coarse hand tremors
- Maculopapular rash
- Diarrhea, vomiting, and cramps
- Anorexia
- T-wave inversion as noted on ECG
- Leukocytosis (increased WBCs)



Clozapine (Clozaril) has an increased risk for causing...

Neutropenia and agranulocytosis



Neutropenia is defined as an ANC less than...

1500/ μ L



When should the PMHNP d/c clozapine d/t neutropenia?

Discontinue clozapine (Clozaril) with an ANC less than 1000/ μ L due to neutropenia



When should the PMHNP d/c clozapine d/t agranulocytosis?

Discontinue clozapine (Clozaril) with a WBC of 2000-3000 per mL due to agranulocytosis



What should the PMHNP do if a patient taking clozaril is having signs of sudden fever, chills, sore throat, weakness?

D/c medication and check lab values. These are signs of an infection



Folic acid =

Supports neural tube development during the first trimester of pregnancy



It is important to recommend that all women planning or capable of becoming pregnant take...

0.4 to 0.8 mg of folic acid daily



If a manic female patient is also promiscuous or hypersexual, the provider should...

Recommend folic acid because of the chance she could become pregnant





Aripiprazole

Brand: Abilify

Class: Atypical Antipsychotic

Given for: Schizophrenia (13+), Acute/mixed Mania (10+), Bipolar I Maintenance, Autism-related Irritability (6-17), Tourette's Disorder (6-18), Depression (adjunctive), **Off Label - Treatment Resistant Depression**

Watch for: Nausea, anxiety, drowsiness, constipation, orthostatic hypotension, increased salivation, akathisia

Caution: Increased mortality in elderly w/dementia-related psychosis, **NMS**

Monitor: BMI and lipids



Brexpiprazole

Brand: Rexulti

Class: Atypical Antipsychotic

Given for: Schizophrenia, MDD (adjunctive), **Off Label - Acute/mixed Mania, Other Psychotic Disorders, Bipolar Depression, Dementia-related behaviors**

Watch for: Increased appetite, weight gain, constipation, akathisia, somnolence, abnormal dreams, anxiety, and dizziness

Caution: Increased mortality in elderly w/dementia-related psychosis, **NMS and TD (d/c if occur)**

Monitor: B/P, CBC, weight, and BMI

Weight gain



Possible, but unusual



Cariprazine

Brand: Vraylar

Class: Atypical Antipsychotic

Given for: Schizophrenia, Acute treatment of Bipolar Disorder (manic or mixed), Bipolar Depression, **Off Label - Bipolar Maintenance and Treatment Resistant Depression**

Watch for: EPS, akathisia, weight gain, hyperglycemia, and sedation

Caution: **NMS and Agranulocytosis**, orthostatic hypotension, and increased mortality in elderly w/dementia-related psychosis

Monitor: B/P, CBC, weight and BMI,

Weight gain



Possible, but unusual



Chlorpromazine

Brand: Thorazine

Class: Typical Antipsychotic

Given for: Schizophrenia, N/V, Surgery-induced Anxiety, Psychosis, Combativeness

Watch for: Hypotension, weight gain, priapism, akathisia, EPS, dry eyes, sedation, blurred vision, constipation, dry mouth, and photosensitivity

Caution: **NMS and Agranulocytosis**

DO NOT GIVE: H/o glaucoma, bone marrow suppression, or severe liver disease

Monitor: BP, pulse, respirations, CBC, LFT, and eye exam

Weight gain



Common

Sedation



Problematic



Clozapine

Brand: Clozaril

Class: Atypical Antipsychotic

Given for: Refractive Schizophrenia, Suicide Risk Reduction (schizophrenic and schizoaffective patients)

Watch for: Hyper-salivation, dizziness, tachycardia, sweating, sedation, weight gain, and diabetes

Caution: NMS, Seizures, Agranulocytosis, Leukopenia, and Myocarditis (d/c if occur); increased mortality in elderly w/dementia-related psychosis

Monitor: Follow REMS Program, B/P, pulse, ANC <1000/mcL - withhold, BMI, CBG, and lipids

weight gain



Problematic

sedation



Problematic



Haloperidol

Brand: Haldol

Class: Typical Antipsychotic

Given for: Schizophrenia, Psychotic Disorders, Tics (Tourette's disorder), Off Label - Bipolar Disorder and Delirium

Watch for: EPS, akathisia, galactorrhea, blurred vision, headache, and dry mouth

Caution: NMS, Seizures; increased mortality in elderly w/dementia-related psychosis

DO NOT GIVE: Avoid EOTH; lithium (can cause encephalopathy when taking together)

Monitor: B/P, pulse, respiration, CBC w/diff, and LFTs



Lurasidone

Brand: Latuda

Class: Atypical Antipsychotic

Given for: Schizophrenia (13+), Bipolar Depression (10+), Off label use - Acute Mania, Treatment Resistant Depression, and Mixed Depression

Watch for: Somnolence, akathisia, nausea, Parkinsonism and, agitation

Caution: Start with lowest dose first; watch for dizziness, and cognitive/motor impairment; increased mortality in elderly w/dementia-related psychosis

DO NOT GIVE: When taking ketoconazole (inhibitor) or rifampin (inducer)

Monitor: Hyperglycemia, weight gain, orthostatic hypotension, syncope, seizures, and suicidal ideation

weight gain



Common

sedation



Common



Olanzapine

Brand: Zyprexa - fastest acting antipsychotic to stop mania

Class: Atypical Antipsychotic

Given for: Schizophrenia (13+), Acute Mania (13+), Bipolar Disorder, Off label use - Behavioral Disturbances and Impulsivity

Watch for: Dizziness, agitation, sedation, orthostatic hypotension, constipation, weight gain, EPS, and NMS

Caution: Increased mortality in elderly w/dementia-related psychosis

DO NOT GIVE: When taking ketoconazole (inhibitor) or rifampin (inducer)

Monitor: Hyperglycemia, BMI, weight gain, CBC, LFTs, B/P, pulse, respiratory rate, and ECG

weight gain



Common

sedation



Common



Paliperidone

Brand: Invega

Class: Atypical Antipsychotic

Given for: Acute and Maintenance of Schizophrenia (12+), Schizoaffective Disorder, **Off label use - Bipolar Disorder and Behavior Disturbances r/t Dementia**

Watch for: Somnolence, orthostatic hypotension, akathisia, EPS, Parkinsonism, hyper-prolactinemia, and hyper-salivation

Caution: Reduced renal function, increased mortality in elderly w/dementia-related psychosis; causes INCREASED QT interval - avoid with drugs that prolong QT

Monitor: BMI, fasting glucose, and lipids

weight gain



Common

sedation



Common



Quetiapine

Brand: Seroquel

Class: Atypical Antipsychotic

Given for: Acute Schizophrenia and Mania (13-17), Schizophrenia and Bipolar Maintenance, Depression (adjunctive therapy), **Off label use - Severe Treatment Resistance Anxiety and Insomnia**

Watch for: Dizziness, headache, somnolence, weight gain, diabetes, and **NMS and SEIZURES**

Caution: Increased mortality in elderly w/dementia-related psychosis; contraindicated with lactation

Monitor: B/P and pulse (during titration of medication)

weight gain



Common

sedation



Problematic



Risperidone

Brand: Risperdal

Class: Atypical Antipsychotic

Given for: Schizophrenia (13+), Psychotic Disorders, Bipolar mania (acute or mixed), Irritability associated with Autism (5+), **Off label use - Bipolar Depression, Impulsivity, Behavioral Disturbances (Dementia and children)**

Watch for: Sedation, weight gain, increased prolactin, rhinitis, EPS, dizziness, aggression, insomnia, skin rash, libido, and **NMS**

Caution: EPS is common

Monitor: B/P, pulse (during titration, hypotension, QT prolongation, BMI, fasting glucose, and lipids)

weight gain



Common

sedation



Common



Ziprasidone

Brand: Geodon

Class: Atypical Antipsychotic

Given for: Schizophrenia, Acute Agitation (IM; Schizophrenia), Bipolar Disorder (manic and mixed, maintenance)

Watch for: Dizziness, EPS, restlessness, drowsiness, nausea, and **Prolonged QT interval and NMS**

Caution: Increased mortality in elderly w/dementia-related psychosis and risk for falls, take with 500+ calories, avoid taking with CNS depressants

Monitor: EKG regularly, B/P, pulse, BMI, fasting glucose, and lipids

weight gain



Unusual

sedation



Possible



Amitriptyline

Brand: Elavil

Class: Tricyclic Antidepressant

Given for: Depression, Pain, Anxiety, Headache, and Insomnia

Watch for: Blurry vision, dry mouth, constipation, and hypotension

Caution: H/o CV disease and high dosing

Monitor: ECG d/t cardiac events (especially underweight patients)

Weight gain



Sedation



Bupropion

Brand: Wellbutrin

Class: Norepinephrine-dopamine reuptake inhibitor

Given for: MDD, Seasonal Affective Disorder, Smoking Cessation, Sexual Dysfunction

Watch for: Weight loss, insomnia, agitation, and dizziness

Caution: Increased risk of seizures (lowers threshold)

DO NOT GIVE: H/o bulimia and anorexia; avoid EOTH



Citalopram

Brand: Celexa

Class: Selective serotonin reuptake inhibitor

Given for: MDD; Off Label - PMDD, Panic, PTSD, OCD, Social and General Anxiety

Watch for: Nausea, diarrhea, dry mouth, sexual dysfunction, and headache

Caution: Associated with QT-prolongation; SI

DO NOT GIVE: Within 14 days of a MAOI



Escitalopram

Brand: Lexapro

Class: SSRI

Given for: MDD (12+) and GAD; Off Label - PMDD, Panic, PTSD, OCD, Social Anxiety

Watch for: Nausea, diarrhea, sexual dysfunction, weight gain, and sedation

Caution: With H/o mania and seizures; SI

DO NOT GIVE: With a MAOI

Weight gain



Possible, but unusual



Fluoxetine

Brand: Prozac

Class: SSRI

Given for: MDD (8 and up), Bulimia nervosa, Panic disorder, OCD (7 and up), Social Anxiety disorder*, and PTSD*

Watch for: Sexual dysfunction, Gastrointestinal upset, Insomnia, Sweating, and Bruising

Caution: Potent CYP2D6 inhibitor, Half-life up to 2 weeks

DO NOT GIVE: Fatal reactions with MAOIs



Fluvoxamine

Brand: Luvox

Class: SSRI

Given for: OCD, Social Anxiety Disorder, Generalized Anxiety Disorder*, PTSD*, Panic Disorder*

Watch for: Nausea, Somnolence, Asthenia, Sexual dysfunction, Dry mouth, Sweating

Caution: CYP 450 enzyme inhibitor,

DO NOT GIVE: Fatal reactions with MAOIs, Suicidal ideation



Paroxetine

Brand: Paxil

Class: SSRI

Given for: Major Depressive Disorder, Panic Disorder, OCD Social Anxiety Disorder, PTSD, Generalized Anxiety Disorder, PMDD

Watch for: Sexual Dysfunction, Headache, Nausea, Dry mouth, Weight gain, Sweating, Somnolence

Caution: Mild anticholinergic actions, Most sedating SSRI, Potent CYP2D6 inhibitor, Worst sexual dysfunction, May cause discontinuation syndrome

DO NOT GIVE: Suicidal ideation



Sertraline

Brand: Zoloft

Class: SSRI

Given for: Major Depressive Disorder, PMDD, Panic Disorder, PTSD, OCD, Social Anxiety Disorder, GAD*

Watch for: Nausea, Insomnia, Somnolence, Headache, Dry Mouth, Sexual Dysfunction

Safer in pregnancy and breastfeeding, Best cardiovascular safety of any antidepressant (safe for depressed patients with recent MI or angina)

Caution: Moderate CYP2D6 inhibitor,

DO NOT GIVE: Fatal reactions with MAOIs and Pimozide (14 day washout period), Suicidal ideation, With St John's wort



Trazodone

Brand: Desyrel

Class: SARI (Serotonin Modulator)

Given for: Depression, Insomnia*, Anxiety*

Watch for: Sedation, Nausea, Vomiting, Edema, Dry mouth, Orthostatic hypotension, Blurred vision, Lightheadedness

Caution: Due to long half-life, may feel groggy in the morning, if doses too high, **May cause priapism (medical emergency)** and sexual dysfunction,

DO NOT GIVE: ETOH, fluoxetine or opioids

Sedation



Venlafaxine

Brand: Effexor

Class: SNRI

Given for: Major Depressive Disorder, GAD, Social Anxiety Disorder, Panic Disorder, PTSD*, PMDD*

Watch for: Nausea, Headache, Insomnia, Diarrhea, Sweating, Hyponatremia, Increase in BP depending on dose

Caution: May cause hypertension - Monitor blood pressure,

DO NOT GIVE: ETOH and MAOI



Mirtazapine

Brand: Remeron

Class: NaSSA, Alpha 2 Antagonist

Given for: Major Depressive Disorder, Generalized Anxiety Disorder*, PTSD*, Panic Disorder*

Watch for: Weight gain, Sedation, Constipation, Dry mouth, Increased Appetite, Hypotension

Caution: More sedating at lower doses, Caution with seizure history

DO NOT GIVE: Fatal reactions with MAOIs, Suicidal ideation

Sedation Weight gain



Vilazodone

Brand: Viibryd

Class: Serotonin Partial Agonist Reuptake Inhibitor

Given for: MDD, Anxiety*, OCD*

Watch for: Nausea, Diarrhea, Vomiting, Sweating, Dry Mouth, Headache, Sexual Dysfunction



Valproic Acid

Brand: Depakote

Class: Anticonvulsant, Mood Stabilizer

Given for: Acute Mania, Complex Partial Seizures, Migraine Prophylaxis, Bipolar Depression*, Bipolar Disorder maintenance*, Psychosis, schizophrenia (adjunct)*

Watch for: Sedation, Tremors, Abdominal pain, Weight gain, Hair loss, Thrombocytopenia (dose, related; reversible)

Caution: If used w/ Lamotrigine, reduce Lamotrigine dose by 50%, Must monitor Valproic Acid level and liver function, May cause Polycystic Ovarian Syndrome



Lithium

Brand: Eskalith, Lithobid, Lithium carbonate

Class: Mood Stabilizer

Given for: Bipolar disorder, Bipolar depression*, MDD (adjunct)*, Neutropenia*

Watch for: Nausea, Diarrhea, Vomiting, Edema, Sedation, Fine tremor, Polyuria/Excessive Thirst, Acne, Hypothyroidism

Clinically proven to reduce suicidality, First-line treatment for patients with bipolar mania

Caution: Must monitor Lithium level, kidney function (Target levels - Acute mania: 0.8-1.2 mEq/L, Maintenance: 0.6-1.2 mEq/L, Toxicity: >1.5 mEq/L, Monitor thyroid/kidney function, WBC, electrolytes, glucose, ECG, and BMI

DO NOT GIVE: Haloperidol (can cause toxic encephalopathy)



Lamotrigine

Brand: Lamictal

Class: Anticonvulsant, Mood Stabilizer

Given for: Bipolar I Disorder; Bipolar Depression*; Bipolar Mania*; MDD (adjunct)*; Psychosis, Schizophrenia (adjunct)*

First-line treatment for patients with bipolar depression

Watch for: Dizziness, Headache, Nausea, Sedation

Caution: Stevens-Johnson Syndrome - severe, potentially life-threatening skin rash; Cough; Mucosal lesions



Carbamazepine

Brand: Tegretol

Class: Anticonvulsant

Given for: Partial Seizures; Grand Mal Seizures; Acute/Mixed Mania; Bipolar Depression*; Bipolar Disorder Maintenance*; Psychosis, schizophrenia (adjunctive)*

Watch for: Sedation, Dizziness, Nausea, Headache, Vomiting

Caution: Steven-Johnson Syndrome and Toxic Epidermal Necrolysis (check for HLA B*1052 gene in Asians); Monitor CBC, platelets, reticulocytes; Check baseline and at six weeks and then 3 months (4-12 mg/mL therapeutic)





Oxcarbazepine

Brand: Trileptal

Class: Anticonvulsant

Given for: Partial Seizures, Bipolar Disorder*

Watch for: Sedation, Headache, Nausea, Dizziness, Ataxia, Vomiting

Caution: Monitor for hyponatremia, May increase risk of developing Stevens-Johnson syndrome and/or toxic epidermal necrolysis



Clomipramine

Brand: Anafranil

Class: TCA

Given for: OCD, Depression*, Severe and treatment-resistant depression*, Anxiety*, Neuropathic/Chronic pain*, Insomnia*

Watch for: Nausea, Dry mouth, Vomiting, Constipation, Headache

Caution: Get baseline ECG for patients over 50 years old, and patients with history of seizures

DO NOT GIVE: Fatal with MAOIs



Nortriptyline

Brand: Pamelor

Class: TCA

Given for: Major depressive disorder, Chronic neurogenic pain*, Anxiety*, Insomnia*

Watch for: Drowsiness, Fatigue, Blurry vision, Dry eyes/mouth, Hypertension, Constipation, and Arrhythmias

Caution: Contraindicated in narrow-angle glaucoma; Monitor ECGs in patients with heart disease

DO NOT GIVE: Fatal with MAOIs



Doxepin

Brand: Sinequan, Silenor

Class: TCA

Given for: Depression, Psychotic depressive disorders with associated anxiety, Manic-depressive disorder, Insomnia, Anxiety*, Neuropathic pain/chronic pain*, Treatment-resistant depression*

Watch for: Nausea, Dry mouth, Constipation, Itching or swelling with topical administration, Sedation at low doses, Weight gain

Caution: Monitor blood pressure and pulse; Perform ECGs with history of cardiovascular disease; Monitor WBCs, LFTs, and serum glucose periodically





Imipramine

Brand: Tofranil

Class: TCA

Given for: Depression

Watch for: Blurry blurry vision, Dry eyes/mouth, Sedation, Constipation, Hypertension, and Arrhythmias

Caution: Monitor ECG, blood pressure, and pulse

DO NOT GIVE: Fatal with MAOIs; Avoid use with SSRIs or clonidine



Lorazepam

Brand: Ativan

Class: Benzodiazepine

Given for: Anxiety Disorder, Anxiety associated with depressive symptoms, Insomnia*, Catatonia*, Alcohol withdrawal, psychosis*, Panic disorder*, Acute mania (adjunct)*, Delirium (with Haldol)*

Watch for: Fatigue, Depression, Sedation, Ataxia

Caution: High abuse potential; Only for short term use; Increased risk of falls; Schedule IV controlled substance

DO NOT GIVE: Comatose or depressed CNS; Pregnancy/lactation; glaucoma



Clonazepam

Brand: Klonopin

Class: Benzodiazepine

Given for: Panic Disorder, Myoclonic Seizures, Insomnia*, Catatonia*, Acute Mania or psychosis (adjunct)*, Other anxiety disorders*

Watch for: Fatigue, Depression, Sedation, Daytime, grogginess, Confusion

Caution: Long acting, increased risk of falls, withdrawal effects may not be seen for 3 to 5 days after abrupt discontinuation, Schedule IV controlled substance; Monitor CBC/LFTs with prolonged therapy

DO NOT GIVE: Severe liver disease



Alprazolam

Brand: Xanax

Class: Benzodiazepine

Given for: GAD, Panic Disorder, Insomnia*, PMDD*, Acute mania (adjunct)*, Catatonia

Watch for: Fatigue, Depression, Forgetfulness, Memory Impairment, Sedation, Slurred speech, Dependence

Caution: Short acting, addictive, only for short term use, increased risk of falls, Schedule IV controlled substance; Monitor, CBC, liver/renal function in long-term therapy; Seizures on abrupt discontinuation

DO NOT GIVE: Grapefruit, ETOH; Can interact with anti-depressants, anti-histamines, benzodiazepines, and opioids





Buspirone

Brand: Buspar

Class: Anxiolytic

Given for: Anxiety disorders, Short-term treatment of anxiety, Treatment Resistant, Depression (adjunct)*, Mixed depression and anxiety*

Does not appear to cause dependence

Watch for: Nausea, Dizziness, Headache, Nervousness, Jitteriness, Restlessness

Caution: Takes 4 to 6 weeks to become effective

DO NOT GIVE: Severe renal and hepatic impairment



Propranolol

Brand: Inderal

Class: Beta Blocker, antihypertensive

Given for: Essential tremor, Anxiety, Akathisia

Watch for: Fatigue, Weakness, Impotence, Arrhythmias, Bradycardia, Congestive Heart Failure (CHF), Pulmonary Edema

Caution: Monitor blood pressure, pulse, and orthostatic hypotension: Abrupt withdrawal can cause life-threatening arrhythmias

DO NOT GIVE: Heart block, CHF, and bradycardia patients



Dextroamphetamine

Brand: Adderall

Class: Stimulant

Given for: ADHD (ages 3 and older), Narcolepsy, Obesity, Treatment Resistant, Depression*

Watch for: Increased anxiety, Insomnia, Decreased appetite, weight loss, Elevated BP Abdominal Pain

Caution: Schedule II drug, High risk of abuse



Methylphenidate

Brand: Ritalin, Concerta

Class: Stimulant

Given for: ADHD (children and adults), Narcolepsy*, Treatment Resistant Depression*

Watch for: Insomnia, Decreased appetite, Elevated BP, Increased anxiety, Increased restlessness, Affect lability, Tics

Caution: Schedule II drug; More effective in children/adolescents vs adults; High risk of abuse



Lisdexamfetamine

Brand: Vyvanse

Class: Stimulant

Given for: ADHD (ages 6+ years old and older), Binge Eating Disorder, Narcolepsy*, Treatment Resistant, Depression*

Watch for: Insomnia, Decreased appetite, Elevated, BP, Headache, Anorexia, Increased HR

Caution: Schedule II drug; 10-12h duration; Moderate-high risk for abuse



Guanfacine

Brand: Intuniv

Class: Antihypertensive

Given for: ADHD, Opposite Defiant Disorder*, Conduct Disorder*

Watch for: Sedation and Dizziness

Caution: Not as effective in adults, better for hyperactivity/impulsivity; Dose at night due to sedation

Sedation



Clonidine

Brand: Catapres; Kapvay

Class: Antihypertensive

Given for: ADHD (Kapvay), Tourette's Disorder*, Anxiety Disorder*, Conduct Disorder*, Opioid Withdrawal*, Menopausal flushing*, Clozapine-induced hypersalivation*

Watch for: Dry mouth, Dizziness, Sedation, Constipation, Fatigue, Headache

Caution: more sedating than guanfacine

Sedation



Atomoxetine

Brand: Strattera

Class: SNRI

Given for: ADHD (6 and older) and Treatment Resistant Depression*

Watch for: Sedation, Fatigue, Decreased appetite, Elevated BP, Nausea, Dry mouth

Caution: Takes 4 to 6 weeks to become effective

Sedation





Fluphenazine

Brand: Prolixin

Class: Typical Antipsychotic

Given for: Psychotic Disorders, Schizophrenia, Chronic Schizophrenia

Watch for: EPS, Photo-sensitivity, Sedation, Tardive dyskinesia, Agranulocytosis

Caution: Monitor blood pressure, pulse, respirations, and ECG

DO NOT GIVE: Severe liver or cardiovascular disease; When using Pimozide; History of glaucoma or bone marrow depression



Tranlylcypromine

Brand: Parnate

Class: MAOI

Given for: Depression

Watch for: Seizures, Confusion, Dizziness, Drowsiness, Blurred vision, Tinnitus, Hypertensive crisis, Edema, Tachycardia, Orthostatic hypotension, Sexual dysfunction, Urinary Retention, Agranulocytosis, Leukopenia, Thrombocytopenia

Caution: Monitor blood pressure, heart rate, eyes, nose, daily weight, fluid retention, serum glucose

DO NOT GIVE: Avoid foods containing tyramine; SSRIs, amphetamines, dopamine



Brand:

Class:

Given for:

Watch for:

Caution:

DO NOT GIVE:



Brand:

Class:

Given for:

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