

# MENTAL HEALTH PHARMACOLOGY



# LITHIUM CARBONATE

## MOOD STABILIZER:

Known for its side effects and narrow therapeutic range

### THERAPEUTIC RANGE:

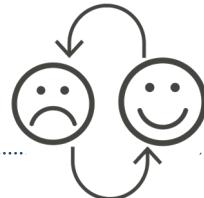
0.6 - 1.2 mEq/L



### USES

#### Bipolar disorder

Helps regulate the "mood swings" (depression & mania)



### ADVERSE REACTIONS

- Nausea
- Vomiting
- Thirst
- Polyuria
- Tremors
- Weight gain

### TOXICITY!

- Confusion
- Blurred vision
- Diarrhea
- Tinnitus  
*Ringing in ears*
- Slurred speech
- Coma
- Convulsions

### TOXICITY LEVELS

**Mild:** 1.5 - 2 mEq/L

**Moderate:** 2 - 3 mEq/L

**Severe:** > 3 mEq/L

### HOW DOES TOXICITY HAPPEN?

- Dehydration causes ↑ lithium levels in blood
- Hyponatremia
- Old age ↓ kidney function...this means lithium builds up in the blood

### EDUCATION

### CONTRADICTIONS

- Pregnancy category D:  
*Contradicted in pregnancy & breastfeeding*
- Renal / cardiovascular disease
- Dehydrated patients  
*Excessive diarrhea or vomiting*
- Receiving diuretics
- Sodium depletion
- Hypersensitivity to tartrazine

- Carry ID that shows you are taking lithium
- Educate on signs & symptoms of **toxicity**
- Educate and stress importance of taking medication regularly
- Serum lithium levels should be checked every 1-2 months
- Do not operate heavy machinery or drive
- Educate on drinking plenty of water to avoid dehydration (therefore avoiding toxicity)
- Avoid starting a low salt diet  
*Sudden ↓ in salt = ↑ in lithium*

# ANTIDEPRESSANT DRUGS

## SSRI's

Selective serotonin reuptake inhibitor

Inhibits uptake of serotonin = ↑ serotonin

Think  
Smiley  
Serotonin

ACTION

USES

SIDE EFFECTS

NURSING CONSIDERATIONS

DRUG TABLE

## SNRI's/DNRI's

Serotonin / Norepinephrine & Dopamine / Norepinephrine reuptake inhibitor

Affects serotonin, norepinephrine & dopamine

- Depressive episodes
- Anxiety disorders
- Fibromyalgia
- Diabetic neuropathy pain



GI

- Headache
- Tremors
- Difficulty sleeping
- Serotonin syndrome
- Sexual dysfunction
- Stomach issues

- Nausea
- Dry mouth / thirst
- Constipation
- Urinary retention
- Sexual dysfunction

- SEROTONIN SYNDROME**
- Too much serotonin in the brain
  - Mental changes
  - Tachycardia
  - Tightness in muscles
  - Difficulty walking
  - ↑BP & temp



GI

- Headache
- Dizziness
- Vertigo
- Photosensitivity
- Agitation/tremors
- Insomnia



GI

- Dry mouth/thirst
- Dehydration
- Constipation
- Nausea/diarrhea

- May take 4 -6 weeks to take effect  
*Educate on the importance of compliance*
- Take medication in the morning
- **First line** drug for depression/anxiety

### ⚠ SUICIDE WARNING ⚠

A client who had suicidal plans may now have the **energy** due to the medication to carry out the plans!

- May take 4-6 weeks to take effect  
*Educate on the importance of compliance*
- Do not mix with TCA's or MAOI's
- **Zyban** is used for smoking cessation.  
Do not use it while taking bupropion for depression – it could cause **overdose**.

GENERIC	TRADE NAME
sertraline	Zoloft
citalopram	Celexa
escitalopram	Lexapro
fluoxetine	Prozac
vilazodone	Viibryd

### SUFFIXES

-talopram, -oxetine, -zodone

GENERIC	TRADE NAME
bupropion	Zyban & Wellbutrin
duloxetine	Cymbalta
venlafaxine	Effexor XR
milnacipran	Savella
nefazodon	-

### SUFFIXES

-faxine, -zodone, -nacipram

# ANTIDEPRESSANT DRUGS

## TCA's

Tricyclic antidepressants

Blocks reuptake of serotonin & norepinephrine in the brain

- Depressive episodes
  - Bipolar disorder
  - OCD
- Neuropathy
  - Enuresis

- Constipation
- Dry mouth
- Drowsiness
- Blurred vision
- Orthostatic hypotension
- Urine retention
- Cardiotoxic

*Causes heart problems in patients with pre-existing cardiac conditions or elderly clients...give with caution!*

## MAOI's

Monoamine oxidase inhibitor

Blocks monoamine oxidase which causes ↑ in epinephrine, norepinephrine, dopamine, & serotonin, which causes stimulation of the CNS!

Depression



### NEURO

- Orthostatic hypotension
- Dizziness
- Blurred vision



### GI

- Constipation
- Dry mouth
- Nausea/ vomiting

### HYPERTENSIVE CRISIS

- Headache
- Stiff neck
- Nausea / vomiting
- Fever
- Dilated pupils

*Seek medical help to ↓ blood pressure*

- May take 2- 3 weeks to take effect  
*Educate on the importance of compliance*
- **WAIT** 14 days after being off MAOI's to start taking TCA's
- **Amoxapine** is not an antipsychotic drug but similar to these drugs, it may cause TD & NMS (D/C the drug immediately if these symptoms occur)

- Can take up to 4 weeks to reach therapeutic levels  
*Educate on the importance of compliance*

- Educate on the signs & symptoms of HTN crisis
- Avoid foods with Tyramine

- Aged cheese
- Fermented meats
- Chocolate
- Caffeinated beverages
- Sour cream & yogurt

GENERIC	TRADE NAME
amitriptyline	-
amoxapine	-
clomipramine	Anafranil
protriptyline	Vivactil
nortriptyline	Pamelor

### SUFFIXES

-triptyline, -pramine

GENERIC	TRADE NAME
phenelzine	Nardil
tranylcypromine	Parnate
isocarboxazid	Marplan

ACTION

USES

SIDE EFFECTS

NURSING CONSIDERATIONS

DRUG TABLE

# ANTIANXIETY DRUGS (ANXIOLYTICS)

## BENZODIAZEPINES



RX

### Bipolar disorder

Benzo's are mainly prescribed for acute anxiety, sedation/muscle relaxant, seizures, & alcohol withdrawal

Not a first-line drug for treating long-term psychiatric anxiety conditions

### ACTION

Binds to cell receptors enhancing the effects of GABA

**GABA** (inhibitory neurotransmitter) slows/calms the activity of the nerves in the brain



GENERIC	TRADE NAME
alprazolam	Xanax
lorazepam	Ativan
diazepam	Valium
clonazepam	Klonopin
chlordiazepoxide	Librium
SUFFIXES	-zolam & -zepam

**Antidote: FLUMAZENIL**

### ADVERSE DRUG REACTIONS (ADR'S)

- Mild drowsiness, sedation
- Lightheadedness, dizziness, ataxia
- Visual disturbances
- Anger, restlessness
- Nausea, constipation, diarrhea
- Lethargy, apathy, fatigue
- Dry mouth

### NURSING CONSIDERATIONS TO HELP WITH ADR'S

- Take at night if it makes you dizzy/drowsy  
Rise slowly from sitting or lying  
Do not drive or operate heavy machinery
- Fluids, fiber, & exercise!  
Give with food to ↓ GI upset
- Sips of water, suck on hard candy,  
chewing sugar-free gum

### SYMPOTMS OF WITHDRAWAL

Withdrawals typically happen when the medication is stopped abruptly or taken for >3 months

- |                   |                    |
|-------------------|--------------------|
| • ↑ Anxiety       | • Agitation        |
| • ↑ HR            | • Seizures/tremors |
| • ↑ BP            | • Insomnia         |
| • ↑ Temp/sweating | • Vomiting         |
| • ↓ Memory        | • Muscle aches     |

### NURSING CONSIDERATIONS

- Not meant for long term therapy because ↑ risk for physical & psychological **DEPENDENCE**
- Use of long term therapy leads to **TOLERANCE**  
Larger doses of the drug are required to achieve the desired outcome
- Must be **TAPERED**  
↓ the dosage gradually.  
**NEVER** stop the medication abruptly!

### CONTRAINICATIONS & PRECAUTIONS

- Pregnant, laboring & lactating women (Preg Category D)
- Elderly (↑ chance of dementia)
- Impaired liver or kidney function
- Debilitation

### NONBENZODIAZEPINES

#### ACTION

Depends on the drug

**buspirone (Buspar)**  
acts on serotonin receptors

**hydroxyzine (Vistaril)**  
acts on the hypothalamus & brainstem reticular formation

GENERIC	TRADE NAME
buspirone	Buspar
doxepin	Silenor
hydroxyzine	Vistaril
meprobamate	-

# ANTIPSYCHOTICS

Most commonly used for psychosis (schizophrenia)



**REVIEW:** Why are SGA's better than FGA's?

SGA's work on both positive & negative symptoms, and have a lower risk of developing tardive dyskinesia (TD).

## FIRST GENERATION ANTIPSYCHOTICS (FGA's)

Also called **typical/conventional**

GENERIC	TRADE NAME
chlorpromazine	-
haloperidol	Haldol
loxpipamine	Adasuve

## SECOND GENERATION ANTIPSYCHOTICS (SGA's)

Also called **atypical**

GENERIC	TRADE NAME
risperidone	Risperdal
clozapine	Clozaril
quetiapine	Seroquel
ziprasidone	Geodon
ariPIPRAZOLE	Abilify

### ACTIONS OF FGA's

- Blocks/inhibits dopamine from being released in the brain
- Helps diminish positive symptoms of schizophrenia

### ACTIONS OF SGA's

- Acts on both serotonin & dopamine in the brain
- Helps diminish positive symptoms of schizophrenia & helps negative symptoms as well!

### SIDE EFFECTS OF FGA's

- Higher risk of TD, EPS, & NMS
- Orthostatic hypotension

### SIDE EFFECTS OF BOTH

- Anticholinergic effects
- Photophobia
- Photosensitivity
- Sedation/lethargy

### SIDE EFFECTS OF SGA's

- Lower risk of TD, EPS & NMS
- ↑ Weight
- ↑ Cholesterol
- ↑ Triglyceride
- ↑ Blood sugar

### TARDIVE DYSKINESIA (TD)

- Involuntary movements of the face, tongue, or limbs that may be irreversible.

### EXTRAPYRAMIDAL SYNDROME (EPS)

- Parkinson's like symptoms
- Akathesia (restlessness)
- Dystonia (muscle twitching)

### NEUROLEPTIC MALIGNANT SYNDROME (NMS)

- Combination of symptoms: EPS, high fever, & autonomic disturbance
- One can recover 7-10 days after DC of medication, but it can be fatal if not treated in time

### CONTRAINdications

- Hypersensitivity
- Comatose client
- Depressed
- Bone marrow depression
- Blood dyscrasias
- Parkinson's disease
- Liver problems
- Coronary artery disease
- Hyper or hypotension

### NURSING CONSIDERATIONS

- Educate that it may take 6 - 10 weeks to take effect
- Tell client about adverse reactions and emphasize that adherence is very important

### FGA's

- Teach S&S of TD, EPDS, & NMS!
- Advise the client to get up slowly

### SGA's

- Check labs (blood sugar, LDL, triglycerides)
- To decrease the risk of gaining weight, advise the client about exercise, low-calorie diet, & monitor their weight.