

### Learning Activity 4.1.

Lindsey Steele

#### Psychotropic Medication Quiz

1. **What is the mechanism of action by which antidepressant medications achieve the desired effect (regardless of the different physiological processes by which this action is accomplished)?**

Most antidepressants work to increase the concentration of norepinephrine, serotonin, and/or dopamine through a complex series of interactions.

2. **For what must the nurse be on the alert with the client who is receiving antidepressant medication?**

Antidepressants affect mood and may cause an energy increase, the nurse should be alert to sudden lifts or other dramatic changes in mood.

3. **As the nurse, when would you expect the client to begin showing signs of symptomatic relief after the initiation of antidepressant therapy?**

Symptomatic relief would occur once the drug has reached its therapeutic plasma level range.

4. **Name an example of a tricyclic antidepressant** \_Amitriptyline, Clomipramine, Desipramine\_\_\_\_\_.

**Name an example of an MAOI** \_\_\_Phenelzine, Isocarboxazid, Tranylcypromine\_\_\_\_\_.

**Name an example of an SSRI** \_\_Citalopram, Escitalopram, Fluoxetine\_\_\_\_\_.

5. **Describe some common side effects and nursing implications for tricyclic antidepressants.**

Common side effects are blurred vision, dry mouth, constipation, urinary retention, orthostatic hypotension, tachycardia, weight gain, and photosensitivity. Nursing implications for these symptoms would be to offer hard candy, ice, and frequent sips of water to relieve the dry mouth. Taking the daily dose around bedtime can help with sedation. Taking antidepressant medication with food can reduce the feeling of nausea. Offer foods high in fiber, monitor intake and output, instruct the patient to change positions and rise slowly, and monitor blood pressure.

6. **\_\_Hypertensive crisis\_\_ is the most potentially life-threatening adverse effect of MAOIs. Symptoms for which the nurse and client must be on the alert include: \_\_severe occipital headache, palpitations, nausea, vomiting, fever, sweating, and tachycardia\_\_. What must be done to prevent these symptoms from occurring? (Your answer must include some examples.)** To prevent these symptoms the patient should be instructed to avoid foods containing tyramine such as aged cheeses like cheddar or Swiss, red wines, raisins, fava beans, soy sauce, processed meats, caviar, and more while taking MAOI. These diet restrictions can prevent hypertensive crisis from occurring.
7. **Lithium carbonate is commonly prescribed for \_\_Bipolar mania\_\_\_. Many times when these individuals are started on lithium therapy, the physician also orders an antipsychotic medication. Why might he or she do so?** Mood stabilizing agents, such as antipsychotic medication have demonstrated effectiveness in combination with lithium and can help manage the disorder. The mood swings of bipolar disorder can be stabilized this way and have the benefit of rapid reduction of acute mania agitation.
8. **There is a narrow margin between the therapeutic and toxic serum levels of lithium carbonate. What is the therapeutic range? List the initial signs and symptoms of lithium toxicity.** The specified therapeutic range is 0.6-1.2 mEq/L and 1.0-1.5 mEq/L for acute mania. Signs and symptoms of lithium toxicity are drowsiness, headache, nausea, or weight gain.
9. **Describe some nursing implications for the client on lithium therapy.** Promote a diet with sodium and fluid to avoid major fluctuations in the patient's lithium levels. Instruct the patient to report all medications, caffeine intake, and herbals they are taking because of interactions. Encourage the patient to drink at least 2,000-3,000 mL/day and avoid excessive sweating or fluid loss. Educate the patient on frequent monitoring of serum lithium levels, twice weekly at the initiation of therapy.
10. **What is the mechanism of action for anxiolytics (with the exception of buspirone)?** Antianxiety drugs depress subcortical levels of CNS, they potentiate the effects of the GABA in the brain to produce a calmative effect. Buspirone does not depress the CNS.

- 11. What is the most commonly used group of anxiolytics? Give two examples.** The most commonly prescribed antianxiety agent are benzodiazepines which include clonazepam or diazepam.
- 12. What are the most common side effects of anxiolytics?** Psychomotor impairment, impaired cognitive function, and paradoxical increase in anxiety. Other adverse reactions are drowsiness, dizziness, lethargy, nausea and vomiting.
- 13. What must the client on long-term anxiolytic therapy be instructed in order to prevent a potentially life-threatening situation?** The patient should be instructed on the black box warning to reduce serious risks when combining benzodiazepines with opioid pain or cough medicines. The patient should never abruptly withdraw from the medication or it can be life-threatening.
- 14. What is thought to be the mechanism of action that produces the desired effect with antipsychotic medications?** Antipsychotic medications block dopamine receptors and focus primarily on blocking the specific serotonin receptors. The psychostimulants work by increasing norepinephrine, serotonin, and dopamine release.
- 15. Phenothiazines are an example of a “typical” antipsychotic group. Give two examples of phenothiazines and two examples of the newer “atypical” antipsychotics.** Two examples of “typical” phenothiazines are Chlorpromazine and Fluphenazine. Two examples of “atypical” are clozapine, risperidone and a newer drug named lumateperone.
- 16. Describe potential adverse hormonal effects associated with antipsychotic therapy.** Male side effects are decreased libido, retrograde ejaculation, and gynecomastia which is breast enlargement. Female hormonal side effects are amenorrhea which is absence of menses, and galactorrhea which is milky breast discharge from non-breastfeeding women.
- 17. Agranulocytosis is a potentially very serious side effect of antipsychotic therapy. The nurse and client should be on the alert for symptoms of** sore throat, fever, and malaise.

**18. Neuroleptic malignant syndrome (NMS) is a rare but potentially fatal side effect of antipsychotic drugs.**

**List symptoms for which the nurse must be on the alert when assessing for NMS.** The patient must report and the nurse should assess for fever, muscle rigidity, diaphoresis, or tachycardia. The nurse must assess temperature regularly, intake and output, vital signs, and assess for deteriorating mental status.

**19. Describe the symptoms of extrapyramidal side effects associated with antipsychotic therapy.** Akathisia is a symptom of extrapyramidal side effect associated with antipsychotic therapy, it is continuous restlessness and fidgeting. Akinesia is the absence or impairment of voluntary movement. Dystonia is involuntary muscle spasms in the arms, face, legs, and neck. The oculogyric crisis is uncontrolled rolling back of the eyes that can be mistaken for seizure activity. Pseudo-parkinsonism consists of a tremor, shuffling gait, drooling, and rigidity. Tardive dyskinesia is bizarre facial and tongue movements, stiff neck, and difficulty swallowing.

**20. What is the classification of medication that is commonly prescribed for drug-induced extrapyramidal reactions? Give two examples of these medications.** Antiparkinsonian agents are used to counteract the EPS associated with antipsychotic medications. Often the drug dosage is altered, discontinued, or a different antipsychotic drug is prescribed. The first drugs approved to treat tardive dyskinesia are valbenazine and deutetrabenazine.

**21. Describe a potentially life-threatening situation that could occur in the client who abruptly withdraws from long-term use of CNS stimulants.** The patient can develop tolerance and physical dependence, any abrupt withdrawal can be life-threatening and signs include sweating, agitation, tremors, nausea, vomiting, delirium, and seizures. Antidepressants have the potential for discontinuation syndrome. There is a risk for suicide secondary to major depression related to abrupt withdrawal after extended use of CNS stimulants.

## Homework Assignment Questions and Answers

*Please read the chapter and answer the following questions:*

1. Identify three priority safety concerns for each class of psychotropic medications.

### ***Antianxiety Agents***

1. There is a serious risk and possible death associated with combining antianxiety medications with pain or cough medications.
2. Never discontinue antianxiety medication following long-term use because they can produce a life-threatening withdrawal syndrome.
3. Symptoms of sore throat, fever, malaise, easy bruising, or unusual bleeding should be reported to the physician immediately due to potential indication of blood dyscrasias.

### ***Antipsychotics (novel)***

1. Hormonal side effects such as decreased libido, retrograde ejaculation, and gynecomastia can occur in men, while amenorrhea can occur in women.
2. ECG changes, including prolongation of the QT interval are possible. Neuroleptic malignant syndrome is rare but potentially fatal and can also occur.
3. Hyperglycemia can occur for patients with diabetes and all patients taking this medication should be monitored for polydipsia, polyuria, polyphagia, and weakness.

### ***Antipsychotics (phenothiazines and haloperidol)***

1. Extrapyramidal symptoms, Tardive dyskinesia, and photosensitivity are potential risks when taking this group of medications.
2. Agranulocytosis can occur, which is an acute condition involving severe and dangerous lowered white blood cell count.
3. If antihypertensives, CNS depressants epinephrine or dopamine are taken in combination with haloperidol or phenothiazines then potentially severe hypotension is a risk factor.

### ***MAO Inhibitors***

1. MAOIs can cause a hypertensive crisis if products containing tyramine are consumed while on medication.
2. Morphine and other narcotic pain relievers can lead to serious hypotension. MAOIs taken with other drugs can cause fatal effects resulting in neuroleptic malignant syndrome.
3. Serotonin syndrome is possible if taken with SSRIs, TCAs, St. John's wart, ginkgo, and more.

### ***SSNRIs***

1. SNRIs with MAOIs result in serious, sometimes fatal effects resembling neuroleptic malignant syndrome.
2. Increased effects of warfarin and other drugs with anticoagulant effects which increases the risk of bleeding.
3. Discontinuation syndrome can occur from abrupt withdrawal and can result in nightmares, paresthesia, agitation, nervousness, nausea, vomiting, sensory disturbances, and more.

### ***SSRIs***

1. Serotonin syndrome can occur if taken concurrently with other medications that increase serotonin levels. Taking SSRIs with MAOIs can be fatal and lead to hypertensive crisis.
2. Increased risk of suicidality in children and adolescents (boxed warning).
3. Increased risk of bleeding when taken with warfarin or NSAIDS, and increased sedation when taken with alcohol.

### ***Tricyclic antidepressants***

1. This medication has sedative properties which increases the risk for postural hypotension, this is a safety concern for the patient.
2. Hyperpyretic crisis, convulsions, and death can occur with concurrent use of MAOIs.
3. Increased risk of suicidality In children and adolescents, possible QT prolongation, and tachycardia/arrhythmias may occur.

## **2. Differentiate primary actions and side effects for traditional versus atypical antipsychotics.**

First-generation or traditional antipsychotics act primarily at dopamine receptors and carry a higher risk for movement disturbances such as dystonia's. These drugs work by blocking polysynaptic dopamine receptors in basal ganglia, hypothalamus, limbic system, brainstem, and medulla. A few side effects are

dry mouth, blurred vision, constipation, urinary retention, rash, sedation, orthostatic hypotension, weight gain, decreased libido, agranulocytosis, tardive dyskinesia, photosensitivity, and more.

Atypical or second-generation antipsychotic agents are more active at serotonin receptors with weaker dopamine antagonism. They are typically preferred to the first line of treatment due to their lower risk of movement disturbances compared to the first generation. Common side effects are metabolic disturbances, weight gain, drowsiness, light-headedness, nausea, vomiting, headache, and more.

### **3. Differentiate primary actions and side effects for tricyclic versus SSRI antidepressants.**

Selective serotonin reuptake inhibitors selectively inhibit the CNS neuronal uptake of serotonin (5-HT).

SSRIs reduce depression, control anxiety, and control obsessions. Some common side effects are nausea, agitation, headache, and sexual dysfunction

Tricyclic antidepressants inhibit reuptake of serotonin (5-HT), and also inhibit reuptake of norepinephrine (NE), block NE ( $\alpha_1$ ) receptor, ACh receptor, and histamine (H1) receptors. It can reduce depression, relieve severe pain, and prevent panic attacks. Common side effects are sexual dysfunction (NE & 5-HT), sedation, weight gain (H1), dry mouth, constipation, blurred vision, urinary retention (ACh), postural hypotension, and tachycardia ( $\alpha_1$ ).