

NUR 2474 Exam 1 Review

Please review general tips from Quiz review document (test taking strategies, select all that apply questions, etc.). The test will utilize Respondus browser and monitor (using webcam). No notes or textbook allowed on the test. Calculator will be enabled in the browser.

General tips for studying:

1. Memorize names of medication categories from the presentation (SSRI's, benzodiazepines, first/second generation antipsychotics, etc.) used to treat common neuro conditions (PD, Alzheimer's disease, BPD, ADHD, etc.)
2. Memorize key drugs from categories above (there are many questions with specific drug names)
3. Use generic names
4. When reviewing particular drugs note category, indications, common side effects, toxicity signs (if applicable)

Topics to review:

1. Lithium therapy (blood testing, therapeutic levels, toxicity levels, side effects, toxic effects)
 - a. Blood level drug testing should occur early in therapy every 2-3 days, until a therapeutic dose has been established, then long term for every 3 to 6 months while using the drug.
 - b. Therapeutic Level= 0.8-1.4
 - c. Toxic Level= Greater than 1.5
 - d. SE at therapeutic level: GI effects, tremors, polyuria, renal toxicity, goiter, hypothyroidism, teratogenesis.
 - e. Toxic SE: will be much worse and possibly life threatening i.e. tremor that becomes larger with muscle incoordination.
2. BPD patients on Lithium and adjunct meds for mania/depression
 - a. The bipolar patient will have periods of mania, depression, and psychosis, and will need a mood stabilizer lithium to control their mood, an antidepressant (SSRI), and an antipsychotic (2nd gen-olanzapine, risperidone) to control the psychosis.
3. Benzodiazepines and alcohol withdrawal
 - a. The benzo will help one withdraw from alcohol by decreasing the withdrawal manifestations and intensity, while making one sleepy and having CNS depression. Plus, it is easy to give IM and will work quickly.
4. Alprazolam therapy and anxiety
 - a. Alprazolam is a benzo that is used to treat anxiety.
 - b. It works by reducing anxiety by inhibiting the GABA in the CNS, depressing the CNS.
 - c. SE: CNS depression, anterograde amnesia (patient cannot remember much), sleep driving (not safe), paradoxical effects (still anxious, stays up, rowdy), respiratory depression.
 - d. Interacts w/ CNS depressant medications (additive effects), and ETOH.
5. Treatment of anxiety patients with sedative/hypnotics

- a. Can use benzo's (pam/lam), atypical anxiolytic buspirone, SSRIs paroxetine/fluoxetine, TCAs, MAOIs, trazodone.
 - b. Sedative hypnotics can cause the patient to have sedation, sleepiness, CNS depression, anterograde amnesia (patient cannot remember much), sleep driving (not safe), paradoxical effects (still anxious, stays up, rowdy), respiratory depression.
 - c. They must always be taped by the HCP, not the patient.
 - d. Teach no ETOH use, no sleep driving.
 - e. Withdrawal can occur- PO= drowsiness, lethargy, confusion, IV= hypotension, respiratory arrest, cardiac arrest.
6. Methylphenidate (Ritalin) therapy in children
- a. Methylphenidate is used to increase attention and focus in children (NOTHING DEALING W/ BEHAVIORS)
 - b. Use of methylphenidate with kids can decrease their appetite and cause insomnia if given late in the day.
 - c. ALWAYS: give the drug in the morning, after breakfast, and give the last dose before 4pm, or else the child will not sleep at night.
7. Donepezil (Aricept) therapy in pt's with Alzheimer's disease
- a. Patients who have Alzheimer's have treatment available to slow the decline of the disease, but does not cure the disease.
 - b. Donepezil works to slow the progression of the disease by causing reversible inhibition of cholinesterase and the cholinergic receptors.
8. Review therapy discontinuation for depression
- a. If an antidepressant is stopped abruptly (cold turkey), the patient can go into withdrawal syndrome (s/s HA, Nausea, visual disturbances, sweating, dizziness, tremors).
 - b. We must gradually taper the drug over weeks slowly and call the HCP to have them guide the patient through the process.
 - c. DO NOT let patient discontinue antidepressants themselves!
9. Sertraline (Zoloft) and nursing infants
- a. Sertraline is a SSRI, and when this drug is used with a patient who is pregnant or nursing infants, the infant can have neonatal abstinence syndrome occur.
 - b. It is safe to use but may cause this.
 - c. We must educate the patient on potentially using other medications during this time period, as it can cause potential birth defects and the baby to become sick.
10. Duloxetine (Cymbalta) and alcohol abuse
- a. Duloxetine is a SNRI and when used with ETOH, it can interact with the medication and make the patient very sick.
 - b. The patient must avoid ETOH while taking any of these medications.
11. Diazepam (Valium) for status epilepticus (seizures)
- a. Diazepam, a benzo, can be used in first line to stop a seizure or a patient in status epilepticus by a IM injection.
12. Side effects vs adverse effects vs allergies
- a. Side Effects: unavoidable secondary drug effects produced at therapeutic doses. May be unwanted, but unavoidable and expected.

- b. Adverse Effects: undesired and unexpected severe responses to a medication. They do have the potential to cause harm.
 - c. Allergies: an immune response to a medication that causes a reaction that can be mild to life threatening.
 - i. S/S: itchy, rash, hives, wheezes, SOB, swelling of face, lips and throat.
 - 1. If we see these, we will stop the medication, call the doctor, D/C lines, check for antidotes, and give emergency care based on ABC's.
 - ii. Anaphylaxis can be life threatening and can kill someone. These s/s are increasingly intensified.
 - iii. When administering any medications, the RN should ask about patient allergies to medications and what happens when they take them.
 - 1. Ex: if a patient says they get N/V with a certain abx where it is expected, we will still give the med, but also may give an antiemetic. These are not s/s of allergic reaction, and we must educate the patient on it.
 - 2. Ex: if a patient says they get hives when they take a certain abx, we will not give the medication and call the doctor for the next steps.
13. Intended effect, teratogenic effect, paradoxical effect
- a. Intended Effects: effects that we want to see and that are therapeutic when using the drug.
 - i. Ex: with an antidepressant, we want to see a mood change, because that is the intended use of the drug.
 - b. Teratogenic Effect: a drug induced birth defect that can cause harm to the fetus.
 - i. Why we do not allow pregnant moms or those lactating to not take certain medications so they do not harm their child.
 - 1. Ex: antiepileptic medications- carbamazepine.
 - c. Paradoxical Effect: The opposite of the intended drug response.
 - 1. Ex: Benzo's may be used for sedation and insomnia treatment, but may instead cause them to stay up, have excitement, and to be rowdy. The opposite.
14. Tolerance vs. dependence vs. abuse.
- a. Tolerance: occurs when there is a long term reduced responsiveness to a medication over time, causing the medication to not produce a therapeutic effect.
 - i. Will need to increase the dose to get the same effect. Will be higher dose but the effects will be seen.
 - b. Dependence: the patient gets used to the drug and cannot stop using it. When they do stop the med cold turkey they can have withdrawal symptoms. Why we have to wean and taper the drug.
 - c. Addiction; occurs when the patient abuses the drug and uses it for pleasure instead as prescribed.
15. Atypical antipsychotic drug administration, time frames, reasons for
- a. Atypical antipsychotics are given when one cannot handle the EPS that the 1st generation drugs produce.
 - i. Do not use in patients with diabetes and hyper-cholesteremia – this drug can increase these effects if they already have the condition.

- ii. Weight gain may occur.
 - iii. Do not use in a patient who is elderly with dementia. It will not work and exaggerate the psychosis. They will need a cholinesterase inhibitor.
 - b. Usually dosed daily either by PO or depot IM injection
 - c. Used for schizophrenia, bipolar and some can work to help depression.
 - d. Remembers these are more of the metabolic/ endocrine affecting drugs.
- 16. Phenytoin and pregnancy, therapeutic level
 - a. Phenytoin is an anti-epileptic that treats partial and tonic clonic seizures.
 - b. Pregnancy- can be teratogenic and cause fetal deformities.
 - c. Can also interfere with clotting factors of newborns, causing bleeding
 - d. Can also interfere and decrease effectiveness of oral contraceptive use
 - e. Will need to teach the patient importance of taking folic acid while use of the drug and importance of taking the vitamin K shot before delivery of the baby, potential to switch oral contraceptive use to another way to increase effect of the anti-epileptic.
 - f. Therapeutic level: 10-20
- 17. Carbamazepine therapeutic level, indications
 - a. Therapeutic level: 5-12
 - b. Indicated for use with epilepsy, bipolar, and trigeminal neuralgias
- 18. EPS and drugs that cause them
 - a. EPS: extrapyramidal symptoms caused by antipsychotic drugs- 1st generation are more likely to cause them than second generation (ie: Chlorpromazine, haloperidol)
 - i. Early EPS: acute dystonia, oculogyric crisis, opisthotonus, joints dislocation, impaired breathing, akathisia, parkinsonism
 - 1. Acute dystonia- slow muscle movement and spasticity
 - 2. Oculogyric crisis: upward deviation of the eyes
 - 3. Opisthotonus: back spasticity
 - 4. joint dislocation: from the muscle spasms, can be painful
 - 5. impaired breathing: the diaphragm cannot work correctly due to slowing of movement
 - 6. akathisia: compulsive, restless movement, need to be in motion with anxiety.
 - 7. Parkinsonism: drug induced Parkinson's: bradykinesia, mask like face, tremor, rigidity, shuffling gait, drooling, cog wheeling, stopped posture.
 - 8. TREAT: ANTICHOLINERGICS, BENZOS, BETA BLOCKER, d/c med also if possible
 - ii. Late EPS: tardive dyskinesia: choreoathetoid movements of the tongue and face, lip smacking movement, fly catching tongue, slow worm like tongue movement, involuntary movements of limbs, toes, hips and fingers.
 - 1. Think about Yoshi from Mario games: he has a long tongue to catch coins, and he flutters when he jumps, similar to movements seen with TD
 - 2. TREAT: NONE AVAILABLE BUT YOU CAN PREVENT IT, d/c all medications and switch to a second-generation antipsychotic
- 19. Amitriptyline overdose, side effects (other TCAs)

- a. TCAs treat major depression- the block reuptake of NE and serotonin
 - b. Side effects: sedation, orthostatic hypotension, anticholinergic
 - c. Most dangerous effect is cardiac toxicity, and it will kill a patient if the TCA is overdosed on
 - i. S/S: dysrhythmias, tachycardia, heart blocks, v tach, v fib
 - ii. TREAT: gastric lavage, activated charcoal, IV HCO₃
20. Neuroleptics and PD patients
- a. Neuroleptics will only increase the effects of Parkinson's disease, as they will induce Parkinson's symptoms with EPS, it is an additive relationship.
 - b. Neuroleptic= antipsychotic
 - c. A Parkinson's patient who has psychosis will need to use a 2nd generation antipsychotic as it has a less of a chance in producing EPS effects.
21. Half-life of medications
- a. The amount of time ½ of the drug is taken out of the system.
 - b. Example: a patient gets 1000mg of a drug 4 times a day. So, in 24 hours, the patient takes this drug 4 times a day. To find the half-life, we have to divide by ½ for how many times a day the patient gets the drug.
 - i. $1000 / \frac{1}{2} = 500$ for 1st time administered, $500 / \frac{1}{2} = 250$ for 2nd time administered, $250 / \frac{1}{2} = 125$ for the 3rd time, and $125 / \frac{1}{2} = 62.5$ for the 4th time administered.
 - c. FOR EACH HALF LIFE, DIVIDE BY 1/2 !
22. MAOI's and tyramine
- a. MAOIs interact heavily with tyramine.
 - b. If a person takes an MAOI with use of tyramine rich foods- a hypertensive crisis can occur.
 - i. Hypertensive Crisis: severe HA, tachycardia, hypertension, N,V, confusion, sweating, stroke, death
 - c. We must educate our patients to avoid ALL tyramine rich food
 - d. Examples of tyramine rich food: aged meats and cheese, smoked meat, avocados, bananas, wine, beer.
23. Neuroleptic malignant syndrome (signs, causing meds and treatment)
- a. Occurs with 1st generation antipsychotics- chlorpromazine and haloperidol
 - b. S/S: lead pipe muscle rigidity, sudden high fever, sweating, autonomic, instability, dysrhythmia, BP fluctuations, altered LOC, seizures, coma. Death w/ cardiac or respiratory failure
 - c. Treat: supportive, withdraw antipsychotic med, give dantrolene and bromocriptine
24. Patient teaching for medication therapy in general (safety, compliance, etc.)
- a. Patients should take only the prescribed dose of the medication on the prescribed dosing schedule.
 - b. Patients should monitor for adverse reactions with each medication they take and report severe reactions to the HCP
 - c. Family members can assist with medication adherence by reminding their loved one to take their medication.
 - d. The patient should plan to attend all follow up appointments and lab work tests to check for drug adherence and therapeutic levels.