



NR 546: WEEK 8-
ALZHEIMER'S DISEASE &
FINAL EXAM REVIEW

ALZHEIMER'S DISEASE: OVERVIEW

- Early warning signs and symptoms... what are they? The lesson mentions 10!
- Who's most affected?
 - Those over the age of _
 - Which ethnic group of affected the most?
- AD is characterized by progressive **loss and**
decreasing **function**

ALZHEIMER'S DISEASE: NEUROLOGICAL

B. BASIS

- Genetic
- The development of AD involves a combination of what two factors?

- Do genes play a weak or strong role in the development of AD?

- Genetic coding abnormalities and mutations on chromosomes 21, 14, and 1 may also play a role

- Neuroanatomy

- **WHAT ARE THE TWO HALLMARKS OF AD?**

- What symptoms do these hallmark signs cause?

- Neural networks

- Damage to synapses, mitochondrial abnormalities, and inflammatory processes cause NTM failure and neuronal death

- Neural signaling

- Which NTM is responsible for processing memory and learning?

- Does AD lead to an increase or decrease in this NTM activity?

THE LINK BETWEEN AD AND OTHER PSYCHIATRIC DISORDERS

- Which psychiatric disorder presents in 50% of clients with AD and can lead to a more rapid decline?
- Up to 90% of patients with dementia may experience neuropsychiatric symptoms including behavioral disturbances
- Why are antipsychotics not considered a first-line treatment for behavioral disturbances?
- Which medication class **IS** considered the first line pharmacologic treatment for aggression and agitation in dementia patients?

PROGRESSION OF AD

- Describe whether each statement describes the early, middle, or late stage of AD progression
 - Lisa has short term memory deficits, has trouble recalling the date, and has stopped attending book club with her friends
 - Doug has lost his ability to speak, he no longer remembers his son, and he requires around the clock care for ADLs
 - Megan is upset and agitated because she got lost in the grocery store she's been a customer at for the last decade
 - Danny was once personable and optimistic but lately he has been withdrawn, closed off, and moody
 - Lexi is unable to recall who she is, the date or time, or where she is. Her daughter helps her to get dressed and eat in the mornings

AD: DIAGNOSIS

- A comprehensive health history is key to gathering sufficient information and data to make an AD diagnosis
- Diagnosed through the exclusion of other causes of dementia
 - Lewy body dementia, Parkinson's, Creutzfeldt-Jacob disease
- Pharmacological treatments focus on helping the client manage symptoms and behavioral issues

AD MEDICATIONS: CHOLINESTERASE INHIBITORS (CHES)

- How do these work?
- They provide alleviation of symptoms, but they do not change the progression
 - Examples:
 - Donepezil (Aricept)- inhibits centrally active ACH
 - Higher doses cause higher incidence of adverse effects
 - When added to CYP2D6 or 3A4= possibility of peripheral side effects
 - Rivastigmine (Exelon)- increases efficacy of both acetylcholinesterase and butyrylcholinesterase
 - Medications that reduce or inhibit CYP450 metabolism will not affect rivastigmine metabolism
 - Galantamine (Razadyne, Razadyne ER)- elevates ACH in the cerebral cortex to increase Ach release from existing presynaptic nerve terminals. Also increases

AD MEDICATIONS: MEMANTINE

- Memantine is a NMDA receptor antagonist
- Only approved medication to manage moderate- severe AD
- Works by preventing Glu from binding at the receptor site and regulates how much calcium enters the nerve cell
 - Blocking NMDA receptors protects neurons from the effects of too much Glu
- Cannot be used with amantadine, rimantadine, ketamine, or dextromethorphan
- Used as a monotherapy or in conjunction with ChEIs

FINAL EXAM REVIEW PRACTICE QUESTIONS

- The following questions should be used to test your knowledge on the information provided in the weekly lessons. Rationales and answers are included in the “notes” section. All information can be found in the lessons. Any questions should be directed at Avery Selch through email: aeselch7897@gmail.com. Good luck!!!

PRACTICE QUESTION #1

- A new patient arrives at the office for treatment for depression. The patient reports taking simvastatin (Zocor) and lisinopril (Zestril). When selecting an antidepressant, the psychiatric-mental health nurse practitioner eliminates fluoxetine hydrochloride (Prozac), based on the knowledge that the combination can lead to increased plasma levels of the statin, resulting in an increased risk of muscle damage and rhabdomyolysis. What is the PMHNP's rationale?
 - Both medications are CYP450 3A4 inhibitors.
 - Both medications are CYP450 3A4 substrates.
 - One medication is a CYP450 3A4 substrate and one is a CYP450 3A4 inducer.
 - One medication is a CYP450 3A4 substrate and one is a CYP450 3A4 inhibitor

PRACTICE QUESTION #2

- A patient who is to start medication therapy for depression also takes a daily aspirin, atorvastatin, and digoxin. Which of the following medications is the safest option for this patient and is least likely to cause adverse effects?
 - A. Fluoxetine
 - B. Sertraline
 - C. Escitalopram
 - D. Paroxetine

PRACTICE QUESTION #3

- A patient with depression states they also experience anxiety in social settings, and he feels excessively sleepy throughout the day. Which of the following medications can be prescribed to help alleviate these additional symptoms?
 - A. citalopram
 - B. fluoxetine
 - C. fluvoxamine
 - D. sertraline

PRACTICE QUESTION #4

- A 75-year-old patient with a history of urinary retention and chronic pain related to fibromyalgia wishes to start a medication for her newly diagnosed MDD. Which medication would be effective for this patient?
 - A. Venlafaxine
 - B. Duloxetine
 - C. Bupropion
 - D. Fluvoxamine

PRACTICE QUESTION #5

- Which of the following is true about SNRI's?
 - A. SNRIs can be stopped without tapering because of their long half- life
 - B. SNRIs can increase anxiety in some patients
 - C. SNRIs should be taken at bedtime only
 - D. Patient's taking SNRIs must avoid foods that containing tyramine

PRACTICE QUESTION #6

- Which medication should be considered for a patient who has concerns about the sexual side effects of antidepressants?
 - A. Mirtazapine
 - B. Fluoxetine
 - C. Bupropion
 - D. Trazadone

PRACTICE QUESTION #7

- Linda is a 45-year-old female who is suffering from anorexia related to her MDD. Which medication should be prescribed for her?
 - A. Bupropion
 - B. Mirtazapine
 - C. Esketamine
 - D. Phenzelzine

PRACTICE QUESTION #8

- Which medication inhibits both dopamine and norepinephrine?
 - A. Venlafaxine (Effexor)
 - B. Duloxetine (Cymbalta)
 - C. Bupropion (Wellbutrin)
 - D. Imipramine (Tofranil)

PRACTICE QUESTION #9

- A patient who took haloperidol suddenly experiences a fever of 102.6, muscle rigidity, and altered mental status. Which intervention by the PMHNP is correct?
 - A. Advise the patient to go to the emergency room and begin the patient on Dantrolene
 - B. Advise the patient to take Tylenol and increase their fluid intake
 - C. Advise the patient to stop taking their medication for 5 days then resume it at half the dose
 - D. Advise the patient that these symptoms will go away once the body is able to regulate the medication more effectively

PRACTICE QUESTION #10

- The PMHNP plans to prescribe valproic acid in conjunction with Lamotrigine for a patient with bipolar type II disorder. Which of the following does the PMHNP need to keep in mind?
 - A. The concurrent use of these drugs will be less effective than lithium but have fewer side effects
 - B. Plasma levels do not have to be monitored on patients taking these medications
 - C. When using these medications together, the valproic acid dosage needs to be cut in half
 - D. The patient needs to be monitored closely for cardiac arrhythmias

PRACTICE QUESTION #11

- Which of the following laboratory values need to be monitored for a patient on lithium? Select all that apply.
 - A. Serum lithium level
 - B. Liver function
 - C. Coagulation factors
 - D. Renal function
 - E. Urine drug testing

PRACTICE QUESTION #12

- Which of the following medications is contraindicated for treatment of bipolar disorder in a patient who has a HgBA1C of 8?
 - A. Carbamazepine
 - B. Olanzapine
 - C. Valproic Acid
 - D. Lithium

PRACTICE QUESTION #13

- Jasmine is a 27-year-old female who was recently diagnosed with bipolar disorder. She tells the PMHNP that her and her husband are trying to get pregnant. Which of the following medications would be most appropriate to prescribe to Jasmine?
 - A. Lithium
 - B. Valproic acid
 - C. Lurasidone
 - D. Carbamazepine

PRACTICE QUESTION #14

- Which of the following medications is a good option for a patient with bipolar disorder who may be forgetful or noncompliant with their medications?
 - A. PO Lithium
 - B. PO Valproic acid
 - C. IM aripiprazole
 - D. IV lurasidone

PRACTICE QUESTION #15

- A patient who abuses illicit drugs is prescribed methadone. Which of the following is true about this medication?
 - A. Methadone has a short half life so multiple doses are needed throughout the day to prevent withdrawal symptoms
 - B. Methadone is only administered in federally regulated treatment programs
 - C. Attendance at an outpatient clinic will be required every 3 months for the first year while taking methadone
 - D. After clients have taken methadone for 5 years or longer, they are less likely to relapse

PRACTICE QUESTION #16

- John is a prescription drug abuser who wishes to partake in MAT, however, he has a history of abusing and selling street drugs. Which medication option would be most appropriate for him?
 - A. Buprenorphine
 - B. Naltrexone
 - C. Suboxone
 - D. Methadone

PRACTICE QUESTION #17

- Which of the following medications is appropriate to administer to an IV drug abuser who is 6 months pregnant and wishes to get clean?
 - A. Buprenorphine
 - B. Suboxone
 - C. Naloxone
 - D. Methadone

PRACTICE QUESTION #18

- A patient with alcohol abuse disorder is actively drinking and using opiates but wishes to participate in MAT to change their lifestyle. Which of the following medications is appropriate to prescribe this patient?
 - A. Naltrexone
 - B. Acamprosate
 - C. Disulfiram
 - D. Topiramate

PRACTICE QUESTION #19

- A patient undergoing MAT for alcohol abuse presents with palpitations, headache, vomiting, and flushing. The patient states she had a glass of wine last night at dinner. Which medication is this patient most likely taking?
 - A. Chlorpromazine
 - B. Topiramate
 - C. Acamprosate
 - D. Disulfiram

PRACTICE QUESTION #20

- A patient is in the ICU suffering from alcohol withdrawal. To prevent seizures and other symptoms of psychomotor agitation, which medication should the PMHNP order prophylactically?
 - A. Carbamazepine
 - B. Naltrexone
 - C. Lorazepam
 - D. Acamprosate

PRACTICE QUESTION #21

- A patient who takes Acamprosate for alcohol abuse informs the PMHNP that she recently found out she was pregnant. The patient is compliant with the medication, and she has not had a drink in over 6 months. Which response by the PMHP is correct?
 - A. Acamprosate is unsafe for pregnancy; we will switch you to disulfiram instead
 - B. Acamprosate is safe for pregnancy, we will continue this medication
 - C. Acamprosate is unsafe for pregnancy, we will switch you to naltrexone instead

PRACTICE QUESTION #22

- Erika, who has a past medical history of MDD treated with Selegiline, a MAOI, is seeking treatment for her newly diagnosed ADHD. Which of the following stimulants needs to be avoided?
 - A. methylphenidate
 - B. dexamethylphenidate (Focalin)
 - C. amphetamine (Adzenys)
 - D. dextroamphetamine (Adderall)

PRACTICE QUESTION #23

- A patient taking IR dextroamphetamine (Adderall) states they feel great after taking their morning dose but notice their ADHD symptoms come back in the evening. Which intervention is correct?
 - A. The PMHP prescribes a nighttime dose of IR dextroamphetamine (Adderall)
 - B. The PMHNP switches the patient to lisdexamfetamine (Vyvanse)
 - C. The PMHNP has the patient divide their daily dose to take half in the morning and half at night
 - D. The PMHNP changes the patient's daytime dose to a nighttime dose only

PRACTICE QUESTION #24

- Larry is seeking treatment to alleviate his symptoms of ADHD. Larry has a past medical history of obesity, alcohol abuse, and substance abuse. Which stimulant medication is the safest option to prescribe to Larry?
 - A. Amphetamine (Adzenys)
 - B. dextroamphetamine (Adderall)
 - C. Methylphenidate (Ritalin)
 - D. lisdexamfetamine (Vyvanse)

PRACTICE QUESTION #25

- Which of the following statements about stimulant medications for the treatment of ADHD are true? *Select all that apply.*
 - A. Stimulants have a low risk of causing psychotic or manic symptoms if the patient does not have a history of bipolar disorder
 - B. Stimulants may worsen anxiety
 - C. Treatment efficacy may not be noticed until 4-6 weeks of treatment
 - D. Those who experience insomnia while taking stimulants may require a second stimulant
 - E. Stimulants should be tapered to avoid irritability and rebound symptoms

PRACTICE QUESTION #26

- A 27-year-old patient presents to the clinic with symptoms of ADHD and requests to be started on clonidine. Which response by the PMHNP is correct?
 - A. We do not usually start adults in your age group on clonidine because it can cause permanent heart defects
 - B. Have you ever heard of atomoxetine? This is the drug of choice for adults.
 - C. Guanfacine is the first line treatment for adults with ADHD because it will not worsen tics
 - D. Bupropion is the best choice for somebody who does not smoke

PRACTICE QUESTION #27

- A patient with dementia decides to seek pharmacologic treatment for their symptoms. The patient's other pertinent medical history includes diabetes and tobacco use. Which medication is most appropriate for this patient?
 - A. Donepezil
 - B. Rivastigmine
 - C. Galantamine
 - D. Ropinirole

PRACTICE QUESTION #28

- A patient with GAD presents with new onset insomnia and states she has an uncomfortable urge to move her legs at night. Which of the following medications is the first line treatment for restless leg syndrome?
 - A. Iron supplementation
 - B. Gabapentin
 - C. Ropinirole
 - D. Zolpidem

PRACTICE QUESTION #29

- Which of the following statements is true about galantamine?
 - A. This medication must be tapered with prevent adverse effects
 - B. This medication comes in both an oral and patch form
 - C. This medication increases norepinephrine and serotonin
 - D. This medication should be avoided in patients who frequently use NSAIDS

PRACTICE QUESTION #30

- A patient presents with dementia associated with Parkinson's disease. Which medication would be the best to prescribe to this patient?
 - A. Oral galantamine
 - B. Oral rivastigmine
 - C. Transdermal Donepezil
 - D. Transdermal Rivastigmine

PRACTICE QUESTION #31

- A patient is prescribed memantine in combination with donepezil. Which of the following teachings needs to be included in the patient's care plan?
 - A. The patient needs to avoid NSAIDS
 - B. The patient needs to participate in a smoking cessation program
 - C. The patient needs to ensure their living environment is free of clutter and well-lit
 - D. The patient needs to avoid driving for the next two weeks

PRACTICE QUESTION #32

- Which of the following is false about medication therapy for the treatment of Alzheimer's disease? *Select all that apply.*
 - A. Patient's who take medication for AD will have an increased life expectancy
 - B. Patients who take medications for AD can reverse the presence of amyloid plaques in the brain
 - C. Clozapine is a first line medication for the treatment of agitation and behavioral symptoms in patients with dementia
 - D. Rivastigmine is available in an oral and transdermal formulation
 - E. Galantamine is safe to be used during pregnancy

PRACTICE QUESTION #33

- A patient presents to the PMHNP with the following symptoms of dementia: disorientation to date, trouble learning new skills, and newly onset difficulties with cooking and grooming. Which stage of dementia is the patient in?
 - A. Preclinical stage
 - B. Early stage
 - C. Middle stage
 - D. Late stage