

NR546 ADVANCED
PSYCHOPHARMACOLOGY SI REVIEW

Week 3

REMINDER!!!

- This week you began diving into psychiatric medications. In order to understand this content, you must have a solid knowledge base on neurotransmitter functions! Please ensure you are comfortable with neurotransmitters prior to engaging in new material! 🏖️

PSYCHOSIS

- What is psychosis?
- What are the symptoms of psychosis?
- Is psychosis a diagnosis or a feature of other psychotic diagnoses?
- Which diagnoses require the presence of psychosis to be confirmed?
- Which diagnoses have psychosis as a feature?

SCHIZOPHRENIA

- One of the most common disorders treated by antipsychotic medications
- Schizophrenia symptoms with their related neural pathways and neurotransmitters help guide the psychiatric mental health nurse practitioner (PMHNP) in the selection of the appropriate antipsychotic medications!
- Symptoms of schizophrenia include positive, motor, cognitive, negative, and affective symptoms

SYMPTOMS OF SCHIZOPHRENIA

Decide whether each of the following describes a positive, negative, cognitive, motor, or affective symptoms of schizophrenia:

- Hallucinations
- Depression and anxiety
- Extrapyrarnidal Symptoms
- Inattention
- Alogia
- Visual memory
- Delusions
- Asociality
- Motor delay



NEUROLOGICAL BASIS FOR PSYCHOSIS & SCHIZOPHRENIA

- Do genetics play a factor in the development of schizophrenia?
- Heritability for schizophrenia may be as high as %
- When brain circuits in the cortex malfunction, clients may experience symptoms of schizophrenia
- Which NTM is responsible for the negative and positive symptoms seen in schizophrenia?
- Symptoms have been associated with dopamine levels, however, Stahl suggests that it may be more likely associated with dopamine that is “out of tune”

NEUROLOGICAL BASIS FOR PSYCHOSIS & SCHIZOPHRENIA PRACTICE QUESTION

- Which of the following are environmental triggers that contribute to the genetic development of schizophrenia? SATA!
 - Sexual abuse
 - Alcohol use
 - Bullying
 - Emotional neglect
 - Low literacy levels
 - Childhood hospitalization



TRUE OR FALSE

- Dopamine is considered the chief inhibitory NTM



ANTIPSYCHOTIC MEDICATIONS (1ST GENERATION)

- Typical antipsychotic
- Used for acute and chronic management of schizophrenia and psychosis
- Works by non-selectively blocking dopamine D2 receptors in the mesolimbic pathway
- Improves symptoms
- Risk of developing and
- Negative symptoms are unaffected

EXTRAPYRAMIDAL SYMPTOMS

- Group of symptoms related to motor control and coordination
- Caused by a dopamine _
- May affect medication compliance and ca an emergency
- Includes dystonia, akathisia, parkinsonism, bradykinesia, tremors, and tardive dyskinesia



EPS PRACTICE QUESTION

- Which of the following teachings provided by the PMHNP is correct when teaching a patient about EPS?
 - A. EPS may cause dystonia which feels like inner restlessness that may lead to rocking or finger tapping
 - B. EPS may cause bradykinesia which is involuntary movements or shaking
 - C. EPS may cause akathisia which is involuntary muscle contractions which may be painful
 - D. EPS may cause tardive dyskinesia which may cause abnormal facial and tongue movements

PRACTICE QUESTION

- A client who was recently started on a 1st generation antipsychotic 2 weeks ago presents to the office of the PHMNP reporting some uncomfortable symptoms. After further imploration from the PMNHP, the client finally admits she is experiencing sexual dysfunction and nipple discharge and states it's taking a toll on her relationship and self-esteem. Which of the following actions by the PMHNP is appropriate?
 - A. The PHMNP states this is a normal reponses to treatment and these symptoms will decrease with time
 - B. The PMHNP orders a blood test to examine the patient's prolactin level
 - C. The PMHNP educates the patient on extrapyramidal symptoms and informs the patient she will have to discontinue her medication
 - D. The PMHNP asks the patient if she's taking any OTC supplements

ADVERSE EFFECTS OF 1ST GENERATION

- What is neuroleptis? What does PEA stand for?
- Other adverse effects
 - cardiac concerns: QT prolongation, torsades de pointes, and sudden cardiac death
 - blood dyscrasias (neutropenia, leukopenia, and agranulocytosis)
 - esophageal dysmotility, aspiration
 - increased fall risk
- An imbalance of Ach results in anticholinergic effects= dry mouth, blurred vision, racing heart, constipation, and drowsiness
- A blockage of histamine results in weight gain and drowsiness
- A blockage of Apha-1 adrenergic receptors can cause orthostatic hypotension, dizziness, and drowsiness

ADVERSE EFFECTS PRACTICE QUESTION

- The PMHNP is providing education to a patient who is about to start a 1st generation antipsychotic. Which teaching is incorrect?
- A. If you develop a fever greater than 100.5 F it is important to seek medical attention
- B. An initial EKG will be performed prior to starting the medication but follow up cardiac monitoring is not recommended
- C. It is important to rise slowly from a sitting or lying position until you know how this medication affects you
- D. You may have to remove rugs from the floor and add additional light to your home while taking this medication

COMMONLY PRESCRIBED AGENTS

- Potency- concentration or amount of the drug required to produce a defined effect
- The following medications are listed from LOWEST potency to HIGHEST potency:
 - Chlorpromazine- 2nd line due to QTc issues
 - Mesoridazine
 - Thioridazine- 2nd line due to QTc issues
 - Thiothixene
 - Fluphenazine
 - Haloperidol- can be used for severe agitation and aggression
- True or false: A patient who is prescribed Mesoridazine will need a lower dose to achieve efficacy.
- True or False: Haloperidol has a higher risk of anticholinergic and antihistamine effects than Thioridazine does



ANTIPSYCHOTIC MEDICATIONS (2ND GENERATION)

- Are positive or negative symptoms more difficult to treat?
- 2nd generation (atypical) antipsychotics were created to address and treat negative symptoms, but they treat positive symptoms too
- SGAs are serotonin-dopamine antagonists
- Serotonin (5HT) can regulate dopamine (DA) directly or indirectly
 - Does stimulation of 5HT_{1A} increase or decrease dopamine release?
 - Does stimulation of 5HT_{2A} increase or decrease dopamine release?
- Which generation is the first line choice for schizophrenia? 1st line or 2nd line? Why?

2ND GENERATION ANTIPSYCHOTICS- “PINES”

- Olanzapine (Zyprexa)
- Quetiapine (Seroquel)
- Asenapine (Saphris)
- Clozapine (Clozaril)
- Pearls:
 - more potently bind to 5HT than DA
 - Sedation is common
 - Lowest risk of EPS
 - High risk for weight gain and metabolic abnormalities



PINES PRACTICE QUESTION

- Which Pine is available in a sublingual and transdermal patch?
- Which Pine should not be used in the acute presentation of schizophrenia
- Which Pine is the best tolerated antipsychotic?
- Which Pine is the MOST appropriate option for an overweight patient?
- Which Pine needs to be held if the patients ANC is less than 1500

2ND GENERATION ANTIPSYCHOTICS - “2DONES AND A RONE”

- Either bind more potently to 5HT than DA OR bind equally
- Risperidone (Risperidol)
- Paliperidone (Invega)
- Ziprasidone (Geodon)
- Iloperidone (Fanapt)
- Lurasidone (Latuda)
- Pearls
 - Less sedating
 - Less risk of metabolic effects/ weight gain
 - Higher risk for EPS and hyperprolactinemia

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DONESAND A RONE PRACTICE QUESTION

- Which medication has the lowest risk for weight gain?
- Which medication would be appropriate for someone who already struggles with maintaining healthy cholesterol levels?
- Which medication needs to be taken with at least 350 calories for proper absorption?
- Which medication needs to be monitored for the development of a rash?
- Which medication has the highest risk for hyperprolactinemia?
- Which medication can be given IM in patients with acute agitation associated with schizophrenia?

2ND GENERATION ANTIPSYCHOTICS - “2 PIPS AND A RIP”

- Aripiprazole (Ambilify)
- Brexipiprazole (Rexulti)
- Cariprazine (Vraylar)
- Pearls:
 - Pips bind more potently to DA than 5HT
 - The Rip binds equally between DA and 5HT
 - Low metabolic risks
 - Low risk of weight gain
 - Potential for EPS



CHOOSE THE BEST MED!

- Which medication is a better choice for a patient with a BMI of 32?
Clozapine or Aripiprazole?
- Which medication is a better choice for an elderly patient with a history of falls? Aripiprazole or Quetiapine?
- Which medication is a better choice for a patient with liver disease?
Clozapine or Asenapine
- Which medication is a better choice for a patient who experienced hyperprolactinemia while taking a 1st generation antipsychotic? Quetiapine or Risperidone?
- Which medication is a better choice for a patient with a history of cardiac disease? Iloperidone or Ziprasidone?

ADVERSE EFFECTS AND RISKS

- True or false: Neuroleptic Malignant Syndrome is a medical emergency.
- Signs and Symptoms of NMS
 - Diaphoresis, anxiety, tachypnea, muscle stiffness, altered mental status, tachycardia, hyperthermia
- Which of the following are appropriate interventions when NMS is suspected? SATA!
 - A. Taper the antipsychotic over a 4 week period to prevent discontinuation syndrome
 - B. Encourage the patient to hydrate frequently with fluids
 - C. Prescribe the patient benzodiazepines and muscle relaxants
 - D. Advise the patient that although the symptoms can be managed, NMS is irreversible
 - E. Examine the patient for a rash and complete a CBC

CHOOSING AN ANTIPSYCHOTIC MEDICATION

- The goal of prescribing is to select a medication that addresses the client's symptoms while avoiding unpleasant or intolerable side effects
- For example:
 - If a client is overweight or participates in a sedentary lifestyle, avoid medications that cause weight gain
 - If a client has diabetes, heart disease, or hyperlipidemia, avoid medications that have metabolic effects

PRESCRIBING CONSIDERATIONS

- Start with the _____ dose, then titrate slowly to achieve efficacy
- Dose adjustments should be made after _____ weeks of taking the _____ medication
- True or false: Most side effects and adverse effects are related to genetics

True or false: using low doses of two different antipsychotics can help patients achieve efficacy and symptom relief faster

- When switching antipsychotics, what needs to be considered?
- A patient who is currently taking Olanzapine is not happy with her outcomes so far. She is still experiencing symptoms of schizophrenia even at the highest dose of Olanzapine and is complaining of frequent insomnia. The PMHNP decides to switch her medication. Which medication is the best option for this patient to attempt to avoid adverse effects?
A. Risperidone
 - B. Aripiprazole
 - C. Paliperidone
 - D. Quetiapine

SPECIAL CONSIDERATIONS

- **Pregnancy**
 - Risk of withdrawal symptoms, EPS evident during delivery, atypical antipsychotics are more dangerous, avoid in third trimester
- **Breast feeding**
 - All antipsychotics are assumed to be in breast milk
- **Older adults**
 - BEERS criteria: avoid the use of haloperidol, ziprasidone, and olanzapine due to an increased risk of cerebrovascular accident (CVA), cognitive decline, and death in persons with dementia and with dementia-related psychosis
- **Children**
 - Black box warnings
 - Aripiprazole: Increased risk of suicide in children.
 - Quetiapine: Increased risk of suicidal ideation and suicidal behavior in adolescents/young adults during the initial 1-2 months of treatment
- **Caution**
 - Olanzapine- exercise caution in suspected alcohol withdrawal, stimulant intoxication, or anticholinergic intoxication
 - High and repeated doses of amphetamines or cocaine can mimic positive symptoms of paranoid schizophrenia

LEGAL CONSIDERATIONS

- What is informed consent?
- What are some challenges to prescribing antipsychotics?
- What is the purpose of contingency planning?
- What are examples of medications that can be used in cases of extreme agitation or violence? How are these medications given?
- What may happen if there is a delay in medication administration to agitated patients?
- What is the goal when utilizing pharmacological interventions on agitated patients?

QUESTIONS?

- To review this PowerPoint with me or with any additional questions or need for clarification, email me at aselch@chamberlain.edu!
- Remember, you can do this!!! You are more than capable! 🏆