Psychopharmacology in the Emergency Room

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Pre-Lecture Exam Question 1

1. **Which of the following statements is NOT true?**

A. Pharmaceutical agents are valuable tools in controlling acute, disruptive behavioral symptoms.
B. Pharmaceutical agents are rarely important in the emergency psychiatry setting.
C. Pharmaceutical agents can precipitate a behavioral crisis.
D. Pharmaceutical agents can be prescribed in an emergency setting.

Question 2

2. Which of the following is true of rapid tranquilization (RT)?

A. RT effectively controls the symptoms of anticholinergic delirium.
B. RT may reduce danger to staff and patient in an emergency setting.
C. RT should never be used before completion of a definitive diagnostic work up.
D. RT in the emergency room has been shown to reduce the time needed for subsequent inpatient treatment.

Question 3

3. Which of the following complications can accompany use of a high potency antipsychotic medication in the emergency setting?

A. Excessive sedation
B. Extrapyramidal adverse effects
C. Neuroleptic malignant syndrome
D. Any of the above

Question 4

4. **Lorazepam (combined with a high potency antipsychotic medication) is a popular choice for RT because of all the following characteristics EXCEPT:**

A. It is available in an intramuscular form.
B. It has a brief half life.
C. It has no active metabolites.
D. It is not habituating.

Question 5

5. Which of the following agents is LEAST useful in rapidly controlling acute manic behavior?

A. Lithium carbonate
B. Olanzapine
C. Haloperidol
D. Clonazepam

Question 6

6. Which of the following characteristics is consistent with a decision to start outpatient antidepressant treatment in an emergency room setting?

A. Patient displays delusions and/or hallucinations.
B. Patient appears able to adhere to treatment regiment.
C. Patient lack social supports.
D. Patient describes history of suicide attempts by medication overdoses.

Question 7

7. **Which of the following conditions is NOT required prior to starting a course of outpatient antidepressant medication in the emergency room setting?**

A. Assessment of suicide risk
B. Assurance that follow up care has been arranged
C. Completion of Hamilton Depression Rating Scale
D. History of prior treatment experience with antidepressants

Question 8

8. **Which of the following is true of anxiety in the emergency room setting?**

A. It often occurs in mood disorder patients.
B. It does not typically accompany acute psychotic symptoms.
C. It is rarely a response to situational factors.
D. It is often appropriate to dispense large benzodiazepine prescriptions from the emergency room.

Question 9

9. Which of the following detoxification agents is not correctly matched with its corresponding substance of abuse?

A. Naltrexone – PCP
B. Clonidine – Heroin
C. Oxazepam – Alcohol
D. Carbamazepine – Alcohol

Question 10

10. Which of the following is not true of buprenorphine as an opioid detoxifying agent?

A. It has been used in combination with clonidine and naltrexone for rapid detoxification.
B. It can be administered on a once-daily basis.
C. It is a schedule VI substance and can be freely prescribed for detoxification.
D. It is a partial opioid agonist that relieves withdrawal at low doses but can precipitate withdrawal at high doses.

Pharmacotherapy's Dual Emergency Role

- Pharmaceuticals can help aid crisis management
  - Establish control over psychotic symptoms
  - Accelerate treatment of mania
  - Reduce anxiety symptoms acutely
- Pharmaceuticals can also precipitate crises
  - Adverse effects
  - Overdoses

ER EVALUATION

- History
  - Patient may not be reliable
  - Family involvement crucial
  - Longitudinal course, compliance
- Physical Examination
  - May need to be rudimentary
- Laboratory
  - Screen for pregnancy, illcit drugs
  - Medication levels (times of last doses)
  - Routine chemistries (thyroid, liver, renal, electrolytes, CBC)

Rapid Tranquilization: The Use of Antipsychotic Drugs for Symptom Control and Safety

- Psychotic or violent symptoms can be disruptive and dangerous
  - Such symptoms are not specific to a diagnosis
  - Careful diagnostic assessment is necessary
  - Careful assessment must sometimes await behavioral control
- "Rapid Tranquilization" is the term for rapid symptom control via medications

Rapid Tranquilization (RT) Caveats

- RT may be contraindicated in some psychotic states (eg,anticholinergic delirium)
- Try behavioral methods first (limiting stimulation, offering food)
- Rules for medicating involuntarily vary from state to state
- Averting potential danger from psychosis or agitation is the goal

Approaches to RT : 1. High Potency Neuroleptic

- Typical regimen: Haloperidol 5 -10 mg IM or PO q 30 min
- Stop when clinical effect achieved or side effects intolerable
- Desired results after 1 to 2 doses most often
- Oral elixir more rapid-acting, harder to "cheek" than pills
- Intravenous use is possible
- Prophylactic benztropine can reduce risk of acute dystonic reaction but increases risk of delirium

Approaches to RT: 2. High Potency Neuroleptic Plus Benzodiazepine

- Lorazepam most popular
  - Well-absorbed orally or parenterally
  - Appropriately brief half life
  - No active metabolites
  - Typical combined regimen: Haloperidol 5 mg IM with lorazepam 0.5- 1 mg IM

- Midazolam has been advocated as RT agent
  - Fast-acting but risk respiratory arrest

Emergency Treatment of Manic Episode

- Acutely manic patients present a risk to themselves and others
- Definitive treatment of mania requires days to weeks
- Mood regulator should be started as early as is possible
- Valproate loading dose allows rapid titration
- Appropriate follow up must be arranged

ER MOOD STABILIZERS

- Lithium
  - Titration/effects take weeks
  - Restart prior dose?
- Divalproex
  - Titration/effects take days
  - Restart prior dose?
  - Rapid loading (20 mg/kg p.o.)
- Carbamazepine
  - Titration/effects take weeks
  - Restart prior dose?

MOOD STABILIZER FORMULATIONS

FORMULATION	Li	CBZ	VPA
Intravenous	-	-	+
Intramuscular	-	-	-
Suspension	+	+	+
Immediate release	+	+	+
Extended release	+	+	+
Depot	-	-	-

Emergency Room Pharmacotherapy of Depressive Episode

- No antidepressant works rapidly enough to exert effect in the emergency room
- Depression is a major cause of suicide
- Depressed patients should only be started on antidepressant in ER when they have been:
  - Assessed for safety of discharge
  - Scheduled for appropriate follow up

Emergency Room Pharmacotherapy of Anxiety

- Anxiety is a nonspecific symptom
  - Appropriate, Situational
  - Adjustment Disorder
  - Manifestation of another psychiatric disorder
  - Organic etiology
- Benzodiazepines provide rapid symptom relief
- High potency agents preferred in panic attacks

Emergency Adverse Drug Reactions

- Pharmaceuticals may precipitate ER visit
- Estimated 3% of ER visits relate to medications
- Some adverse reactions are life-threatening

Emergency Adverse Drug Reactions: 1. Antipsychotic Medications

- Acute dystonic reactions
- Akathisia
- NMS

Emergency Adverse Drug Reactions: 2. Antidepressant Medications

- Antidepressants were the most common cause of drug-related US deaths in 1988
- SRIs are less frequent causes of severe AED but can precipitate ER visit with “discontinuation syndrome”
- TCA overdoses remain a concern because of:
  - Cardiovascular instability
  - CNS depression and anticholinergic delirium

Emergency Adverse Drug Reactions: 3. Antianxiety Medications

- Cumulative CNS depression in combination with alcohol or other CNS depressants
- Anterograde amnesia
- Disinhibition
- Withdrawal symptoms

ER DISPOSITION

- Inpatient
  - Voluntary
  - Involuntary
- Day patient
  - Weekday visits (9 am - 3 pm)
  - Family monitoring
- Intensive Outpatient
  - Up to daily visits
  - Family monitoring
- Outpatient
  - Weekly visits

Basic Pharmacology

- Medications and abused drugs affect multiple organs in body
- Neuron receptors altered by abused drugs
- Neuron receptors bind medications
- And medications may block or reverse abnormalities induced by abused drugs
- Metabolism by liver - may be affected by abused drugs
- This metabolism change may impair efficacy of medications

Pharmacotherapy

- Alcohol and sedatives
- Opioids - heroin
- Stimulants - cocaine/amphetamines
- Nicotine
- Hallucinogens

Pharmacotherapy Targets

A. Overdose reversal (e.g. flumazenil)

B. Detoxification (e.g. chlordiazepoxide)

C. Relapse Prevention
- Substitution (methadone)
- Blockade (naltrexone for opioids)
- Aversion (disulfiram)
- Anti-craving or decreased effect of naltrexone for alcohol

Reversal of Overdoses

- Opioids - naloxone “IV drip”
- Benzodiazepines - flumazenil “IV drip”

Treatment of Intoxication

- Hallucinogens - benzodiazepines
- Stimulants - benzodiazepines, haloperidol

Detoxification Principles

- Prefer oral, non abusable medication
- Long duration of action
- Clear target symptoms/signs
- For polydrug abusers, consider metabolic or toxic interactions with other detox medications

Alcohol and Sedative Detoxification

- Benzodiazepines
  - chlordiazepoxide
  - oxazepam
- Barbiturates - Phenobarbital

Investigational

- Carbamazepine
- Valproate
- Gabapentin
- Adrenergic blocker augmentation

Benzodiazepines for Alcohol Detoxification

- Titrate dose to symptoms- chlordiazepoxide
- Peak symptoms at day 3, last 7 days
- Oxazepam in older or liver impaired alcoholics
- May supplement with adrenergic blockers

Carbamazepine for Alcohol Detoxification

- Non-abusable, prevents seizures
- Equal efficacy to benzodiazepines
- Taper dose days 3 to 7

Adrenergic Blockers for Alcohol Detoxification

- Beta blocker (atenolol) - 50-100 mg QD improves vital signs and agitation
- Alpha adrenergic agonist (clonidine) -0.1 mg works with benzodiazepines to control anxiety and vital signs
- Neither agent prevents seizures

Naltrexone for Alcoholism Case Course in Treatment

- Immediate subjective reduction in craving
- Challenged effect on day 1 at liquor store, bar
- Abstinent for 10 weeks on medications

Naltrexone for Alcoholism Case Course in Treatment

- Randomized to placebo at 10 weeks
- Returned unused medications at 14 weeks stating that it is placebo
- Resumed pre-treatment drinking weeks 18-24
- Returned to treatment/naltrexone week 24
- Abstinent x1 year while on naltrexone

Naltrexone for Alcoholism
Case Course in Treatment

- 38 year old married white man
- Drinking 1.5 pints vodka/night 4x weekly for 10 years
- Cocaine dependence in late 20's
- 1 prior inpatient stay with rapid relapse
- Seeking treatment under pressure from 2nd wife
- Family History+++ Alcoholic father, 2 brothers, 2 grandfathers, 1 grandmother

Opioid Detoxification

- **Methadone tapering**

Investigational

- **Clonidine or Lofexidine**
- **Clonidine/naltrexone - rapid**
- **Benzodiazepine/naltrexone - ultra-rapid**
- **Buprenorphine**

Opioid Detoxification
Methadone Tapering

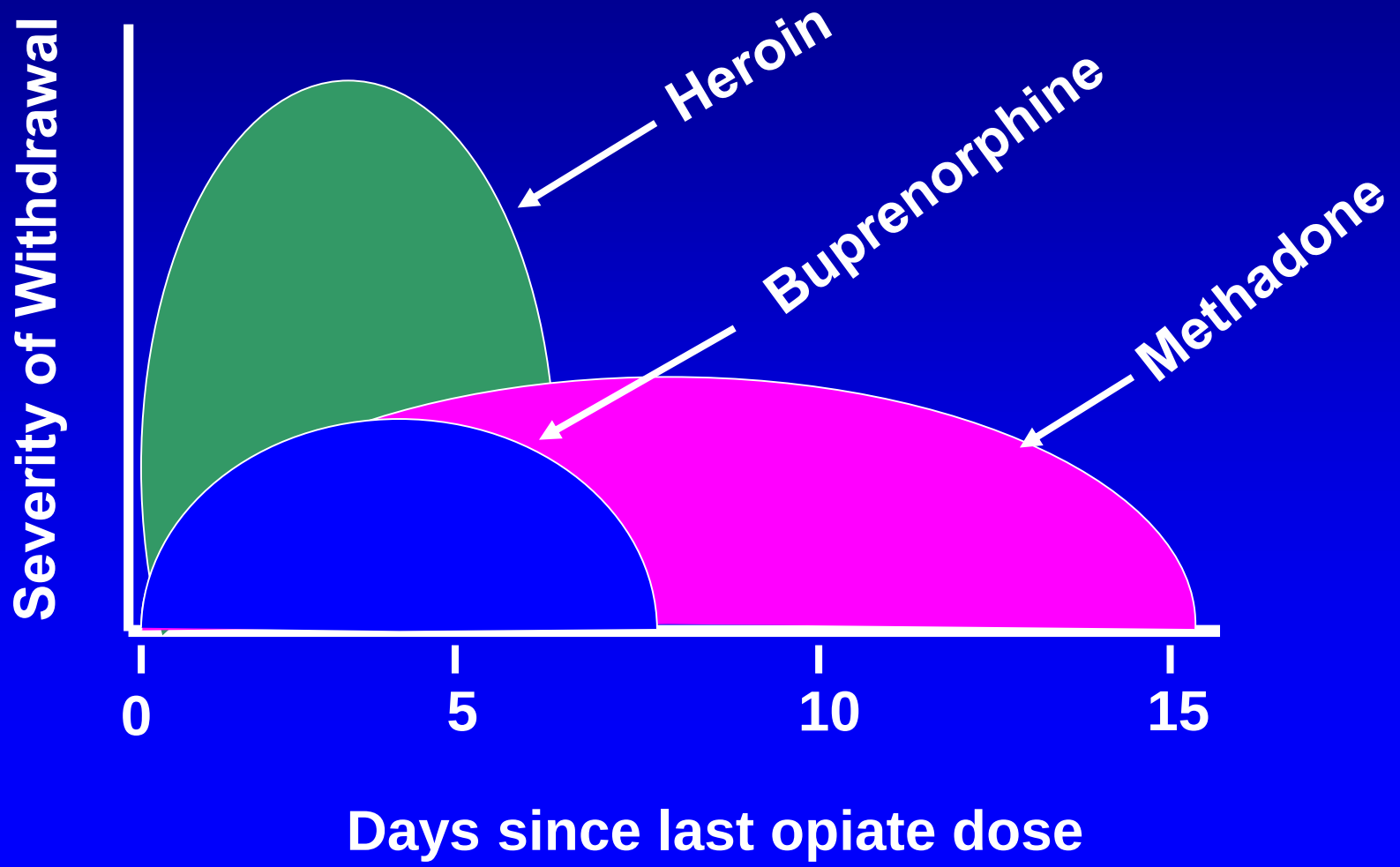
- Standard starting dose of 25-35 mg for “street addict” on heroin
- Day 2 dose same or higher, if withdrawal seen
- Day 3 reduce 5 mg/day to 10 mg, then

  2-3 mg/day reduction
- Inpatient 5-10 days, outpatient up to 30 days

Opioids: Clonidine Detoxification

- Adrenergic anti-hypertensive
- Non-abusable, oral use
- Dose titration, start 0.1 mg TID
- Heroin - 7 days, Methadone - 14 days
- Targets autonomic symptoms
- Anxiety, diarrhea not well relieved
- Side effects - sedation, orthostatic hypotension

SEVERITY OF WITHDRAWAL AFTER STOPPING EQUIVALENT DOSES OF THESE THREE OPIOIDS



Clonidine Protocol

Day 0 Usual dose of narcotic

Methadone Patients		Patients on Short Acting Opiates (heroin, oxycodone, etc.)	
Day	Dose of Clonidine (mg/day)	Day	Dose of Clonidine (mg/day)
1	0.3- 0.6	1	0.3-0.6
2	0.4-0.6	2	0.4-0.8
3	0.5-0.8	3	0.6-1.2
4	0.6-1.2	4	0.6-1.2
5	0.6-1.2	5	0.6-1.2
6	0.6-1.2	6	Cut dose in half but
7	0.6-1.2		not more than 0.4
8	0.6-1.2	7-8	Cut dose in half
9	0.6-1.2		
10	0.6-1.2		
11-14	Cut dose in half but not more than 0.4		

Opioid Detoxification: Rapid Clonidine/Naltrexone

- Inpatient or day hospital procedure - 3 days
- Clonidine preload day 1: 0.2-0.3 mg
- Naltrexone 12.5 mg, 3 hours after clonidine
- Continue clonidine TID on first day
- Day 2: clonidine + naltrexone 25 mg
- Day 3: clonidine + naltrexone 50 mg
- Augmenting agents helpful: oxazepam 30 mg

Opioid Detoxification: Ultra Rapid

- Precipitates withdrawal using naltrexone
- Benzodiazepine induced anesthesia
- Takes about one day
- Risks of severe complications/death
- High costs

Opioid Detoxification: Buprenorphine

- Partial opioid agonist: low dose withdrawal relief, high dose precipitate withdrawal
- Once daily sublingual dosing
- Transition from street heroin onto 2-6 mg
- Mild withdrawal during dosage taper
- Can combine with clonidine/naltrexone rapid detoxification

Post Lecture Exam
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Answers to Pre & Post Competency Exams

1. B
2. B
3. D
4. D
5. A
6. B
7. C
8. A
9. A
10. C