

Parkinson's Disease

I. Clinical Features

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____

II. Pathophysiology:

- A. ↓ _____ prod from Sub Nigra
- B. ↓ Inhibition of _____

III. Drug Classes

- A. Levodopa/Carbidopa
- B. MAO Type B Inhibitors
- C. COMT Inhibitors
- D. Ergot Dopamine Receptor Agonists
- E. Non-Ergot Dopamine Receptor Agonists
- F. NMDA Receptor Antagonists
- G. Antimuscarinic Drugs

Carbidopa/Levodopa

I. Drugs

- A. _____ > Parkinson's
 - i. Inhibits _____ peripherally, allows more levodopa to reach CNS
- B. _____ > Parkinson's
 - i. Converted to _____ in _____ & stimulates _____ receptors

II. Adverse Effects:

- A. _____
- B. _____/_____
- C. HTN Crisis with _____
- D. _____

MAO Type B Inhibitors

I. Drugs

- A. _____
- B. _____

II. MOA/Activity: Inhibits _____

III. Adverse Effects:

- A. _____ > HTN, Insomnia (_____)
- B. _____ > More _____

COMT Inhibitors

I. Drugs

- A. _____ > Parkinson's
- B. _____ > Parkinson's

II. MOA/Activity: Inhibits _____

III. Adverse Effects:

- A. _____
- B. _____
- C. _____
- D. _____ > _____

Ergot Dopamine Receptor Agonists

I. Drugs

- A. _____

II. Applications

- A. _____
- B. _____
- C. _____
- D. _____ (D2 stim ↓ prolactin)

III. MOA/Activity: Stimulates _____ receptors

IV. Adverse Effects:

- A. _____
- B. _____
- C. _____

Non-Ergot Dopamine Receptor Agonists

I. Drugs

- A. _____
- B. _____
- C. _____
- D. _____

II. Applications

- A. Parkinson's

III. MOA/Activity: Stimulates _____ receptors

IV. Adverse Effects:

- A. _____
- B. _____

Multiple Sclerosis

I. Clinical Features

- A. Vision Changes
- B. Weakness
- C. Pain/Fatigue/Cognitive Changes
- D. Abnormal gait

II. Pathophysiology:

- A. _____

MS Disease Modifying Drugs

I. Drugs

- A. _____ & _____
 - i. _____
- B. _____
 - i. _____
- C. _____
 - i. _____
 - ii. Adv Rx: ↑ infection, macular edema
- D. _____
 - i. _____
 - ii. Adv Rx: ↑ Liv enzymes
- E. _____
 - i. Alters cell resp to oxidative stress
- F. _____
 - i. MAB targeting _____
 - ii. Adv Rx: _____
- G. _____
 - i. _____ analog, kills T-cells

Alzheimer's Disease Modifying Drugs

I. Drugs

- A. _____

II. MOA/Activity: _____,

III. Adverse Effects: _____,

NMDA Receptor Antagonists

I. Drugs

- A. _____ > _____, _____
- B. _____ > Alzheimer's

II. MOA/Activity: _____

- A. _____ also stim dopamine release, anticholinergic

III. Adverse Effects:

- A. _____,
- B. _____ > _____, hypotension

Benzodiazepines

I. Short-Acting

A. _____

B. _____

II. Intermediate-Acting

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

III. Long-Acting

A. _____

B. _____

C. _____

D. _____

IV. MOA/Activity: _____ @
different location than _____ binding site

V. Class Applications

A. _____

B. _____

C. _____

D. _____

E. _____

VI. Adverse Effects:

A. _____

B. _____

C. _____

D. _____

Benzodiazepine Antagonist

I. Drugs

A. _____ > Benzodiazepine Reversal

II. MOA/Activity: _____

III. Adverse Effects: _____, _____

Partial Serotonin Agonist

I. Drugs

A. _____ > GAD

II. MOA/Activity: Partial _____ receptor agonist

III. Adverse Effects: _____, _____

Barbiturates

I. Drugs

A. _____

B. _____

C. _____

D. _____

E. _____

II. MOA/Activity:

A. Potentiates _____ (prolongs
chloride channel opening)

B. _____

C. _____

III. Class Applications

A. _____

B. _____

IV. Adverse Effects

A. _____

B. _____

C. _____

Other Hypnotics (Sleep)

I. Drugs

A. _____ > BZ1 receptor agonist

B. _____ > BZ1 receptor agonist

C. _____ > BZ1 receptor agonist

D. _____ > Melatonin receptor agonist

II. Adverse Effects:

A. _____ Agonists > _____, _____

B. _____ > _____

Selective Serotonin Reuptake Inhibitors (SSRIs)

I. Drugs

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

II. Class Applications

A. _____

B. _____

C. _____

D. _____

III. MOA/Activity:

IV. Adverse Effects:

A. _____

B. _____

C. _____ (children/teens)

D. _____

E. Overdose: _____, _____

Serotonin Norepinephrine Reuptake Inhibitors

I. Drugs

A. _____

B. _____

C. _____

II. Applications

A. _____

B. _____

III. MOA/Activity: Blocks _____ & _____ reuptake in CNS

IV. Adverse Effects:

A. _____

B. _____

Atypical Antidepressants

I. Drugs

A. _____ > Depression,
smoking cessation

B. _____ > Depression

II. MOA/Activity

A. _____ > _____ & _____
reuptake inh.

B. _____ > Presynaptic
_____ receptor antagonist (↑ NE &
serotonin transmission)

III. Adverse Effects:

A. _____ > _____

B. _____

5HT2 Receptor Antagonists

I. Drugs

A. _____

B. _____

II. MOA/Activity

A. _____

B. Blocks post-synaptic _____ receptors

C. _____

III. Adverse Effects:

A. _____ > _____

B. _____ > _____

Tricyclic Antidepressants

I. Drugs

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____
- G. _____
- H. _____
- I. _____
- J. _____

II. MOA/Activity

- A. _____ & _____ reuptake inhibition
- B. Blocks _____, _____ & _____ receptors

III. Class Applications

- A. _____
- B. _____
- C. _____

IV. Adverse Effects:

- A. _____
- B. _____
 1. Tx: _____ for QRS widening
- C. Alpha blocker effects
 1. Tx: _____
- D. Histamine effects
- E. Discontinuation syndrome
- F. Seizures
 1. Tx: _____
- G. _____
- H. _____

Lithium

I. Lithium

II. MOA/Activity: Unknown

III. Class Application: _____

IV. Adverse Effects:

- A. _____
- B. _____
- C. **Toxicity:** _____, _____, slurred speech, _____, _____, death
- D. _____

Non-Selective Monoamine Oxidase Inhibitors

I. Drugs

- A. _____
- B. _____
- C. _____

II. MOA/Activity

- A. _____ > ↑ NE, dopamine, serotonin levels

III. Class Application: _____

IV. Adverse Effects:

- A. _____: Aged/meats cheeses due to ↑ _____ & ↑ release of neurotransmitters = _____
1. Tx: _____
- B. _____

First Generation Antipsychotics

I. Drugs

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____
- G. _____
- H. _____

II. MOA/Activity: _____

III. Class Applications

- A. _____
- B. _____

IV. Adverse Effects:

- A. _____
 1. _____
 2. _____
 3. _____
- B. _____: long-term abnl repetitive movement (lip smacking, neck/limb movements)
- C. _____: Rigidity, fever, AMS, unstable BP
 1. Tx: Supportive care, _____
- D. _____

Second Generation Antipsychotics

I. Drugs

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____
- G. _____
- H. _____
- I. _____
- J. _____

II. MOA/Activity:

- A. Competitive inh. of _____ receptors
- B. _____

III. Class Applications

- A. _____
- B. _____

IV. Adverse Effects:

- A. _____
 1. Much less common than 1st gen
- B. _____: long-term abnl repetitive movement (lip smacking, neck/limb movements)
- C. _____: Rigidity, fever, AMS, unstable BP
 1. Tx: _____, _____
- D. _____
- E. _____

Inhaled Anesthetics

I. Drugs

- A. _____
- B. _____
- C. _____
- D. _____

II. MOA/Activity: Possibly ↑ sens. of GABA receptors

III. Class Application: _____

IV. Adverse Effects:

- A. _____
- B. _____
- C. _____ (autosomal dominant, uncontrolled ↑ metabolism in skeletal muscles)
 1. Tx: _____, cooling supportive care

Antiepileptic Chart

Drug Name	Mechanism	Application	Adverse Effects	Other
Carbamazepine	Sodium channel blocker	Seizures Trigeminal neuralgia Bipolar	Erratic absorption Stevens-Johnson Syndrome	Do not use in absence seizures
Divalproex	Sodium channel blocker GABA blocker ↓Ganglionic low threshold Ca current	Seizures Bipolar Disorder Headache	Teratogenic Hepatotoxicity Pancreatitis	
Ethosuximide	T-type Ca Channel Inhibition	Absence Seizures	SLE	
Phenobarbital	Enhances GABA inhibition	Status epilepticus	Impaired cognition; Precipitates acute intermittent porphyria	
Primidone	Enhances GABA inhibition	Status epilepticus		Metabolized to phenobarbital
Phenytoin	Blocks Na channels in inactive state	Focal seizures Tonic-clonic seizures Status Epilepticus	CNS depression (vestibular) Gingival hyperplasia Nystagmus/ataxia	No IM: Necrosis/abscess formation May precipitate with IV infusion
Fosphenytoin	Blocks Na channels in inactive state	Focal seizures Tonic-clonic seizures Status Epilepticus	CNS depression (vestibular) Gingival hyperplasia Nystagmus/ataxia	Rapidly converted to phenytoin
Eslicarbazepine	Voltage gated sodium channel blocker	Partial-onset seizures	Diplopia	
Ezogabine		Seizures	QT Prolongation Blue skin discoloration Retinal abnormalities	
Felbamate	Voltage gated sodium channel blocker Ca Channel Blocker GABA potentiation NMDA receptor antagonist	Refractory epilepsy	Hepatic failure Aplastic anemia	
Gabapentin		Adjunct for focal seizures Post herpetic neuralgia		
Lacosamide		Adjunct for focal seizures		
Lamotrigine	Na Channel Blocker High Voltage Ca Channel Blocker	Generalized, focal, & absence seizures Bipolar disorder	Stevens-Johnson Syndrome Diplopia	
Levetiracetam		Generalized seizures Focal onset seizure Myoclonic seizures		
Oxcarbazepine	Na Channel Blocker Converted to 10-MHD	Partial onset seizures	Diplopia	
Perampanel	alpha-3-hydroxy-5-methyl-4-isoxazolepropionic acid antagonist	Partial onset seizures	Gait disturbance Behavioral reactions	
Pregabalin		Focal onset seizure Diabetic neuropathy Post-herpetic neuralgia	Weight gain Edema Ataxia	Renal elimination
Rufinamide		Adjunct in Lennox-Gestaut syndrome in age >4	Short QT interval (don't give in patients with familial short QT)	
Tiagabine	Blocks GABA uptake in presynaptic neurons	Adjunct for partial onset seizures		
Topiramate		Partial onset epilepsy Generalized seizures Migraine prophylaxis	Kidney stones Glaucoma	
Vigabatrin	Inhibits GABA-T (↑GABA levels)	Lennox-Gestaut Syndrome	Visual field loss	
Zonisamide	Sodium channel blocker Blocks T-type calcium currents	Focal onset epilepsy	Kidney Stones Oligohydrosis (↓Sweat)	Contraindications: Sulfonamide hypersensitivity CA inhibitor hypersensitivity

Intravenous Anesthetics

First Generation Antipsychotics

I. Drugs

A. _____

1. Activity: CNS Depressant

2. Adverse Effects

a) _____

b) _____ (drug mixed in soybean oil and egg phospholipids)

c) _____: heart failure, rhabdomyolysis, metabolic acidosis, renal failure

d) _____ (_____)

B. _____

1. Activity: _____

2. Adverse Effects

a) _____

b) _____

C. _____

1. Activity: Induces _____, _____, ↑ _____,

2. Adverse Effects

a) _____

b) _____

c) "Special K" – street drug

D. _____

1. Activity: _____

a) _____

b) _____

c) _____

2. Adverse Effects: _____,

Amide Local Anesthetics

I. Drugs

A. _____

B. _____

C. _____

D. _____

II. MOA/Effects: _____ –

blocks sensory impulses from reaching CNS

III. Adverse Effects

A. _____

B. _____

C. _____

Ester Local Anesthetics

IV. Drugs

A. _____

B. _____

C. _____

D. _____

E. _____

V. MOA/Activity: _____ –

blocks sensory impulses from reaching CNS

VI. Adverse Effects

A. _____

B. _____

C. _____: _____

Opioid Receptors

	Analgesia, respiratory depression, sedation, euphoria, dependence, constipation
	Analgesia
	Analgesia, dysphoria

Opioid Mechanisms

I. **Pre-synaptic Neuron:** Opioids ↓ Ca^{2+} influx →

↓ glutamate release, reducing transmission

II. **Post-synaptic Neuron:** Opioids potentiates K^+

channel opening → hyperpolarizes post-

junctional cells

III. Activate G_i → inhibits adenylyl cyclase →

↓ cAMP and ↓ protein phosphorylation

Opioids

I. Drugs

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

I. _____

J. _____

K. _____

L. _____

II. MOA/Effects:

A. _____

B. _____

C. _____

D. _____

III. Adverse Effects

A. _____ - (↓ sensitivity to _____)

B. _____

C. _____

D. _____ Release

E. _____

F. _____

Partial Opioid Agonists

I. Drugs

A. _____

II. MOA/Activity

A. MAO enzyme inhibition: _____

III. Class Application: _____

IV. Adverse Effects:

A. Precipitation of _____ if given to patient without symptoms of _____

B. _____ / _____ less common

Mixed Opioid Agonist/Antagonists

I. Drugs

- A. _____
 B. _____
 C. _____

II. MOA/Activity

- A. _____
 B. _____

III. Class Application: Analgesia

IV. Adverse Effects:

- A. _____:
 Nightmares/hallucinations, caution in CAD
 (↑systemic and PA pressures)

Other Opioid Analgesics

I. Drugs

- A. _____
 B. _____

II. MOA/Activity

- A. _____
 B. _____: NE reuptake inhibitor
 C. _____: NE & Serotonin reuptake inh.

III. Class Application: _____

IV. Adverse Effects:

- A. Less _____ than traditional
 opioids
 B. _____
 C. _____

Opioid Antagonists

I. Drugs

- A. _____: Opioid reversal
 B. _____: Opioid/Alcohol dependence

II. MOA/Activity:

III. Class Application: _____

IV. Adverse Effects:

- A. _____
 B. Naltrexone: _____

Methylxanthines

I. Drugs

- A. _____: Stimulant/Neonatal apnea
 B. _____: Asthma

II. MOA/Activity:

- A. _____
 B. Increase in _____ & _____

III. Effects:

- A. _____
 B. _____
 C. _____
 D. _____

IV. Adverse Effects:

- A. _____
 B. _____
 C. _____

Amphetamines - ADHD

I. Drugs

- A. _____
 B. _____
 C. _____
 D. _____
 E. _____

II. MOA/Activity: Stimulates release of
 _____ and _____

III. Adverse Effects

- A. _____ / _____
 B. _____
 C. _____
 D. _____ / _____

Amphetamines - Narcolepsy

I. Drugs

- A. _____
 B. _____

II. MOA/Activity: Stimulates release of
 _____ and _____

III. Adverse Effects

- A. _____ / _____
 B. _____
 C. _____
 D. _____ / _____