
بسم الله الرحمن الرحيم

MOTTO AND VISION

- To impart evidence-based research-oriented medical education
- To provide the best possible patient care
- To inculcate the values of mutual respect and ethical practice of medicine

PHARMACOLOGY

ANTIPARKINSONISM DRUGS II

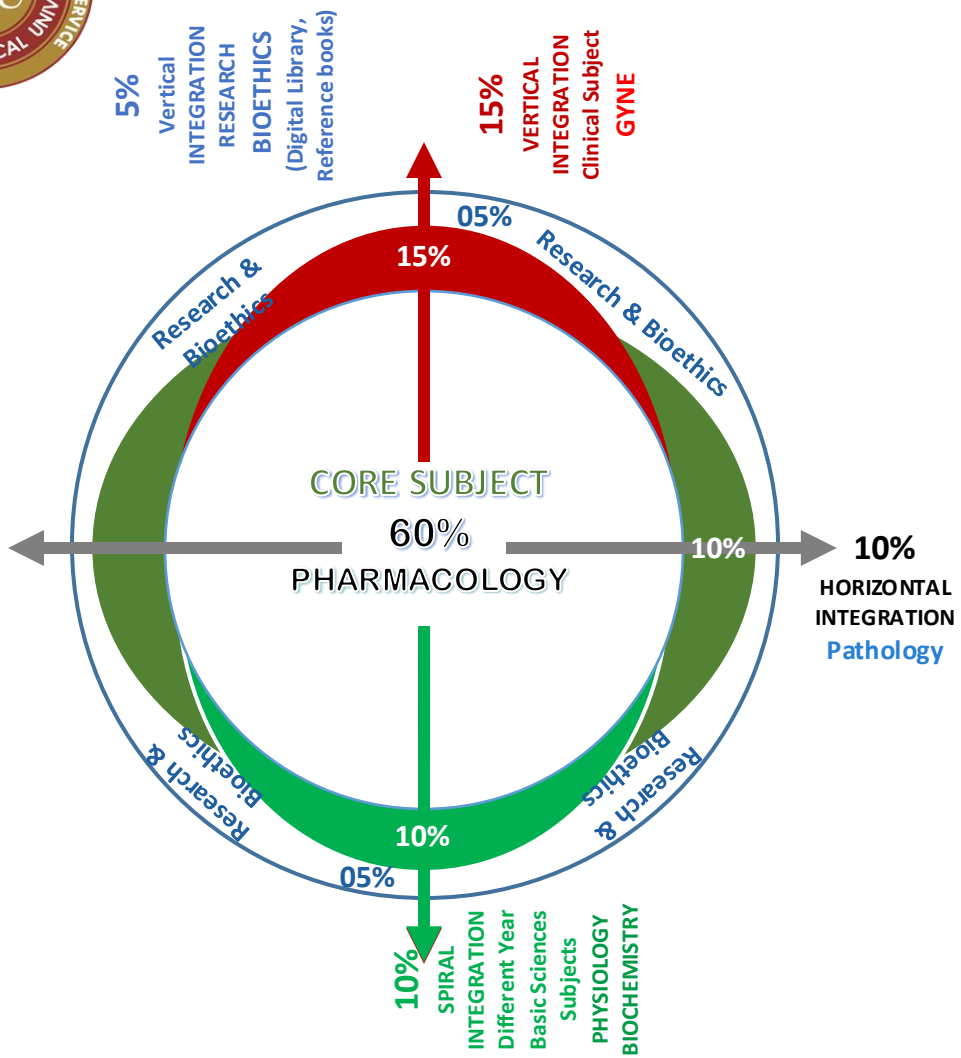
4th Year MBBS 06-09-2024

PHARMACOLOGY

Sources:

1. **Bertram G. Katzung Basic & Clinical Pharmacology 15th Edition**

Prof. Umar's Clinically Oriented Integration Model
For Basic Sciences Interactive Lectures



3rd Year Pharmacology CBL	
Core Subject – 60%	
Pharmacology	
Horizontal Integration – 10%	
Same Year Subjects	• Pathology (10%)
Vertical Integration – 15%	
Clinical Subjects	• medicine
Spiral Integration – 10%	
Different Year Basic Sciences Subjects	• Physiology (5%) • Biochemistry (5%)
Vertical Integration – 05%	
Research & Bioethics,Digital library	

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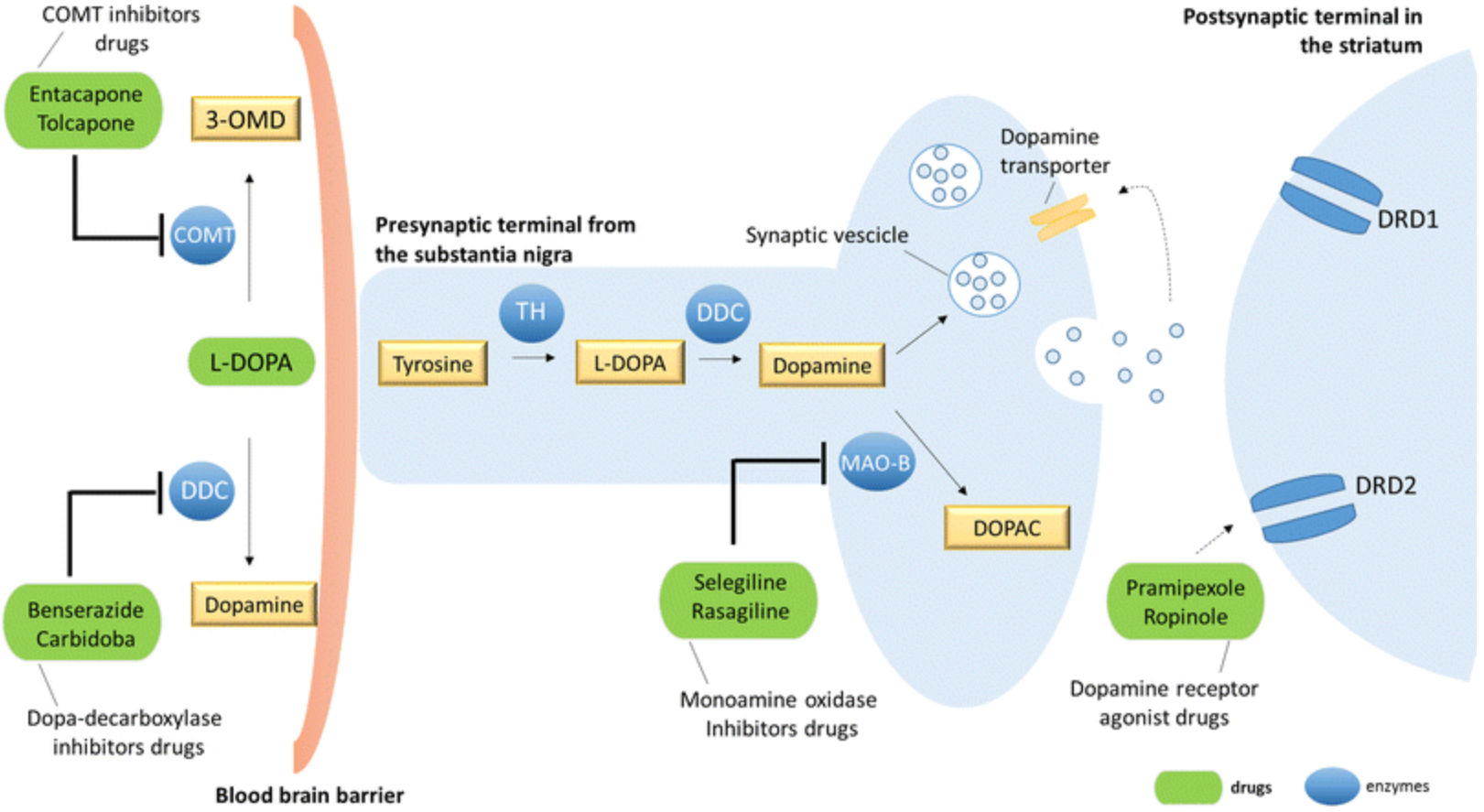
LEARNING OBJECTIVES

- Discuss pharmycodynamics of anti parkinsonism drugs.
- Discuss adverse effects ,drug interactions and clinical uses.

DOPAMINERGIC DRUG THERAPY



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DOPAMINE RECEPTOR AGONIST

SITE OF ACTION= Post synaptic dopamine receptors

ERGOT DERIVATIVES:

1.Bromocriptine(D2 activity)

2. Pergolide(D1+D2 activity)cardiac valvulopathy

NON ERGOT DERIVATIVES

1. Pramipexole(D3 activity)
2. Ropinirole(D2 activity)
3. Rotigotine

NON ERGOT DOPAMINE AGONIST

- **Pramipexole**: effective monotherapy for mild parkinsonism
- Neuroprotective d/t scavenging H2O2 & enhanced neurotrophic activity in mesencephalic dopaminergic cell cultures.
- Permits reduced levodopa dose with reduced response fluctuations 0.125mg TDS,doubled after 1 wk,then again doubled after 1wk,further increment by 0.75mg weekly upto 1.5mg.
- **Ropinirole**: smoothing response of levodopa fluctuations and advanced disease.
- Metabolized by CYP1A2,oral 2-8mg TDS.
- **Rotigotine:** used in early parkinsonism,skin patch,continous dopimenergic stimulation.

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ADVERSE EFFECTS

- GIT EFFECTS:
- Bleeding from peptic ulcer,NV,Constipation
- CVS EFFECTS:
- Postural hypotension,cardiac valvulopathy ,painless digital vasospasm
- MENTAL DISTURBANCES:
- Withdrawl syndrome(reintroduce &slow tappering)
- Disorders of impulse control(respond to dec dose or drug withdrawl)
- Confusion,hallucinations,delusion(respond to atypical antipsychotics)

MAO-B INHIBITORS

- SELEGILINE: Stops break down of dopamine by irreversibly blocking MAO-B.
- Used as adjunctive therapy with fluctuating levodopa response
- Enhances effects of levodopa(dec dose),reduces mild on-off phenomenon,slows disease progression.
- 5mg with breakfast and lunch
- RASAGILINE: Prevents MPTP Induced parkinsonism
- Adjunct therapy to prolongs effects of carbi+levodopa combination in pt with advanced disease & response fluctuations in 0.5-1mg OD
- SAFINAMIDE: Reduces wearing off and on-off phenomenon.50mg OD

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DRUG INTERACTIONS

- Serotonin syndrome with TCA and SRI's
- Antitussive dextromethorphan
- Meperidine,cyclobenzaprine,tramadol,methadone
- Hypertensive crisis with nonselective MAO and levodopa co administration due to peripheral accumulation of NE.

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CATECHOL-O-METHYLTRANSFERASE INHIBITORS(COMT-INHIBTORS)

- MOA: inhibits COMT thus decrease peripheral degradation of levodopa therefore increases its bioavalibility.
- ENTECAPONE(peripheral)
- TOLCAPONE(c+p,hepatotoxic)
- Smooths dose response fluctuations , prolonged on time and reduce dose of levodopa
- ADVERSE EFFECTS:
- Same as excess of levodopa exposure ie dyskinesia,nausea,confusion
- Orange discoloration of urine,hepatotoxic,ALF

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APOMORPHINE

- Non ergoline D2 agonist at post synaptic terminals
- Used as rescue for off period of akenisa in pt on optimized dopaminergic therapy

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AMANATIDINE

- Antiviral agent,it antagonize effect of adenosine at A2a receptors,which may inhibit D2 receptors,It also antagonize NMDA type glutamate receptors suggesting antidyskinetic effect
- 100mgBD used to reduce iatrogenic dyskinesia in pt. With advanced disease
- **Adverse Effects** : restlessness,impulse control disorder, acute toxic psychosis,livedo reticularis

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ACETYLCHOLINE BLOCKING AGENTS

- Improve tremors and rigidity of parkinsonism.lil effect on bradykinesia.
- Benztropine may cause acute suppurative parotitis as complication of xerostomia.

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RESEARCH AND BIOETHICS

- New Treatments for Parkinson's Disease | APDA
- Ethical Aspects of Personal Science for Persons with Parkinson's Disease: What Happens When Self-Tracking Goes from Selfcare to Publication? - PMC

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