بسم الله الرحمن الرحيم

٢٩ ربيع الثاني ١٤٤٤ هـ

lec(1)

① alkaloids → atropine (ANS drug)
morphine (opioids)
caffiene (panadol extra)
theophylline (anti asthma)
quinine (anti malaria)

② metal → platinum → cisplatin (anti cancer drug)
zinc → zinc oxide (anti septic)

③ non metals → Sodium chloride → normal saline
Magnesium sulfate → antacid

~ · ~ · ~ · ~ · ~ · ~ · ~ · ~

④ nefidipine → vasodilator

⑤ penicillins → antimicrobal acting on cell wall

⑥ generic name: diclofena Na } trade name: voltaren, diclogesic, inftaban

⑦ drugs that show more than one generic name:

Noradrenalin / adrenaline → in UK

Norepinephrin / epinephrine → in USA

Salbutamol → in UK

albuterol → in USA

⑧ Beta adrenoceptor Blocker → propranolol
nebivolol
atenolol

⑨ lidocain → local anaesthetic drug

⑩ ventolin → inhaler drug

⑪ nicotine patches → skin patches

lec (2)

① mannitol → Osmotic diuretic
(Freely filtered + excreted from kidneys)

↓
isosorbide
alcohol sugar

* used in cerebral edema
, ICP intracranial pressure
, toxicity (overdose)
Flushing of toxins

② Mg sulfate → Gastric antacid

③ Milk → Chelating agent
used in lead poisoning
/arsenic poisoning

④ Isoproterenol → agonist
(important therapy in asthma)

⑤ propranolol → Antagonist
(control heart beat)
(bronchconstriction, VC)

⑥ propranolol → Bi-Suprolol → nebivolol
decrease heart rate, treat tachycardia

من الريكورد

⑦ mastard gas and Sarine gas

→ Covalent bond

من الريكورد

⑧ ampketamine, methampketamine

↳ captagon

→ when agonist molecule continue to be present for long periods

desenitization هذا يؤدي إلى

For preventing excessive activation

⑨ Benzodiazepenies → enhance the stimulation of GABA receptor resulting in increase of Cl influx and hyperpolrization of cell

lec (3)

1. atropine is a competitive reversible antagonist to Ach at muscarinic receptors;
2. Beta-blockers are competitive antagonists to adrenaline at beta –adrenergic receptors.

3. example on allostric enhancement → binding of Benzodiazepines to GABA-A receptors can enhance the depressant GABA effect on brain neurons

4. repeated use of indirect sympatnomimetic ampheta mine → leading to deplition of Noradrinaline stores in vesicles inside sympathetic nerve endings

lec (4)

: potentiation التآزر

(1) treatment of AIDs by combination therapy with CAZT Azidothymidine and a protease inhibitor)

* AZT Azidothymidine is a nucleoside analog that inhibits HIV human immunodeficiency virus reverse transcriptase

* protease inhibitor is important for viral replication

(2) digoxin → narrow therapiutic index 50 microgram ← قيمة dose لل (bioavailability critically alters the therapiutic effect)

(3) propranolol → غير non specific + non selective for β receptor selective for β not α غير ولكن ***

4 : predictable مثال على
side effect

aspirin → GI problems
like bleeding and ulcers

5 Functional predictable مثال على
toxic effect :

(morphine + bethidine) → بطء
respiratory depression

6 : immune complex مثال على
mediated reaction

Serum sickness (vaccine, antivenom)

7 : Idiosyncrasy مثال على

Sulfonamides → hemolysis بطء
+ anti malaria drug primaquine
→ hemolysis بطء
due to dificiency of the
Enzyme (G6PD)
favism هذا اسمه الفول

(8) Idiosyncrasy ردة فعل

Warfarin → oral anticoagulant

resistance يعني

VD → resistance يعني

(9) Alklayting agent →

anti cancer drug عبارة عن

wich damages DNA of the cell

Genotoxicity leading to mutagenicity ← ردة فعل

(10) chloraamphinicol → aplastic anemia

Delayed toxicity ردة فعل

(11) : Dependence ردة فعل

alchol, opioids like morphine

(12) Adverse effect مثال على ادوية بتعمل

over extension نتيجة

of same mechanism of action

on same target tissue:

Sedative-hypnotics /

anticoagulants

/beta adrenoceptors blocker

(13) AVKs مثال على ادوية بتعمل due to effect on

same receptor type

but in another tissue:

anti mascuranic drugs / Beta blocker

lec "5"

(1) acetylsalicylic acid → aspirin

(2) generic names:

aspirin → captopril, atenolol, amlodipine

(3) drugs that have 2 generic name:

(neostigmin, prestigmine)

(epinephrine, adrenaline)

(norepinephrine, nor adrenaline)

(meperidine, pethidine)

(4) Brand names:

Aspocid, capoten, Myodura, Inderal, tonormin

(5) Barium chloride → completely water-soluble compounds are not absorbed

6. Quaternary ammonium compound → ionized ∴ (poor absorption)

7. Streptomycin → high pKa

∴ always ionized ∴ not absorbed orally (given IV or IM)

8. tetracyclines → has Ca^{+2} salt as excepient (Filler) ∴ orally ↓ absorbtion

lec "6"

1) aspirin → more protonated (unionized) and more lipid soluble in the stomach.

2) pyrimethamine → more unprotonated (unionized) and more lipid soluble in intistine

3) aspirin + phenobarbital → acid drugs

5) amphitamine → Basic drug

8) Nitroglycerin → Sublingual ~~drug~~ for angina

9) propranolol → extensively metabolized in thier 1st pass through liver before reaching systemic circulation

- S-propranolol
- R-propranolol

10) estrogen → intestinal 1st pass effect

(11) nicotine → pulmonary metabolism

(12) heparin → distributed in vascular compartment and (ionized)

(13) neostigmen → distributed in vascular and interstetial compartment and lesser degree of ionization at plasma

(14) barbiturates → distributed in vascular and interstetial and intracellular compartment / non ionized and liphophilic

(15) penicillin + cephalosporin → meningitis

(16) thalidomide → لاحظ
teratogenisity (no arms or legs)

(17) thiopental → highly
Lipid soluble drug
reapsorbtion يصير من ال CNS الى
skeletal muscle and fat
يعطي في حالة ال
nausea
(الغثيان)

(18) aspirin + amiodarone
→ displace warfarin from
its pp binding site

(19) chloroquine →
concentrated in liver

(20) iodides → concentrated in thyroid and salivary glands

lec (7)

1. inactive drug → active
   - enalapril → enalaprilat
   - prednisone → prednesolone
2. Drug → toxic metabolit
   - halothione → toxic epoxides conjugated with glutathione
   - paracetamol
3. phenobarbitone
   + Rifampicine
   + nicotine
   + carbamezapine
   + phenytoin
   → enzyme induction for microsomal enzyme

1. Rifampicin (enzyme inducer) may enhance metabolism of progesterone and warfarin

5. phenobarbitone may be used to enhance eliminiation of bilirubin in physiological jaundice

6. Rifampicin enhances metabolism of warfarin, and may lead to failure of contraception (enhance metabolism of progesterone)

7

- **N**a$^+$ valproate
- **A**llopurinol
- **C**limetidine
- **C**iprofloxacin
- **C**ontraceptive pills
- **E**rythromycin

enzyme inhibition (inhibit activity of microsomal enzymes)

8

penicillin, probenicid & salicylic acid or basic carrier for amphetamine &quinine → Active secretion occurs either through acid carrier in the PCT

9

sites of excretion:

1.Bile: with enterohepatic recycling e.g. rifampicin, doxycycline, ciprofloxacin & azithromycin, or without enterohepatic recycling e. g. ceftriaxone and cefoperazone.

- Biliary excretion of these drugs increased their efficacy in treatment of enteric and biliary diseases.

2.Lungs e.g. volatile anesthetics.

3.Saliva e.g. iodides.

4.Sweat e.g. rifampicin.