Digoxin

Come from digitalis a.k.a Foxglove plant family Scrophulariaceae. a.k.a figwort family or Plantaginaceae.

↑se contractility → use in HF

Low TI

Mostly use is digoxin
Digitoxin: seldom use

MOA

Regula. of cytosolic Ca^{2+} conc.

act on M_2 receptor.

Inhibit Na^+/K^+ ATPase ⇒ ↑se Na^+ inside the cell

↑se Na^+ exchange for Ca^{2+} by Na^+/Ca^{2+} exchanger, as Na^+ is in excess amount inside the cell ⇒ ↑se Ca^{2+}(in)
so Ca^{2+} is exchanged for Na^+(out)

more Ca^{2+} avail for next contractility cycle.

This raise potential from -90mV → -70mV (which ↑se risk of arrhythmia as cell become easily excitable)

↑se contractility

- ↑se force of contrac. ⇒ ↑ CO
- ↑ vagal stimul. (release Ach) so HR & O_2 demand ↓ses
- ↓ AV conduction thus useful for ATRIAL FIBRI (1-2ng/ml).

Neurohormonal inhibition

Low doses ⇒ ↓sympth stimul & minimal effect on cardiac

This is the reason, low Serum Drug conc. is targeted in HFrEF 0.5-0.8 ng/ml

THERAPEUTIC USES

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- Severe HFrEF after initiation of ACE, β-bloc & Diuret
- 0.5-0.8 ng/ml [ABD] BAD
- High conc: ↑ mortality, ↓ admissions

AFib/flutter + Diastolic or right sided HF (if both are present) otherwise NOT use in alone RSHF

For mild → moder HF (ACE, ARBs, Aldosterone anta, Vaso & reno dilators e.g. Nitrates (vena) Hydala/orteri) and diuretics are used
so Digoxin NOT req.

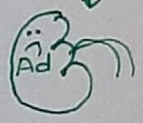
KINETICS

- Oral + IV
- Subslate of P-glycoprotein so CAV = ↑se digoxin level (clarithro, vera, Amioda).

large Vd (dose given acc. to lean body mass)

LD require in AFib

$t_{1/2}$ 30-40 hrs



ADRs

Toxicity: - N/V/Anorexia
- Blurred or yellow vision (xanthopsia)

Severe toxici = ventric tachycardia

Manag:- DigiFab & antiarrhy

Caution ē drug that ↓ AV cond
Verapamil, Dilti, β-blocker
[vera has block heart (dil)]

Manag: Discontinue Digox.
- Monitor K+ level esp if co-admē Thiazid/loop so replenish K+ level in case of ↓se