

Hypothyroidism :-

- Levothyroxine: synthetic t_4
 - $\downarrow$ cardiotoxicity
 - longer duration
- Liothyronine: synthetic t_3
 - myxedema coma (emergency)
 - $\uparrow$ cardiotoxicity (because it's fast)
- Can't be taken with Ca^{+2}

Hyperthyroidism :-

- β -blockers: Do not treat t_3/t_4 only symptoms

} Symptomatic treatment

— Propranolol; Thyroid storm, Rapid control BUT no cardiac control

— (β_1 selective) atenolol, / / + Cardiac control

- if β blockers don't work $\rightarrow$ Diltiazem: Ca^{+2} channel blockers
 - used in Asthma / severe HF

Drugs that lower T_3/T_4 :-
Synthesis

- Methimazole: affect multiple enzymes affecting T_3/T_4 synthesis

- PTU: Used in thyroid storm, better than Methimazole because it blocks peripheral T_3 formation

- Both might cause Agranulocytosis
- Affect new synthesized hormone ONLY; stored T_3/T_4 will not be affected

(Needs 1-3 months to see the difference)

• Drugs affecting current T3/T4;

• I-131: - Radioactive Iodine $\rightarrow$ Radiation destroys thyroid

- Can be used in follicular + papillary carcinomas
(They have valid iodine transporter)

- May cause Hypothyroidism $\rightarrow$ give levothyroxine

- Contraindicated in pregnancy

• Lugol's / KI: - $\downarrow$ T3/T4 release Rapidly

- used in thyroid storm

- $\downarrow$ vascularity (for thyroidectomy)

- Only temporary (escape phenomenon)

Thyroid storm

- ① β -blocker : Control heart (sympathetic)
- ② PTU : $\downarrow$ synthesis + $\downarrow$ T3/T4
- ③ KI (Iodide) : $\downarrow$ release of stored T3/T4
- ④ Glucocorticoid : Protection against shock