



Practical on Endocrine

Contents:

➤ **CNS practical:**

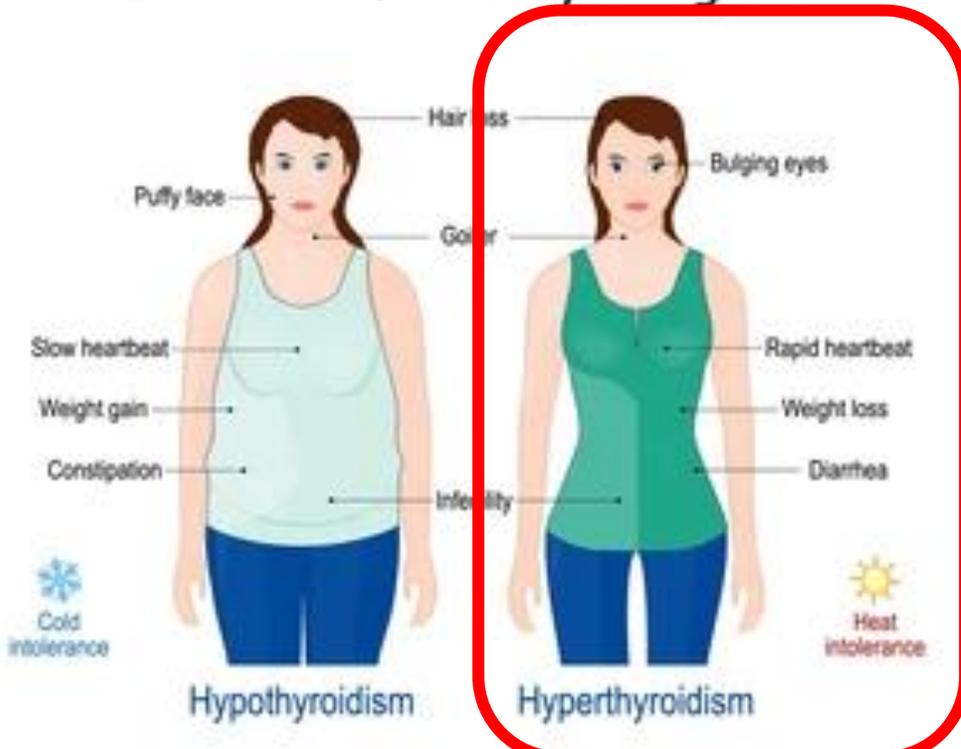
- ~~1. Anti-depressants & Anti-anxiety~~
- ~~2. Anti-epileptics~~
- ~~3. Narcotic analgesics~~

➤ **Endocrine practical:**

- 1. Hyperthyroidism and Hypothyroidism**
2. Anti-DM

Hyperthyroidism

Disorder of the thyroid gland



Decreased TSH
Increased T3 and T4

3 treatment modalities → used to control hyperthyroidism of Graves' disease

Antithyroid drugs

→ are the favored therapy

- **Thioamides (Methimazole and propylthiouracil)**
- Administered for a prolonged period → **1 to 2 years**
- **+ propranolol** → at the onset of treatment → β -adrenergic receptor blocker → ↓ symptoms of sympathetic overactivity → ↓ tachycardia and hypertension in symptomatic patients.

Radioactive iodine therapy (I^{131})

In the US, radioactive iodine → the main therapy

SE → 80% to 90% of patients become **hypothyroid** → require lifelong thyroid hormone replacement.

CI →

- **Pregnant/breast feeding** women
- Ptns with **thyroid cancer**
- Ptns with **moderate to severe Graves-related eye disease**
- Ptns with **heart disease (unless controlled)**

Surgery

Subtotal or total thyroidectomy
Least favored therapy

Treatment of choice for →

- ptns with **very large** gland causing pressure symptoms
- ptns with **large multinodular** glands
- sometimes in females who **desire pregnancy** within the next year
- Ptns with **thyroid cancer**
- Ptns with **moderate to severe Graves-related eye disease**

SE →

- **Hypothyroidism**
- Transient/Permanent **hypoparathyroidism**
- **Recurrent laryngeal nerve paralysis**

A 26-year-old first-trimester **pregnant** woman is diagnosed with **hyperthyroidism**.

- What are the treatment options for this woman?
- What adverse effects of the prescribed drug should this patient be cautioned about?

A 53-year-old woman with the diagnosis of **Graves' disease** is being treated with **radioactive iodine**. She should be **warned** of the high likelihood of:

- A. Hashimoto's disease.
- B. iodism.
- C. hypothyroidism.
- D. thyroid nodules.
- E. thyroid cancer.

Contents:

➤ **CNS practical:**

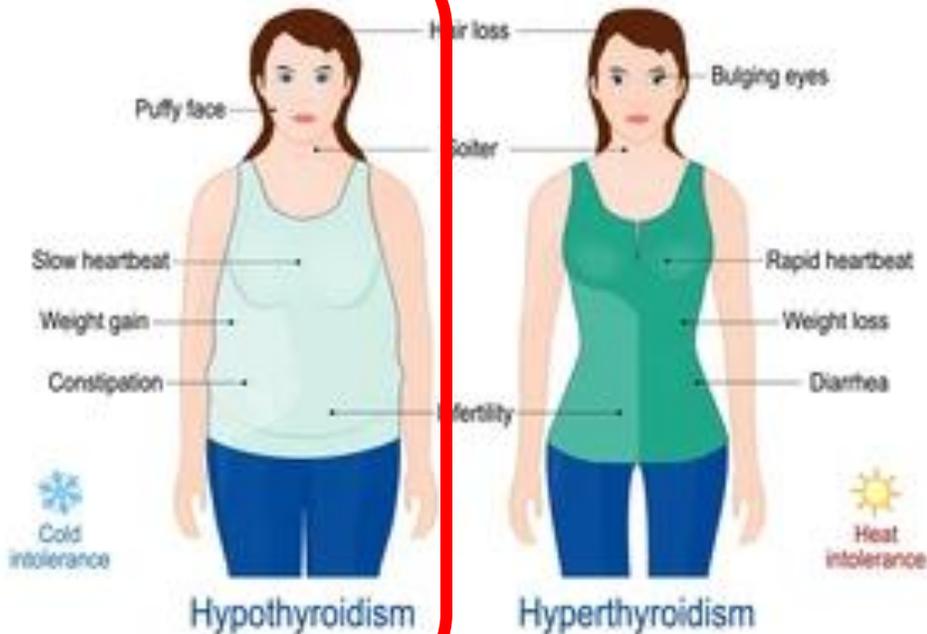
- ~~1. Anti-depressants & Anti-anxiety~~
- ~~2. Anti-epileptics~~
- ~~3. Narcotic analgesics~~

➤ **Endocrine practical:**

- ~~1. Hyperthyroidism and Hypothyroidism~~
- ~~2. Anti-DM~~

Hypothyroidism

Disorder of the thyroid gland



Increased **TSH**
Decreased **T3** and **T4**

Levothyroxine

Synthetic T4 → drug of choice for thyroid hormone replacement

- Relative potency → **1**
- $t_{1/2}$ → **8 days**
- **Once** daily administration
- Coffee, Ca⁺² preparations, Al⁺³-antacids → ↓ absorption of levothyroxine → recommended to be taken on empty stomach
- Response to levothyroxine therapy → monitored after 6 - 8 weeks → **clinical improvements & ↓ serum TSH levels**

A 33-year-old woman comes to the clinic complaining of **fatigue, lethargy, heavy periods, dry skin, and constipation** for the past 6 months. The **symptoms have not improved** despite her primary care provider giving her a **vitamin with iron**. She noticed a **2.5-kg weight gain** over the past 4 months. The patient's **TSH is elevated** and his **T4 is slightly decreased**. The doctor suspects **hypothyroidism** and begins replacement therapy with **levothyroxine**

- What are the goals of therapy, and what precautions must be taken during therapy?
- What are the adverse effects of levothyroxine therapy?

When initiating **T4 therapy** for an **elderly patient** with long-standing **hypothyroidism**, it is important to **begin with small doses** to avoid which of the following?

- A. A flare-up of exophthalmos
- B. Acute renal failure
- C. Hemolysis
- D. Overstimulation of the heart
- E. Seizures

Contents:

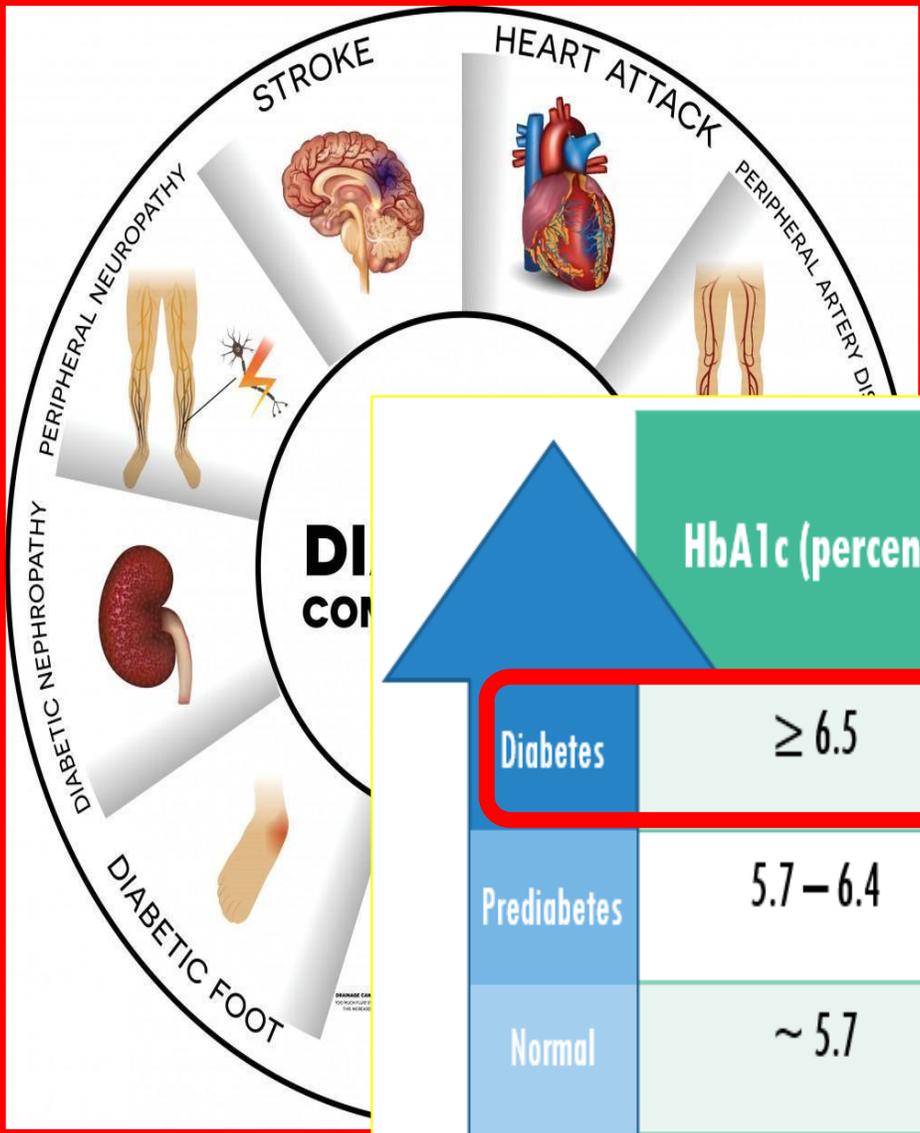
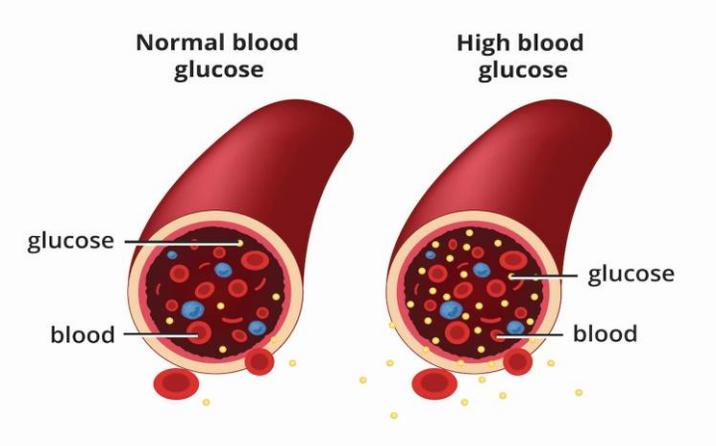
➤ **CNS practical:**

- ~~1. Anti-depressants & Anti-anxiety~~
- ~~2. Anti-epileptics~~
- ~~3. Narcotic analgesics~~

➤ **Endocrine practical:**

- ~~1. Hyperthyroidism and Hypothyroidism~~
- 2. Anti-DM**

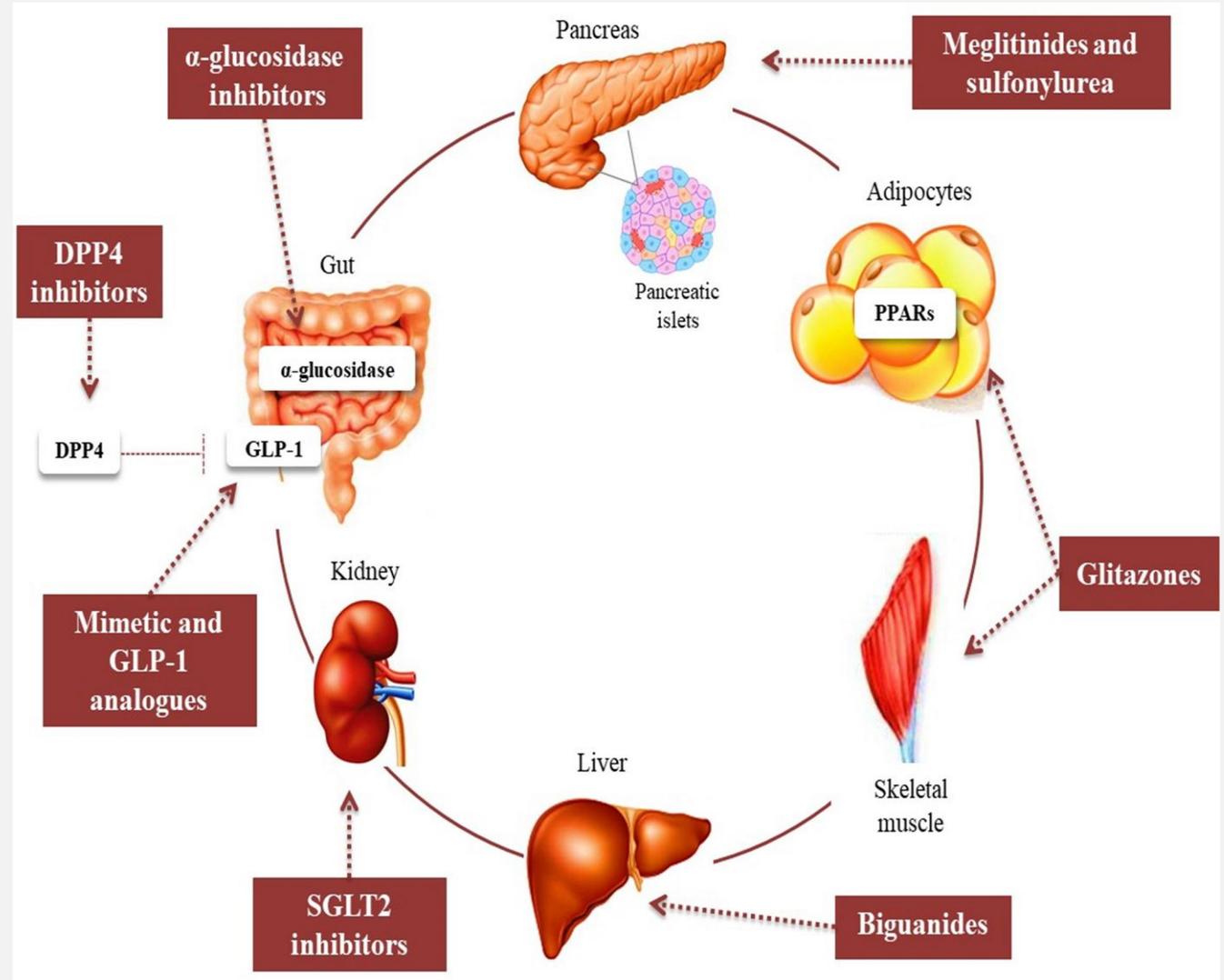
Anti-DM



3 P'S OF DIABETES

- 
1. POLYURIA
 EXCESSIVE URINATION
- 
2. POLYPHAGIA
 INCREASED APPETITE
- 
3. POLYDIPSIA
 EXCESSIVE THIRST

	HbA1c (percent)	Fasting Plasma Glucose (mg/dL)	Oral Glucose Tolerance Test (mg/dL)
Diabetes	≥ 6.5	≥ 126	≥ 200
Prediabetes	5.7 – 6.4	100 - 125	140 – 199
Normal	~ 5.7	≤ 99	≤ 139



A 36-year-old female patient has a past medical history of **Type 2 diabetes** mellitus. Her blood glucose was controlled by **gliclazide**. Now, she becomes **pregnant**.

- What modification should be done for her diabetic condition?

A 42-year-old woman, was diagnosed with **type 2 diabetes mellitus** based on the history, physical examination, and lab results. She was given **dietary and lifestyle modification advice** and was started on **metformin** 500 mg to be taken once a day with breakfast.

Which of the following **actions most likely mediated the antidiabetic effect of the drug** in the patient's disease?

- A. Decreased breakdown of glycogen
- B. Increased intestinal glucose absorption
- C. Increased insulin secretion from the pancreas
- D. Increased glucose excretion in urine
- E. Decreased glucose output from the liver

Again !!!

Stress on:

- ✓ **Drug names (group/members)**
- ✓ **Uses and Choice**
- ✓ **Mechanism of action**
- ✓ **Adverse effects**
- ✓ **Drug interactions**

