

Hypothyroidism

Depression in the level and synthesis and release of thyroid hormones T_3 & T_4

Causes:

1) Primary hypothyroidism:

- Iodine deficiency $\rightarrow$ less thyroid hormone produced
- Hashimoto thyroiditis $\rightarrow$ Destruction by Autoimmune
- Subacute thyroiditis
- After treatment for hyperthyroidism

(Surgery, Radioactive treatment)

- Congenital Hypothyroidism

(Absent, Underdeveloped or Developed in wrong place), Sporadic, Gene mutation

2) Secondary hypothyroidism:

- Tumor in anterior pituitary - $\downarrow$ TSH
- Tumor or trauma to hypothalamus - $\downarrow$ TRH

Clinical features:

1) Cretinism:

Etiology:

- Iodine deficiency
- Gene Mutation
- Cland Absent, Underdeveloped or wrongly developed
- Defect inside the gland

6 Ps:

Pale
Puffy Face
Protruding umbilicus
Pot belly
Protruding tongue
Poor brain development

Clinical features:

- $\downarrow$ Metabolic rate $\rightarrow$ Excessive sleeping, dull, lethargic
- Growth and mental retardation. Loss of T_4 if not given T_4 within 6-12 months.
- Protruding tongue, broad nose, dry skin, Constipation
- Shorter height due to delayed closure of epiphyseal centres, Delayed dentition and delayed milestones

- TSH screening of the neonate is must if mother is hypothyroid and T₃BI, T₃AB, are must if mother is positive.

Treatment.

- Thyroid hormone replacement therapy:

- T₃, T₄ ↓, TSH normal or low.

2) Myxoedema

- In juvenile and adult myxoedema.

Clinical features

- Decreased heart rate.
- Decreased respiratory rate.
- Weight gain.
- Decreased sweat.
- Intolerance to cold.
- Constipation.
- lethargy, sleepiness.
- Skin dry, coarse.
- Menstrual: Menorrhagia.
- Precocious puberty.
- Loss of hair.

- Cappel's Syndrome.

- Hoffmann's Syndrome → Hypertrophy of muscles, and pseudomyotonia.

- Pendred's Syndrome - Deafness or deaf-mutism with goitrous hypothyroidism.

- Myxoedema swelling due to deposition of GAGs.

Non-pitting edema, Puffy Face ⇒ GAGs

Investigation:

- T₃, T₄ ↓ ↑TSH in primary and ↓TSH in secondary.
- ↑ Serum cholesterol.
- ↑ anti T₉, T₃AB, Immune cells.
- ECG.

DD: Nephrotic Syndrome, CHF.

Treatment: Thyroid hormone replacement.

Complication ⇒ Myxoedema Coma ⇒ Respiratory