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HYPOTHYROIDISM

DEFINITION

Hypothyroidism also called as underactive thyroid or low thyroid. It is a disorder of the endocrine system in which the thyroid gland does not produce enough thyroid hormones (T3 and T4). Hypothyroidism occurs in elderly called as Myxedema coma. Hypothyroidism occurs in developing fetus called as cretinism.

EPIDEMIOLOGY

About 1 million people are estimated to be iodine deficiency results in Hypothyroidism.

ETIOLOGY

- Iodine deficiency- Goitre
- Hashimotos thyroiditis
- Thyroidectomy

PATHOPHYSIOLOGY

Normally, thyroid hormones are necessary for the normal development and metabolism in our body. It is mostly found in all forms of tissues.

Normal value of Free T4 is 9-18 pM. Normal value of TSH is 0.5-5 mIU/l.

But in case of Hypothyroidism, free T4 is lower than the normal. TSH is greater than the normal level.

Iodine deficiency- Goitre

Iodine in our diet is necessary for normal thyroid hormones secretion. Due to deficiency of iodine or malnourished nutrition leads to iodine deficiency. Iodine deficiency leads to decreased T3 and T4. In case, TSH is increased; trying to produce T3 and T4. Increased TSH cause thyroid tissue enlargement and more dividing of tissues.

Hashimotos thyroiditis

Hashimotos thyroiditis is an autoimmune disorder, in which the antibodies attacks its own target cells of thyroid.

Leads to atrophy (shrinking of cells).

Goitre

Causes decreased secretion of thyroid hormones.

Thyroidectomy

Removal of thyroid gland partially or in whole is called thyroidectomy.

Thyroidectomy is due to two major reasons:

- Hyperthyroidism
- Thyroid cancer

Thyroid cancer may be;

- Papillary
- Follicular
- Medullary- produce calcitonin
- Anaplastic- undifferentiated stem cell.

DIAGNOSIS

Blood test:

- Thyroid stimulating hormone (TSH)
- Thyroxine (T4).

TREATMENT

People with Hypothyroidism symptoms and confirmed thyroxine deficiency treated with hormone replacement therapy:

- Levothyroxine (T4).
- Combination of levothyroxine (T4) with liothyronine(T3) to provide better symptoms control.