

hypothyroidism

dr m.hesam

internist

causes of hypothyroidism

- **primary**
- autoimmune
 - hashimoto
- iatrogenic :
 - ^{131}I
 - thyroidectomy
- drug :
 - amiodarone
 - contrast
 - lithium
 - antithyroid drug
- congenital
- iodine deficiency
- infiltrative disease :
 - amyloidosis
 - sarcoidosis
 - hemochromatosis
 - scleroderma
 - riedel

causes of hypothyroidism

- **secondary**

- hypopituitarism :

- tumor
 - surgery
 - irradiation
 - Sheehan
 - trauma
 - genetic

- isolated TSH deficiency

- hypothalamic disease :

- tumor
 - surgery
 - idiopathic

- **transient**

- silent thyroiditis , postpartum

- subacute thyroiditis

- after 131 I treatment

- after surgery for GRAVES

autoimmune hypothyroidism

- woman... 4/1000
- ↑age
- chronic exposure to high iodine diet + low selenium intake
- lymphocytic infiltration fibrosis
- goiter ...atrophic
- HLA- DR3 , DR4 , DR5

autoimmune hypothyroidism

- DM1 , Addison , pernicious anemia , vitiligo , alopecia areata
- celiac , dermatitis herpetiformis , chronic active hepatitis , RA , SLE , MG , sjogren

clinical manifestation

- dry skin , decreased sweating , thinning of epidermis , hypercratosis
- myxedema , puffy face , nonpitting pretibial edema
- constipation
- libido ↓ , oligomenorrhea , fertility ↓ , prolactin ↑
- pleural effusion , apnea

clinical manifestation

- myocardial contractility ↓
- pulse rate ↓
- peripheral resistance ↑
- diastolic HTN
- pericardial effusion
- carpal tunnel syndrome
- muscle cramp
- myxedema coma
- hoarse voice , clumsy speech
- intellectual impairment ... <3yr

laboratory evaluation

- TSH ↑
- T4 ↓
- T3 ↓ .. 25%
- CPK ↑
- CHOL ↑
- TG ↑
- anemia , normocytic , macrocytic

treatment

- levothyroxine 100 – 150 μg
- TSH in lower half of range
- TSH ... 2 month ... 12.5-25 μg \uparrow
- symptom ... 3-6 month
- AF \uparrow , bone density \downarrow

treatment

- $\geq 200 \mu\text{g}$.. ????
- poor adherence to treatment
- celiac , small bowel surgery , HP gastritis , estrogen
- ingestion with meal
- fe , ca , selevamer , sucralfate , PPI , carbamazepine , phenytoin

subclinical hypothyroidism

- TSH <10
- symptom , anti TPO + , pregnant , heart disease + \uparrow TSH for 3 month
- levothyroxine 25-50 μg

pregnancy

- miscarriage , preterm delivery
- anti TPO
- prior to conception ... TSH <2.5
- 45% ↑ levothyroxine
- immediately after pregnancy q4w q6-8w

- **elderly patients**

- levothyroxine 12.5-25µg

- q2-3month

- **surgery**

- emergency surgery safe

- routine surgery ... euthyroidism

myxedema coma

- ↓LOC
- seizure
- $T < 23$
- hypoventilation : ↓ O_2 , ↑ CO_2
- ↓bs
- ↓Na
- poor compliance
- drug : sedative , anesthetic , antidepressant
- pneumonia , CHF , MI , GIB , CVA , sepsis

myxedema coma

- Rx:
 - levothyroxine 200-400 μg iv / po levothyroxine 1.6 $\mu\text{g}/\text{kg}/\text{d}$ po
 - liothyronine 5-20 μg 2.5-10 q8h μg
 - space blanket
 - hydrocortisone 50mg q6h
 - antibiotic
 - ventilator support
 - hypertonic saline
 - glucose iv

- **thank you**