

Pathophysiology:

Negative Feedback Loop (ex. correction of a thermostat) activated by a disturbance in homeostasis.

Thyroid Gland

T3- Triiodothyronine

T4- Thyroxine

Purpose:

1. Metabolic Process (burn calories)
2. Cellular replacement
3. Digestion
4. Sympathetic Stimulation
5. Regulate T & HR
6. Brain Function

Hyperthyroidism "Fight or Flight"

Causes Graves Disease, Toxic Nodular Goiter, Exogenous Hyperthyroidism (taking too much thyroid med), Thyroiditis, Excessive Iodine consumption

S/S Anxiety, increased HR, weight loss, restlessness, jittery, heat intolerance, palpitations, insomnia, increased systolic BP, hands tremor, hyperactive reflexes, possible goiter

Graves Disease Autoimmune, genetic component, production of TSI, TSI mimics TSH = increased thyroid hormone production

S/S: Exophthalmos, pretibial myxedema

Treatments Anti-thyroid Medications (Stop T3 & T4 production)- Methimazole, PTU

Hyperthyroidism "Fight or Flight" (cont)

Supportive- Beta Blockers

Glucocorticoids- inflammation/swelling

RAI- destroys thyroid tissue

Thyroidectomy- total or partial

Potassium Iodine- blocks uptake of iodine

Nursing Interventions Monitor heart, VS, I&O. Improve nutritional status, enhanced coping measures (quiet cool room), regulate temperature, monitor for thyroid storm

Must have tracheostomy tray/oxygen/suction/calcium gluconate after thyroidectomy!

Thyroid Storm

Life-Threatening

Causes: Excessive thyroid hormone release. Often with infection, trauma, DKA, pregnancy, surgery, or deep palpitation

S/S: fever, tachycardia, HTN, abdominal pain, sweating, anxiety, seizures, coma, death

Treatment: Maintain ventilation, temp, safety, seizure precautions, bed in low position, cool room, suction

Hypothyroidism "Rest & Digest"

Causes: Hashimoto's Thyroiditis, glucocorticoids, thyroid cancer, pituitary tumors, decreased ingestion of iodine, treatment of hyperthyroidism

Increased TSH= Decreased T3 & T4

Decreased TSH = Increased T3 & T4

S/S: Slow, fatigue, weakness, constipation, cold intolerance, fertility issues, low HR/RR/T, weight gain, depression

Treatment: Lifelong meds (ex. synthroid) on an empty stomach, don't take w/in 4 hours of GI meds (specifically calcium)

Hypothyroidism Myxedema Coma

Causes: Abrupt stopping of thyroid replacement medication

Post thyroidectomy

S/S: Early signs- depression, diminished cognitive status, lethargy, somnolence

Advancing signs: respiratory depression, coma, narcosis, hyponatremia, hypoglycemia, hypotension, bradycardia, and hypothermia

Treatment: REPLACE THYROID HORMONE

Avoid sedatives and opioids