

Common Thyroid Complications

Melanie Windjack, BSP

Hypothyroidism

Labs: ↑ TSH, ↓ T4, ↓ T3

Treatment:

Levothyroxine (synthetic T4)

- Dose ~ 1.6 ug/kg
- Conversion to T3 regulated by tissues

Initiation at a low dose (25-50 ug) and titration over 4-6 weeks is required for:

- Ischemic heart disease or rhythm disturbances
- Older patients
- Severe, longstanding hypothyroidism

Lab Targets:

TSH 0.5-4.7

-aim for low normal value

-values ≤ 0.1 mU/L may lead to atrial fibrillation or cardiotoxicity

Free T4 (FT4)

-may be slightly above normal to produce “normal” T3 levels

Free T3 (FT3)

-should be in “normal” range

Takes 4-6 weeks for TSH to stabilize after initiating therapy. Follow-up TSH levels and dose changes should NOT occur more frequently than this.

Antacids, iron, and calcium interfere with the absorption of levothyroxine.

Hyperthyroidism

Labs: undetectable TSH, ↑ T4, ↑ T3

Treatment:

Beta Blockers

-symptomatic control only

Thioamides (Propylthiouracil, Methimazole)

-Indicated for Grave's disease or for use prior to radioactive iodine surgery

-Almost 100% effective in achieving euthyroidism (within 6-12 weeks)

Lab Targets:

Normalization of T3 may lag behind T4. Monitor both every 4-6 weeks.

TSH will remain suppressed several months following attainment of euthyroidism.

Safety/ Side Effects:

Rash

Fever, urticaria, joint pains

Agranulocytosis (rare) - usually occurs within first 3 months but can occur anytime. Consider WBC level.