DEPARTMENT OF INTERNAL MEDICINE

SECTION OF ENDOCRINOLOGY

CLINICAL PRACTICE GUIDELINES

HYPOTHYROIDISM/MYXEDEMA COMA

SIGNS AND SYMPTOMS OF HYPOTHYROIDISM

* Cold intolerance, weight gain, dry skin, periorbital puffiness, hair loss
* Voice change, hoarseness, slow speech, poor memory
* Weakness, fatigue, depression, myalgia
* Constipation, menorrhagia, galactorrhea
* Myxedema (non-pitting edema), pallor, goiter, alopecia
* Hyperlipidemia, anemia
* Bradycardia, effusions, delayed relaxation of deep tendon reflexes

SPECIAL POPULATION WITH HIGHER RISK OF DEVELOPING HYPOTHYROIDISM

* Postpartum women
* Individuals with family history of autoimmune thyroid disorders
* Patients with previous head and neck or thyroid irradiation
* Other autoimmune endocrine conditions e.g. type 1 DM, primary adrenal insufficiency, primary ovarian failure
* Other non-endocrine autoimmune disorders e.g. vitiligo, pernicious anemia, Celiac disease, Sjogren’s Syndrome
* Primary pulmonary hypertension
* Down’s and Turner’s Syndrome

HISTORY AND LAB EVALUATION

Confirmation of hypothyroidism and differentiating between primary, subclinical, and secondary hypothyroidism:

* TSH- most sensitive test for detecting hypothyroidism
* Confirm with FT4

Primary hypothyroidism: High TSH and low FT4

Subclinical hypothyroidism: High TSH and normal FT4

Secondary hypothyroidism: Low/normal TSH and low FT4

Other tests:

* Thyroid autoantibodies – antithyroid peroxidase and antithyroglobulin autoantibodies
* Thyroid scan and ultrasound (may do both)

PRIMARY HYPOTHYROIDISM

Etiologies

Autoimmune Thyroiditis (Hashimoto’s Thyroiditis)

* Most common cause
* Diagnosis:

Thyroid antibodies – anti-thyroid peroxidase (anti-TPO) in 95% or antithyroglobulin (TG) detection in 60%

Other causes:

Congenital- Endemic iodine deficiency (Athyreosis), thyroid hormone resistance, TSH-receptor defect

Acquired: Iodine deficiency, Post-thyroidectomy, thyroid irradiation, medications, radioactive iodine therapy

Transient: Subclinical thyroiditis (de Quervain’s), lymphocytic thyroiditis (silent, postpartum and painless thyroiditis), neonatal hypothyroidism

Pharmacotherapy

* Levothyroxine (T4)

Initial dose: 50-100 mcg per orem once daily or 1.7 mcg/kg/day per orem once daily

Administer on empty stomach, 30 minutes to an hour before breakfast.

Administer separately from other medications.

FOLLOW-UP

Follow-up exams

* Every 6-8 weeks initially to monitor patient’s response to the dose of T4 until TSH is normalized
* Then, every 6-12 months

LIFE-THREATENING COMPLICATION - MYXEDEMA COMA

Correct diagnosis is imperative because critical illnesses are similar to myxedema coma and can also present with altered thyroid function.

Signs and Symptoms:

* Severe hypothermia (<27 C)
* Bradycardia
* Respiratory failure and loss of consciousness
* Long-standing hypothyroidism

Precipitating Factors:

* Infection
* CV event
* Exposure to cold

Non-pharmacological therapy:

* Amit to ICU
* Close monitoring and supportive care
* IV fluids, gradual warming
* Monitor CV function and monitor for syndrome of inappropriate secretion of antidiuretic hormone (SIADH)
* Ensure adequate ventilation
* Treat underlying cause

Pharmacotherapy:

* Glucocorticoids
* If central or secondary hypothyroidism cannot be ruled out
* Levothyroxine (T4) IV (or tablet, if IV preparation is not available) and/or Liothyronine (T3) IV

Initial bolus dose: 200-500 mcg IV/ via NGT

Maintenance dose: 100-300 mcg/day IV/via NGT until euthyroid and per orem administration can be tolerated