BEST PRACTICES

MANAGEMENT OF LIFE-THREATENING THYROID STORM

Severe or exaggerated clinical manifestations of thyrotoxicosis

RISK FACTORS

- Thyroid or nonthyroidal surgery.
- Trauma.
- Infection.
- Acute iodine load (including amiodarone use).
- Parturition.
- Irregular use or discontinuation of antithyroid drugs.

CLINICAL FEATURES

- Tachycardia.
- Hyperpyrexia.
- Central nervous system dysfunction (agitation, delirium, psychosis, stupor, or coma).
- Gastrointestinal symptoms (nausea, vomiting, abdominal pain).
- Physical examination may reveal goiter, ophthalmopathy (in the presence of Graves' disease), lid lag, hand tremor, and warm and moist skin.

DIAGNOSIS

- Presence of severe and life-threatening symptoms (hyperpyrexia, cardiovascular dysfunction, altered mentation).
- Biochemical evidence of hyperthyroidism (elevation of free T4 and/or T3 and suppression of TSH).

TREATMENT

- Propranolol (if not contraindicated):60 to 80 mg orally q 4-6 hours to achieve adequate control of heart rate.
- Thionamide: propylthiouracil (PTU; preferred over methimazole); 200 to 250 mg orally q 4 hours.
- Hydrocortisone: 300 mg IV loading dose, then 100 mg IV q 8 hours.
- One hour after a thionamide is given: iodine (SSKI, 5 drops [20 drops/mL, 50 mg iodide/drop] orally q 6 hours; or Lugol's solution, 10 drops [20 drops/mL, 6.25 mg iodine/drop] q 8 hours.
- Cholestyramine: 4 g orally four times daily).

- Thyroidectomy in patients who do tolerate PTU or develope adverse reactions.

PROGRESS

After evidence of clinical improvement (defervescence, resolution of central nervous system and cardiovascular manifestations) :

- Stop iodine therapy (unless a thyroidectomy is planned in the next 10 to 14 days).
- Withdraw beta blockers after thyroid function tests have returned to normal.
- Taper glucocorticoids and discontinue.
- Switch propylthiouracil to methimazole once the T3 is declining and hospital discharge is anticipated.

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