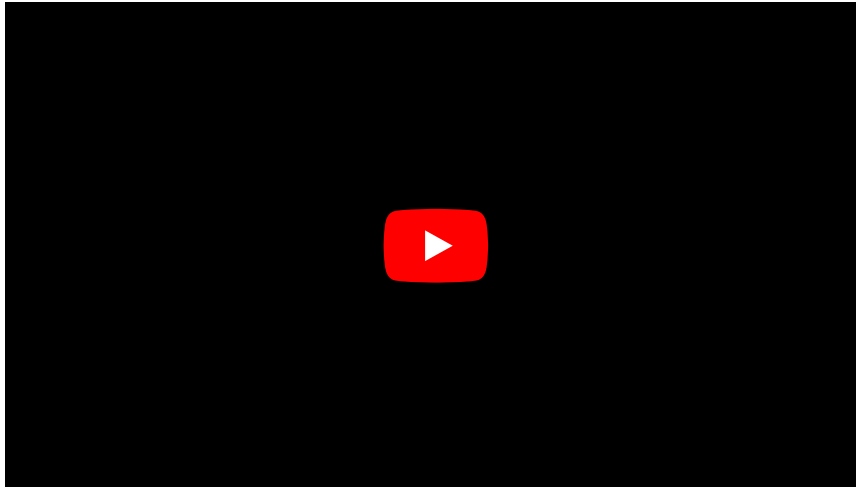


Graves disease

Graves' Disease

Graves disease:



Proptosis and lid retraction

Definition

Grave's disease is an **autoimmune disorder** that leads to over activity of the thyroid gland (hyperthyroidism). Grave's disease is the leading cause of **hyperthyroidism** and affects 4-5 times more often younger women.

Pathophysiology

Grave's disease is a form of **type II hypersensitivity** where the immune system makes antibodies called **thyroid-stimulating immunoglobulin (TSI)** that attach to thyroid cells and mimic the actions of thyroid stimulating hormone and stimulate the thyroid to make too much thyroid hormone. **The TSI stimulation** of TSH receptors in the gland result in hyperplasia or goiter and also increased synthesis of thyroid hormone and especially triiodothyronine (T3). An overabundance of thyroid hormones affect all of the physiologic system such as metabolism, heart function, nervous system, body temperature and more.

Genetics

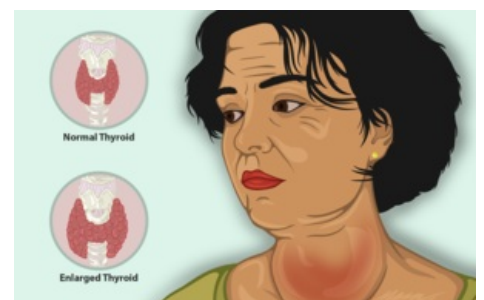
Exact cause of Grave's disease is not known however genetic factors interacting with environmental factors play a role in the pathogenesis of this disease.

Epidemiology

Grave's disease is most common in women under 40 years old. People with a family history of Grave's disease or history of other autoimmune diseases have a higher risk of developing Grave's disease.

Signs and Symptoms

- **goiter** - diffuse, soft, richly vascularized (murmurs may be heard when listening), formation of nodes in elderly patients
- symptoms of **thyrotoxicosis**
 - nervousness, lack of concentration,
 - fever, sweating, heat intolerance, weight loss, increased appetite,
 - increased sympathetic activation - tachycardia, palpitations, dysrhythmia , hypertension,
 - increased GIT motility, diarrhea,
 - hyperreflexia, gentle shaking of hands,
 - proximal myopathy - muscle weakness and atrophy, especially of the girdle muscles,
 - osteoporosis
- endocrine orbitopathy
 - swelling of the soft tissues behind the bulb causes exophthalmos,
 - activation of sympathetic tone increases m. levator palpebrae sup., severe downward movement of the



Goiter

- ids (Von Graefe's sign),
 - lagophthalmos (failure to close the eyelids) causes the cornea to dry out and erode,
 - eye muscle involvement - diplopia,
 - compression of the optic nerve can cause blindness.
- pretibial myxedema - a rare symptom, it is subcutaneous edema with subsequent fibrotization and impaired lymphatic outflow.
- acropachia - swollen swelling of the last parts of the fingers and toes, swelling of the nail beds

Diagnostics

- Increased serum values of fT3, fT4, **decreased TSH level** (standard 0.3–4.2 mIU / l),
- the presence of **antibodies** against TSH-receptors,
- shortening the reflex of the Achilles tendon,
- thyroid **ultrasound** (reduced echogenicity) and retroorbital space,
- radioactive iodine uptake test, TSI test.

Differential diagnostics

- other causes of hyperthyroidism (e.g. toxic adenoma)
- other causes of bulb protrusion (especially in unilateral to exclude tumor)

Treatment

Treatment is aimed at controlling the overactive thyroid. *thyrostatics **thiamazole**, **propylthiouracil** block thyroid peroxidase (serious side effect is *agranulocytosis*, occurring in less than 1 ‰ treated)

- Beta-blockers** to alleviate hyperkinetic circulation
- thyroidectomy** for thyrostatic intolerance, mechanical oppression and in women planning pregnancy, complications of surgery: removal of the parathyroid glands (hypoparathyroidism), recurrence of the laryngeal nerve
- radioiodine** (¹³¹I) if surgery is contraindicated
- orbitopathy usually resolves when the goiter is reduced by thyrostatic treatment, but if eye problems worsen, we give **corticoids**

Links

Related Articles

- Thyrotoxic crisis
- Thyrotoxicosis
- Thyreopathies during pregnancy and in newborns
- Von Graefe's sign

External links

[PubMed][1] (<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001398/>)
 [American Thyroid Association][2] (<http://www.thyroid.org/what-is-graves-disease/>) [National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) [3] (<http://www.endocrine.niddk.nih.gov/pubs/graves/index.aspx>) [Graves' Disease and Thyroid Foundation][4] (<http://www.gdatf.org/about/about-graves-disease/>)

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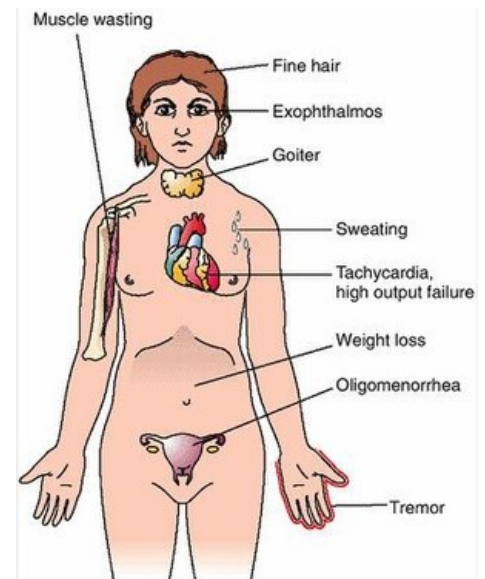
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Symptoms



Myxedema

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