Understanding Graves' Disease

Graves' disease is a common autoimmune condition in which the body overproduces thyroid hormones (hyperthyroidism). It is the most common cause of hyperthyroidism, often impacting women younger than age 40. [1,2]

TSHR

- Thyroid-stimulating hormone receptor (TSHR) plays an important role in maintaining proper thyroid function[3]
- In Graves' disease, harmful IgG autoantibodies bind to and activate TSHR, stimulating excess thyroid hormone production[1,2]
- These autoantibodies may also target the connective tissue cells surrounding the eyes and skin on the shin[1,2]

Clinical features of Graves' disease can affect multiple body systems.[1,2] Symptoms can be wide-ranging and may include:

Signs of hyperthyroidism[1,4]

- Rapid heartbeat / palpitations
- Unexplained weight loss
- Increased appetite / frequent bowel movements
- Shortness of breath
- Muscle weakness / fatigue
- Irritability / anxiety
- Heat intolerance
- Change in menstrual cycle / reduced libido
- Goiter (enlarged thyroid)
- Decreased attention span

Eye and skin complications[1,2]

Graves' is associated with risk of eye inflammation and swollen, bulging eyes, known as thyroid eye disease

Less commonly, people with Graves' may develop Graves' dermopathy; a lumpy, reddish thickening of the skin on the shins

IgG = Immunoglobulin G, a type of antibody

Current Treatment Options

Existing treatments are aimed at reducing thyroid hormone levels to lessen the severity of symptoms.[5] There are three current approaches, which have remained largely unchanged for the past 70 years.[6]

Anti-thyroid drugs (ATDs)[5]

+ Block thyroid hormone production
+ Recommended before radioactive iodine or surgical thyroidectomy

Radioactive iodine[5]

+ Destruction of the thyroid gland with radiation
+ Requires lifelong medication for hypothyroidism*

Surgical thyroidectomy[5]

+ Removal of the thyroid gland
+ Requires lifelong medication for hypothyroidism*

*Hypothyroidism means that the thyroid gland can't make enough thyroid hormone to keep the body running normally

Challenges in Disease Management

Uncontrolled Graves' disease can lead to serious health complications.[1,2,5] While current treatments are effective for some patients, they do not address the underlying autoimmune process that causes Graves' disease,[5] and carry various other challenges:

Anti-thyroid drugs (ATDs)

+ Prolonged time to stable treatment effect for many
+ High relapse rate
+ Safety and tolerability concerns

Second-line therapeutic options (radioactive iodine or thyroidectomy)

+ Requires lifelong thyroid replacement hormone
+ Safety concerns
+ Invasive with a risk of procedure-related complications

A New Approach to Treatment

At Immunovant, we believe FcRn-targeted therapies may help reframe care for people with Graves' disease.

Graves' is caused by harmful IgG autoantibodies that target thyroid stimulating hormone receptors (TSHR)[1,2]

Blocking FcRn may reduce harmful TSHR IgG autoantibodies and may improve symptoms for people with Graves' disease

Learn more about our goal to reframe expectations in autoimmune disease at Immunovant.com

References: 1. Antonelli A., Fallahi P., Elia G., et al. Graves' disease: Clinical Manifestations, immune pathogenesis and therapy. Best Prac Res Clin Endocrinol Metabol. 2020; 34:101388. **2.** Davies TF., Andersen S., Latif R., et al. Graves' disease. Nat Rev Primers. 2020; 6:52. **3.** National Institute of Health. Medline Plus. TSHR gene. Available at: https://medlineplus.gov/genetics/gene/tshr/. Accessed July 22, 2024. 4. Chaker L., Cooper DS., Walsh JP., et al. Hyperthyroidism. Lancet. 2024; 403:768-780. **5.** Kahaly, G., Bartalena, L. et al. 2018 European Thyroid Association Guideline for the Management of Graves' Hyperthyroidism. European Thyroid Journal. 2018; 7:167-186. **6.** Smith TJ. and Laszlo H. Graves' Disease. New Engl J Med. 2016; 375(16):1552-1565.

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