



## GRAVES' DISEASE

### WHAT IS THE STUDY ABOUT?

Graves' disease is the most common form of hyperthyroidism in the United States. A mild anemia, with low hemoglobin levels, can sometimes develop in patients with Graves' disease. A major symptom of anemia is fatigue, so this may play a role in the tiredness that some patients have when the Graves' disease is active. The cause of this anemia is uncertain. The aim of this study was to determine how common it occurs and what might be the cause of anemia associated with Graves' disease.

**THE FULL ARTICLE TITLE:** Gianoukakis AG, Leigh MJ, Richards P, Christenson PD, Hakimian A, Fu P, Niihara Y, Smith TJ. Characterization of the anaemia associated with Graves' disease. *Clin Endocrinol (Oxf)* 2009;70:781-7.

### WHAT WAS THE AIM OF THE STUDY?

The aim of this study was to determine how common anemia is in Graves' disease and what might be the cause.

### WHO WAS STUDIED?

The study group was made up of patients treated in the Endocrine Clinic at Harbor-UCLA Medical Center. A total of 87 patients with newly diagnosed Graves' disease participated in the study. Ten women and 9 men without hyperthyroidism or any known autoimmune disease were randomly recruited from the primary care clinic to serve as controls.

### HOW WAS THE STUDY DONE?

The patient's records were reviewed and values of thyroid hormones and hemoglobin were obtained. Patients who had been treated with antithyroid meds or corticosteroids were excluded from the study.

### WHAT WERE THE RESULTS OF THE STUDY?

On initial presentation, 1/3 of the patients with Graves' disease had anemia with low hemoglobin levels. Of those with anemia, a cause was found for 1/3 of them, so a total of 22% had anemia that was solely due to the Graves' disease. Over 40% of men with Graves' disease had anemia as compared to ~18% of women. Hemoglobin levels increased and the anemia resolved in almost 90% of patients treated with antithyroid drugs.

### HOW DOES THIS COMPARE WITH OTHER STUDIES?

A prior study showed that 18% of women and 28% of men with hyperthyroidism had anemia. Some of these people also had iron deficiency. The anemia improved after treating the hyperthyroidism. Others have also suggested that hyperthyroidism routinely decreases hemoglobin levels.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Anemia in Graves' disease is common and may play a role in the tiredness that some patients have when the Graves' disease is active. The anemia resolves with treatment of the Graves' disease.

— Alan P. Farwell, MD

### ATA THYROID BROCHURE LINKS

Graves disease: [http://thyroid.org/patients/patient\\_brochures/graves.html](http://thyroid.org/patients/patient_brochures/graves.html)

Hyperthyroidism: [http://thyroid.org/patients/patient\\_brochures/hyperthyroidism.html](http://thyroid.org/patients/patient_brochures/hyperthyroidism.html)

### ABBREVIATIONS & DEFINITIONS

**Hyperthyroidism:** a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

**Graves' disease:** the most common cause of hyperthyroidism in the United States.

**Anemia:** low blood count, specifically low levels of red blood cells which carry oxygen around to all of the cells in the body. Fatigue is a common symptom of anemia.

**Hemoglobin:** the protein in red blood cells that binds oxygen to carry around to all the cells in the body. Hemoglobin levels are low with anemia.