

High Thyroid Stimulating Receptor Antibody Titre and Large Goitre Size at First-Time Radioactive Iodine Treatment are Associated with Treatment Failure in Graves' Disease

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Abstract

Introduction: Our study aimed to identify the factors associated with successful first-time radioactive iodine (RAI) treatment in patients with Graves' disease (GD). **Materials and Methods:** This is a retrospective study of patients with GD who were treated with RAI. Treatment success was defined as onset of permanent hypothyroidism or euthyroidism after 1 dose of RAI at 1-year follow-up. **Results:** There were 388 GD patients who underwent RAI treatment between January 2014 and December 2015. Of these, 74% achieved treatment success. Median time to achieve permanent hypothyroidism was 2 months. Male gender, smoking, higher antithyroid drug dosage, lower thyroid stimulating hormone (TSH) level, large goitre size and TSH receptor antibody (TRAb) titre at time of RAI were significantly associated with treatment failure. Multivariate analysis showed that larger goitre size and higher TRAb titre were associated with lower first-time RAI success. **Conclusion:** Larger goitre size and higher TRAb titre predict lower success of RAI therapy in GD patients. Treatment decisions and strategies should be customised for patients who present with these characteristics.

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