# Assessing efficacy of radioactive Iodine treatment for differentiated thyroid cancer

**Descriptor:**

The purpose of the audit is to evaluate the efficacy of post-surgical thyroid ablation for differentiated thyroid cancer (DTC) following first ablative dose.

**Background:**

In patients with local disease, post-thyroidectomy radioactive iodine treatment (RAIT) is routinely offered to patients with DTC >1cm in size on histological examination and has been shown to reduce the risk of local and distant recurrence and death from thyroid cancer [1-3].

In accordance with British Thyroid Association guidelines, a post-treatment whole body scan (WBS) is performed followed by a diagnostic Iodine-123 scan four to six months post therapy to assess effectiveness of treatment. If no residual uptake is seen in the thyroid bed then patients receive long term follow-up. However, if persistent uptake is demonstrated, a second treatment is offered.

In a proportion of patients, multiple treatments are needed to achieve complete ablation. With increased exposure to radioactive iodine come several disadvantages such as increased risk of second cancer, increased cost with longer hospital stays and more prolonged symptoms of hypothyroidism with thyroid hormone withdrawal prior to and during each treatment and scans [4].

It has been reported that the amount of remnant thyroid tissue correlates with uptake on post-treatment WBS [5]. Recent preliminary results from two randomised controlled trials looking at radioiodine dose showed high efficacy rates of up to 95% from the first ablative dose in low risk DTC [6,7]. This audit assesses the efficacy of post-surgical thyroid ablation.

## The Cycle

**The standard:**

In the post-operative treatment of DTC, successful ablation of remnant thyroid tissue should be achieved in the majority of patients following a single treatment of radioactive Iodine-131.

**Target:**

87% [8]

## Assess local practice

**Indicators:**

The proportion of patients with DTC where the first ablative dose had been successful in ablating remnant tissue.

**Data items to be collected:**

• Histology

• Percentage uptake on post-treatment WBS

• Number of RAIT

**Suggested number:**

50 consecutive patients.

**Suggestions for change if target not met:**

• Identify reasons for target not being met. Unsuccessful ablation following a single dose may be due to a high amount of remnant tissue post-thyroidectomy. The amount of remnant tissue may be reduced with a more complete surgery. This can be explored further by stratification of data by surgeon or DGH versus tertiary referral centre. Potential solutions include audit of surgical performance and centralisation to allow for specialist surgeons to perform the procedure

• Another reason might be due to a high proportion of patients having high-risk/radio-resistant tumour – hurtle cells, R1 margin, node positive. Standard may need to be adjusted at a departmental level depending on the prevalence of such tumour types in the local patient population

• Re-audit in 12 months

**Resources:**

Access to patients notes with treatment records, imaging and histology.

**References:**

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**Editor's comments:**

This audit will provide an assessment of the efficacy of radioactive iodine treatment in a centre.

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