



Treatment of Hyperthyroid cats with Radioiodine

Notes for Referring Veterinary Surgeons

What does Treatment Involve?

Radioiodine treatment involves a single subcutaneous injection of I^{131} which is usually given under sedation for health and safety reasons. Following injection, the AHT isolates cats for a 3 week period until their radioactivity has declined to the point that it is safe for them to be discharged back to their owners and their litter disposed of by conventional means.

Treatment Success Rates

Radioiodine treatment successfully resolves hyperthyroidism in about 95% of cases. Of the remaining 5% most will respond to a second treatment although approximately 2% of hyperthyroid cats have a thyroid carcinoma that will not respond to conventional radioiodine treatment. If such a case is identified then higher doses of radioiodine are required and we would recommend referral to Langford Veterinary Services, Bristol, the only establishment in the UK that treats such cases.

A small proportion of cats that receive radioiodine treatment are hypothyroid after

treatment. Most of these cats total T4 (tT4) returns to normal within a few months without a need for any specific treatment. However, if the cat is azotaemic and the tT4 remains low, this may accelerate chronic kidney disease (CKD). Therefore, in hypothyroid azotaemic patients we recommend that they receive oral levothyroxine to reduce progression of CKD. There is currently no data available on how often this happens or on the efficacy of this recommendation but owners should be aware there is a slim chance of us recommending oral medication after radioiodine treatment.

Treatment Costs

A standard radioiodine treatment, isolation and blood work at discharge costs around £1500+VAT. This figure can vary depending on any additional requirements for a given patient. Once a cat is booked for treatment an element of this cost is non-refundable as the drug needs to be ordered specifically for each patient.

Requirements Prior to Treatment

Radioiodine treatment is a costly procedure that involves isolation of cats which are frequently geriatric and underweight. Additionally it is known that some cats treated with radioiodine become permanently hypothyroid. Reductions in tT4 to normal or low levels can unmask pre-existing CKD and hypothyroidism may accelerate its progression.

Although significant complications with treatment are rare with the above in mind we have several requirements before we will treat a cat with radioiodine:

- The cat must have had an elevated tT4, measured by a reference laboratory. Occasionally we will treat cats with a tT4 in the upper end of the reference range, a high fT4 and compatible clinical signs but these cases should be discussed with a member of the internal medicine team first.
- If at all possible we require an assessment of the cat at a time that it has been on medical management for 1 month and has a normal (preferably low-normal) tT4. Medical management can be using oral methimazole/carbimazole, transdermal methimazole or dietary modification (e.g. Hill's y/d).

At this assessment we would like to know the tT4, urea, creatinine, urine specific gravity and urine protein:creatinine ratio. These parameters are requested as they are likely to predict the cat's renal function following I¹³¹ treatment.

- There must be a reasonable expectation that our staff can care for the cat whilst hospitalised without risk of injury. This means that cats which are aggressive when handled or require frequent medication that is challenging to administer cannot be accepted. Cats can be sedated for sampling and radioiodine treatment so if these are the only anticipated problems then we can accept these patients.
- We recommend that any cat with hyperthyroidism has a urine culture and blood pressure measurement as hypertension and UTIs are common co-morbidities with this condition that warrant direct treatment if found.
- We advise that thoracic radiographs, abdominal ultrasound should be considered prior to treatment to look for evidence of heart failure or other co-morbidities that may influence an owner's decision to treat or our opinion of the cat's suitability for isolation. Additional tests (e.g. echocardiogram) should be performed as indicated.

Ideally we would like to see cats and their owners at the AHT prior to radioiodine treatment so that we can perform the above assessments and discuss treatment and expectations with owners. We would ask that such cases are referred after they have been started on medical management and their tT4 is normal so that we can assess renal function and perform imaging at that time. The cost of a consultation, haematology, biochemistry, tT4, urinalysis (including UPCr and culture), thoracic radiographs, abdominal ultrasound and blood pressure measurement is typically around £800+VAT.

We understand that it is not always possible for cats to come to the AHT prior to treatment due to travel or financial concerns. We are happy to work with your clinic to ensure the cat is a suitable candidate for radioiodine treatment if this is the case.

How to Arrange Radioiodine Assessment/Treatment

If you have a case that you would like to discuss or refer, please send its history and lab work to the internal medicine team at internalmedicine@aht.org.uk or fax: 01638 555600. Once we have reviewed the information we will contact you and the client to discuss case suitability or arrange an appointment.