

Radioiodine therapy - Information for referring vets

June 2024

- Radioiodine (^{131}I) therapy is regarded as the gold-standard treatment for feline hyperthyroidism¹.
- There are a few things that need to be done before a cat can be treated with radioiodine:
 - * Any thyroid medication must be stopped at least a week before treatment. Y/D food should be stopped at least two weeks before treatment.
 - * Any medical treatment that can be provided to a cat while it is in the radioiodine unit is limited, so we need to be sure that the cat has no health issues likely to cause a serious problem in that time. Therefore, a full blood profile, urinalysis and, if possible, a blood-pressure check should be run within a few weeks before radioiodine treatment. If the cat has a murmur, 2D echocardiography should be carried out to check that the cat is not on the verge of congestive heart failure. The referring vet can run these tests (or we can do so if that is not possible), saving the owners from having to make a trip to us prior to having radioiodine therapy.
- Cats receive one subcutaneous injection of 0.2-3.0 ml of ^{131}I in the scruff. They must then stay in our unit for 2-10 days post-injection (depending on the dose of ^{131}I injected, and the rate at which the cat excretes radiation – which rate varies greatly from cat to cat) while they excrete most of the injected ^{131}I in their faeces and urine. We determine when cats go home by measuring their radioactivity level with a Geiger counter. Obviously, cats injected with a lower dose leave the unit earlier on average, but the precise day any one treated cat will leave the unit is unpredictable.
- Management requirements, which must be met at home for one week after the 2-10 day stay, are:
 - * The cat will be kept indoors for **one week** during which time it must use a litter tray. During that week there will be no direct contact between the cat and children under 12 years old, pregnant women, or breast-feeding women. Also, during that week, the cat will not sleep with anybody on their bed overnight, and owners will limit the time they spend cuddling the cat. They can stroke the cat at arm's length as much as they like.
 - * For **two weeks**, soiled litter – both urine and faeces – must not be put in the council rubbish bin. All soiled litter must be either flushed down the toilet, or collected over that two weeks, then stored for four more weeks before disposal in the regular rubbish collections. In the second week, if the cat urinates or defaecates outside, that requires no action.

The instruction leaflet for owners on our website's 'Radiotherapy for hyperthyroid cats' page provides more detail about these requirements. If owners cannot meet these post-discharge requirements, the cat can stay with us in our boarding cattery for an additional one or two weeks, at which time it can go home with no restrictions.

¹Carney, H.C., Ward, C.R., Bailey, S.J., Bruyette, D., Dennis, S., Ferguson, D., Hinc, A. & Rucinsky, A.R. (2016) 2016 AAFP guidelines for the management of feline hyperthyroidism. *Journal of Feline Medicine and Surgery* **18(5)**:400-416.

Most hyperthyroid cats do not require medical ‘stabilisation’ prior to radioiodine therapy:

- Historically, it has been recommended that all cats be medically stabilised prior to radiation therapy. However, that is not needed in many cases – many of the cats we treat are not stabilised beforehand, and even for those that are, we require medical treatment to be stopped a week before radioiodine treatment in any case.
- Cats that have a typical history and typical clinical-examination findings of hyperthyroidism, appear otherwise healthy, and that have an unremarkable blood profile for a hyperthyroid cat, particularly if they are in the younger age range for hyperthyroidism, and particularly if the TT4 is not extremely high, generally do not require stabilisation.
- Reasons for prior medical stabilisation include:
 - * If the cat has an elevated TT4, but the clinical signs are not typical of hyperthyroidism. In this situation, short-term medical therapy can help determine whether the cat has ‘atypical hyperthyroidism’ or whether there may be a concurrent disease contributing to the signs.
 - * If there are concurrent morbidities, in particular clear indications of chronic renal failure. In this case, short-term medical therapy to bring the TT4 into the normal range will give an indication of how the cat will be after radioiodine therapy. Most cats that have normal renal parameters when hyperthyroid will have normal renal parameters (urea and creatinine will increase within the normal range), or only mild renal failure, after radioiodine therapy, and will benefit from having their hyperthyroidism cured.
 - * If the TT4 is extremely high and/or the cat has been hyperthyroid for a long time and/or the cat has an exceptionally large goitre, or no palpable goitre (which can be because a large goitre has ‘sunk’ into the thoracic inlet). These are risk factors for thyroid carcinoma – although most such cats are ‘just’ hyperthyroid, and do not have thyroid carcinoma.
 - * If there is going to be a long wait before radioiodine therapy – so that the cat is not hyperthyroid for a long period prior to treatment.

Certain circumstances make some cats unsuitable for radioiodine therapy:

- Cats that have other illnesses in addition to being hyperthyroid that require daily or more frequent essential medication, for example, diabetes, congestive heart failure or severe hypertension.
- Advanced renal failure. Cats with IRIS stage 1 or 2 renal failure can typically be treated.
- Cats that will not eat at the vets, or are very aggressive. In general, we are happy to treat fractious hyperthyroid cats that are healthy enough to be sedated.

To discuss treatment options for specific cases, or to refer a cat for radioiodine therapy:

Please contact us on **01608 642547** or at riu@chippingnortonvets.co.uk.

- If you send us the patient’s clinical notes, relevant blood test results and the owner’s contact details, we can contact the owner and talk them through the process. If they wish to proceed, we can book them in and let you know when that will be, and if any pre-treatment tests are required.