

Radioiodine therapy - Information for referring vets

December 2021

- 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 the cat is on 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 during the time it is in the radioiodine unit is limited, so we need to be sure that the cat has no health problems 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 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 the radioiodine therapy.
- Cats receive one subcutaneous injection of 0.5-3.0 ml of ^{131}I in the scruff. They must then stay in our unit for 3-10 days post-injection (depending on the dose of ^{131}I injected, and the rate at which the cat excretes radiation) while they excrete most of the injected ^{131}I in their faeces and urine. This is a relatively short stay – most other units keep cats in for longer. Obviously, cats injected with a lower dose will 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 3-10 day stay, are:
 - * The cat will be kept indoors and use a litter tray, and all soiled litter will be either flushed down the toilet or stored for four weeks before disposal in the regular rubbish collections.
 - * 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 arms length as much as they like.
 - * There will be no direct contact between the cat and children under 12 years old, pregnant women, or breast-feeding women.
 - * In addition, any soiled litter over the second week (during which the cat can go outside) must also be either flushed down the toilet or stored with the soiled litter from the first week.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.
- 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, 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 / fractious.

Banbury Road, Chipping Norton, Oxon, OX7 5SY.
Email: info@chippingnortonvets.co.uk

Tel: 01608 642547 Fax: 01608 645617
Website: www.chippingnortonvets.co.uk

Most hyperthyroid cats do not require medical ‘stabilisation’ of TT4 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 – a large proportion of the cats we treat are not stabilised beforehand, and even for those that are, we stop medical treatment a week before radioiodine treatment in any case.
- Cats that have a typical history and 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 after radioiodine therapy (urea and creatinine will increase within the normal range), or only mild renal failure, 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.
- 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, with a note that this is for radioiodine therapy, 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.

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.

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