



On the Subject of Treatment of Disseminated Autonomies of the Thyroid Gland



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Abstract

Disseminated autonomies represent a problem within the therapy of thyroid dysfunctions. They no longer submit to TSH control. They are difficult to operate on but require definitive treatment as they can lead to manifest hyperthyroidism. Fractionated low-dose radioiodine treatment is presented as a solution in this case. Because the effective dose is readily adjustable, late hypothyroidism can be avoided.

Introduction

Especially under the condition of iodine and selenium deficiency, autonomous portions of the thyroid gland develop, which may appear nodular as autonomous adenomas and/or disseminated throughout the organ. For autonomous adenomas, the options are

- a) Surgery, and
- b) High-dose radioiodine therapy with ¹³¹Iodine [1].

It is more difficult to successfully treat the disseminated autonomous cells. They can be functionally located in the area of potential or even manifest hyperthyroidism. If in such a case there is an increased supply of iodine (e.g. by X-ray contrast media), the autonomies can exacerbate to the point of thyrotoxicosis. To prevent this, early treatment is useful.

A Therapy Proposal

We have had good experience with fractionated low-dose radioiodine treatment for this purpose. Here, 37MBq (=1mCi) of liquid ¹³¹Iodine is applied orally once a week. A hospital admission of the patient is usually not required for this purpose. The question arises how to protect the non-autonomous cells, which should not be damaged. An autonomous adenoma usually suppresses the iodine uptake capacity of the normal cells, so that they are not loaded. In the case of disseminated autonomy, they often still take up iodine.

What is to be Done?

The solution is to suppress the non-autonomous cells before radioiodine therapy so that the baseline TSH drops to zero.

Specifically, this can be done by applying 3mg of L-thyroxine orally one week before the start of the fractionated radioiodine treatment.

This will definitely suppress the TSH and the normal cells will no longer take up iodine. The ¹³¹Iodine only affects the autonomous cells, which are damaged or destroyed in this way. Depending on the extent of the autonomous cells in the thyroid, the necessary therapy dose is three to a maximum of eight applications.

Progress can be monitored at any time by performing a scintigraphy of the thyroid gland using the ¹³¹Iodine in the thyroid gland. 3 to 4 weeks after the last treatment, the TSH starts to normalize. The best way to check is with a TRH test and analysis of the control loop [2]. If normalization is not found, another two or three applications of radioiodine can be made. The final success can be checked by testing the thyroidal uptake of ^{99m}-pertechnetate under renewed suppression conditions. It should be negative.

Conclusion

The presented therapy of disseminated autonomies of the thyroid gland has been proven in practice. The autonomous cells can be safely damaged and eliminated without the normal cells suffering. Side effects never occurred.

References

1. https://en.wikipedia.org/wiki/Iodine-131#Medical_use
2. Manfred Doepp (2021) A New Approach to the In Vitro Diagnosis of Thyroid Function: Investigation of the Feedback Mechanism. J Biom Biostat 12: 6.



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