

RADIOIODINE TREATMENT OF HYPERTHYROIDISM IN THE ELDERLY

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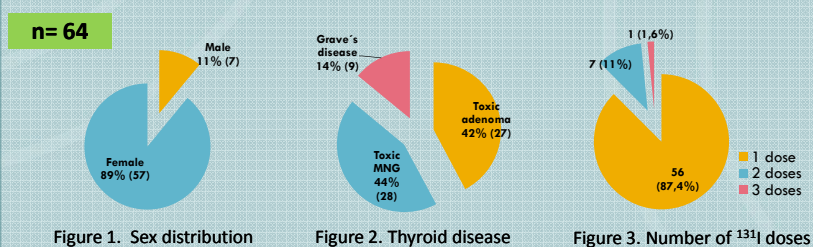
BACKGROUND AND AIMS

- Treatment of hyperthyroidism in older adults is crucial to reduce its morbidity and mortality.
- Radioactive iodine has been widely used in this age group due to its efficacy, safety and cost-effectiveness.
- The aim of this study was to determine the efficacy of ¹³¹I for treatment of hyperthyroidism in the elderly.

METHODS

- Retrospective study of 86 hyperthyroid patients aged ≥ 65 years who performed radioiodine therapy for benign thyroid disease.
- We excluded 22 patients who did not have a minimal follow-up of 1 year.
- We evaluated the following parameters: gender, age, thyroid disease, clinical and laboratory situation at 1, 3 and 5 years after treatment.
- Dose of ¹³¹Iodine = [specific activity (μCi/g) × glandular volume (g)] / % ¹³¹I fixation at 24 h

RESULTS



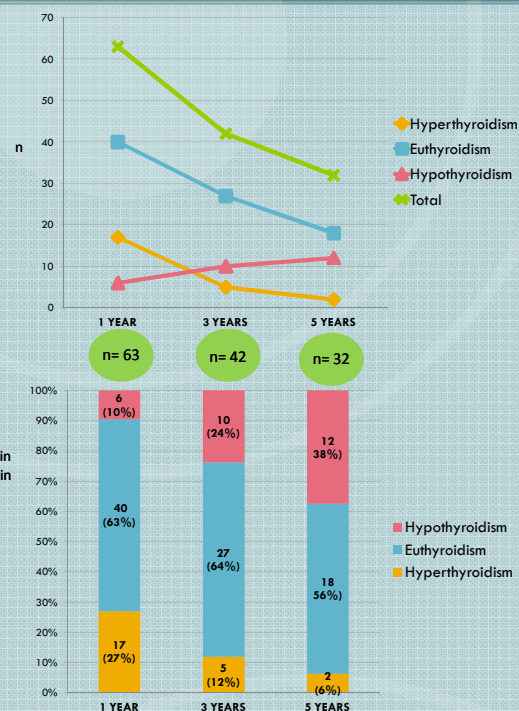
- ✓ Mean age (±SD) at the time of radioiodine treatment was 74.4±6.4 years (range 65-89 years).
- ✓ One patient underwent surgery.
- ✓ There were no significant complications due to radioiodine therapy.

Table 1. Comparison between calculated and administered ¹³¹I doses. Paired samples Student's t-test.

Follow-up	Situation	Calculated Activity MBq (Mean±SD)	Administered Activity MBq (Mean±SD)	p
1 YEAR	Euthyroidism	463±408	427±212	0,336
	Hypothyroidism	357±121	372±96	0,431
	Hyperthyroidism	391±188	373±146	0,312
3 YEARS	Euthyroidism	536±468	460±221	0,179
	Hypothyroidism	333±149	334±148	0,746
	Hyperthyroidism	435±232	387±160	0,362
5 YEARS	Euthyroidism	574±435	479±247	0,236
	Hypothyroidism	313±144	317±141	0,306
	Hyperthyroidism	568±297	449±133	0,491

Table 2. Comparison between the doses of iodine administered in situations in which hyperthyroidism has been solved and situations in which it has not. Independent samples Student's t-test.

Follow-up	Hyperthyroidism Adm Act MBq (Mean±SD)	Hypo or Euthyroidism Adm Act MBq (Mean±SD)	p
1 YEAR	373±146	421±202	0,092
3 YEARS	387±160	429±211	0,614
5 YEARS	449±133	418±225	0,798



DISCUSSION

- The majority of patients (87.6%) needed only one dose of radioiodine.
- During the follow-up there was:
 - Increase of hypothyroid patients: 10%, 24% and 38% at 1, 3 and 5 years after radioiodine therapy, respectively;
 - Reduction of hyperthyroid patients: 27%, 12% and 6% at 1, 3 and 5 years after radioiodine therapy, respectively;
 - Maintenance of euthyroid patients: 63%, 45% and 56% at 1, 3 and 5 years after radioiodine therapy, respectively.
- There were no statistically significant differences between administered doses of ¹³¹I in cases of resolved hyperthyroidism versus the others.

CONCLUSIONS

- Radioiodine therapy proved to be effective and safe to control hyperthyroidism in this age group.
- The cell necrosis induced by radioiodine occurs gradually hence its effect may not be achieved immediately.