THE EFFICACY OF RADIOIODINE THERAPY IN PATIENTS WITH HYPERFUNCTIONING THYROID NODULES

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INTRODUCTION: Radioiodine **(RAI)** is used as a definitive therapy of hyperthyroidism due to **toxic adenoma (TA)** as well as **toxic multinodular goiter (TMG)**.

Achievement of **euthyroidism** or **hypothyroidism** is defined as a successful therapy.

METHODS: The study was conducted in **666 patients** – **484 with TA** and **182 with TMG** (85.58% of women), aged 56.19±13.88 years. We analyzed retrospectively hormonal and imaging findings (scintigraphy, ultrasonography), including isotopic results in subjects treated at Department of Nuclear Medicine and at Endocrinology Department during the eight-year period. The **efficacy of RAI therapy** has been assessed based on free thyroid hormones levels, measured 12 months after radioiodine administration.

RESULTS:

Mean concentrations of **FT4** and **FT3** and **age** did not differ significantly both groups. Patients with **TA** had **lower** thyroid mass and RAI 24-h uptake than subjects with **TMG** (p=0.0000). Administered therapeutic activities of RAI (MBq), calculated using Marinelli's formula, were **smaller** in subjects with **TA** (537.03±181.39 vs 614.13±147.22; p=0.0000) and the thyroid-absorbed doses of RAI (Gy) in such patients were **greater** (p=0.0000).

FIG. 1 The results of RAI therapy (%)

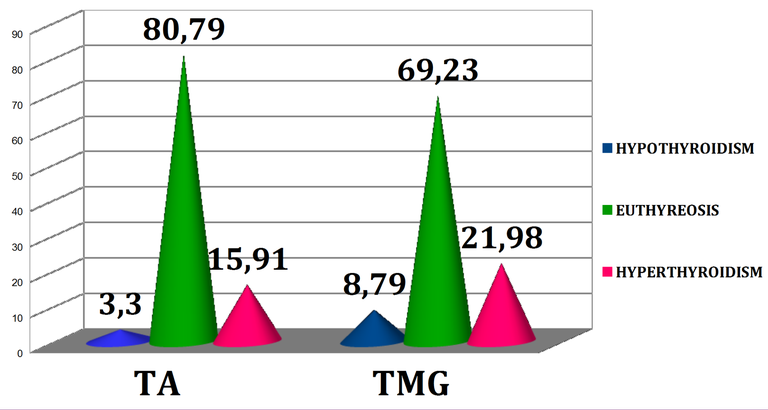
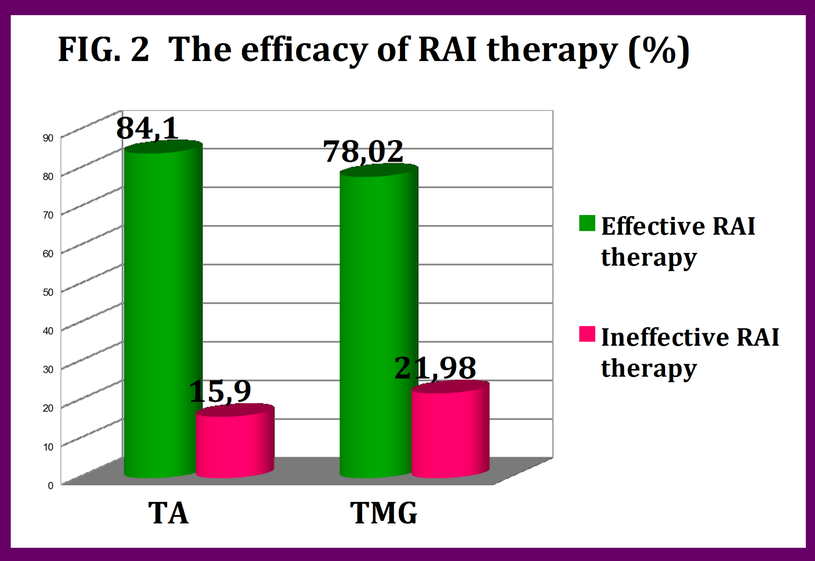


FIG. 2 The efficacy of RAI therapy (%)

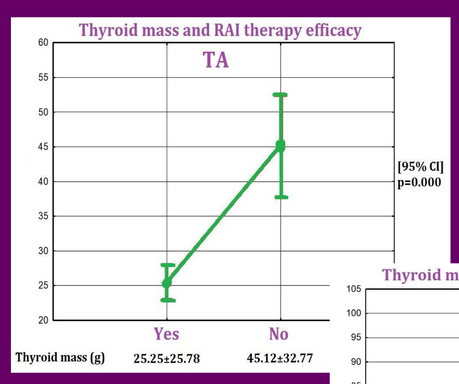


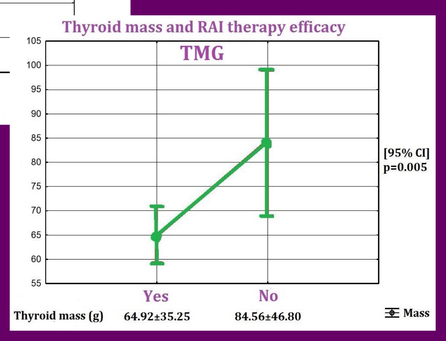
EFFECTIVE RAI therapy

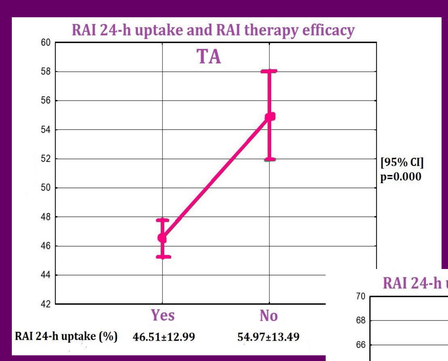
TA: - 84.99% of females
- 78.87% of males

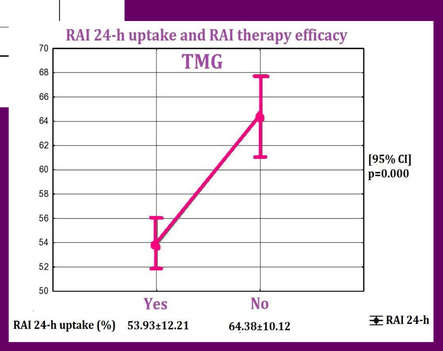
TMG: - 75.80% of females
- 92.00% of males

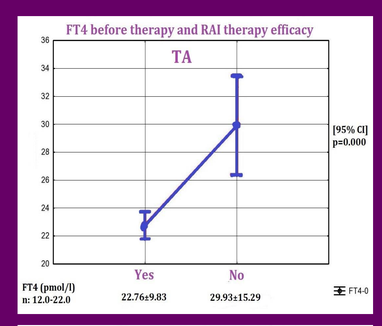
The **cure of hyperthyroidism** was significantly correlated in both groups with **lower**: **thyroid mass**, **RAI 24-h uptake** and concentrations of **FT4** and **FT3** before therapy

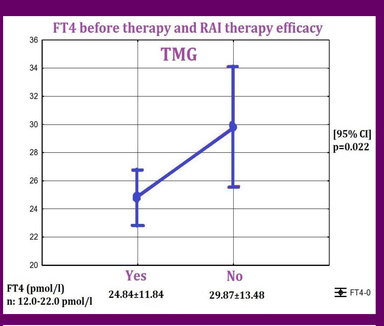


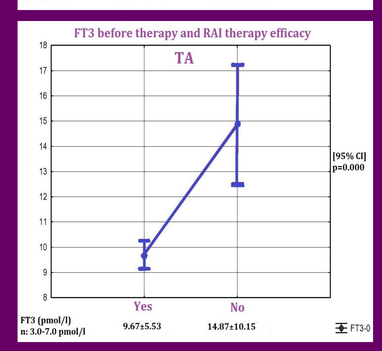


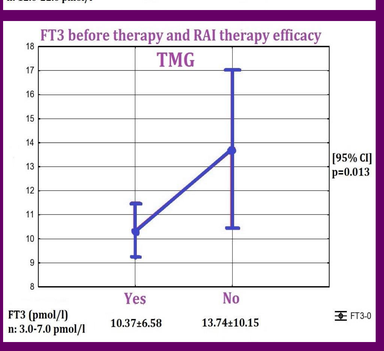












No significant **associations** between successful therapy and: **- patients' age /- thyroid absorbed dose / - used therapeutic activity** of RAI were found.

CONCLUSIONS: RAI therapy was more effective in TA patients. Males responded better to treatment than females in case of TMG. The cure correlated with thyroid mass, RAI 24-h uptake and free thyroid hormones levels before therapy.

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