

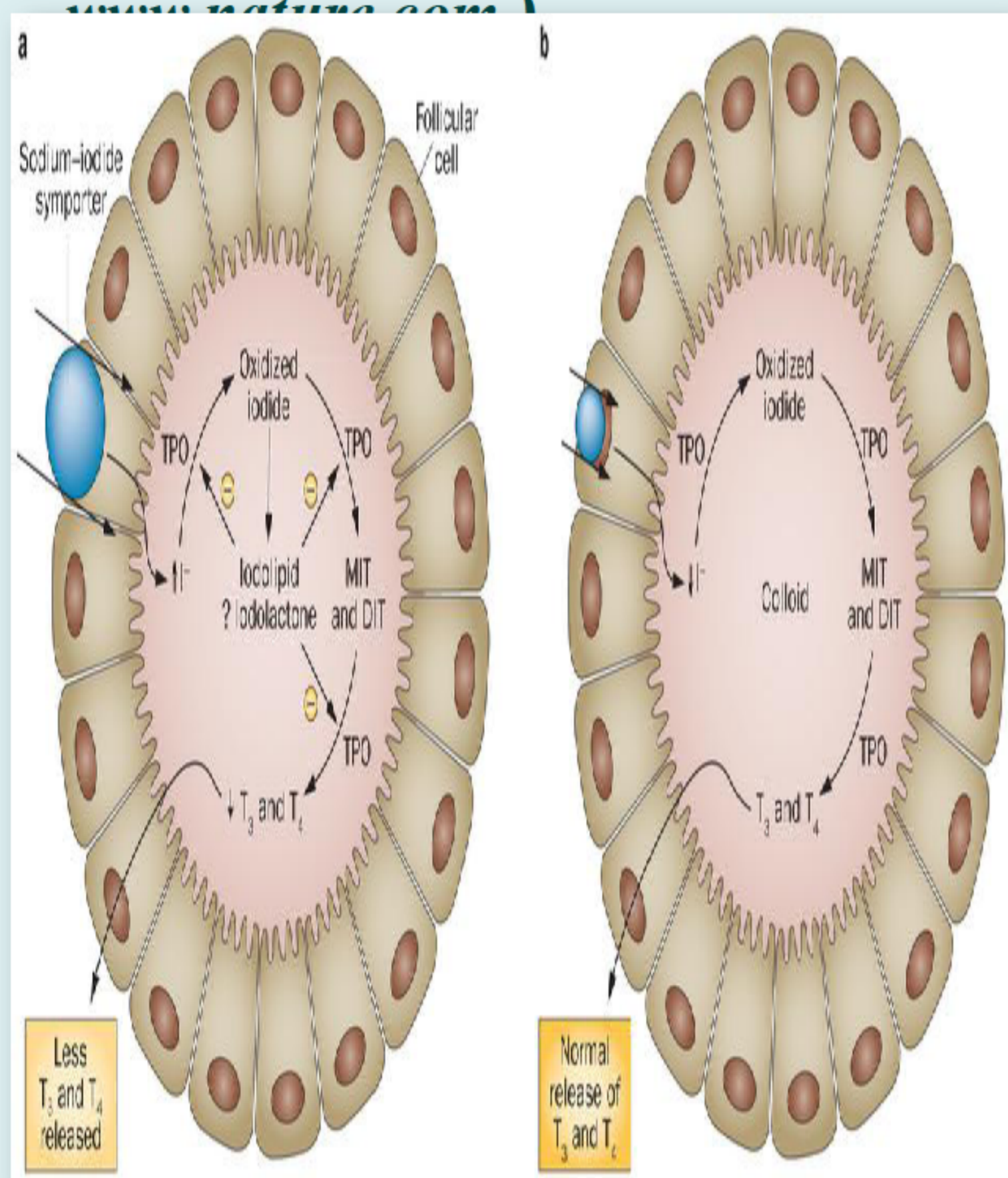
Safety and efficacy of rapid thyroid blockade with Lugol's Iodine in the pre-surgical management of Graves' thyrotoxicosis

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Background:

A significant number of patients are intolerant of antithyroid drugs (ATD) and thyroidectomy remains the only treatment option available to patients who decline radioiodine as definitive therapy. As patients with poorly controlled thyrotoxicosis are at risk of developing thyroid storm, optimal pre-operative control of hyperthyroidism is essential. Rapid thyroid blockade (RTB) with the contrast agents Sodium Iodate and Iopanoic Acid were attractive treatment options but these agents are no longer available for routine use.

Mechanism of action: Wolff Chaikoff effect (Source: www.wikidoc.com)



OBJECTIVE

To explore the safety and efficacy of rapid thyroid blockade with Lugol's iodine in the pre-surgical management of Graves' thyrotoxicosis.

Indications:

- 1- Resistance to ATDs (4 patients)
- 2- Non compliance (1 patient)
- 3- ATDs intolerance (1 patient)

Methods:

Lugol's iodine (0.2 mls -5% Iodine- three times a day) was administered to 6 patients with Graves' thyrotoxicosis.

Treatment was started 10 days prior to planned thyroid Surgery.

TSH at baseline and subsequent FT4 and FT3 were measured at fixed intervals prior to thyroidectomy (days 2,5 and 7) Surgery on Day 10.

Patients demographics:

- Age:
 - Mean 36 years {16-74 years}
 - Median age 38 years
- Gender: All females

Outcomes:

All patients were clinically and biochemically euthyroid before surgery. None developed hypoparathyroidism, laryngeal nerve damage, or worsening of ophthalmopathy after surgery.

Histopathology:

1. Hyperplastic thyroid *2
2. Nodular Goitre
3. Colloid filled follicles
4. Multinodular goitre

Results:

- Lowest FT4 levels 16.2 pmol/l [13.2-20.6] SD 2.7 achieved within 3.83 days [2-7] SD 1.7 with mean average reduction rate 7.6 pmol/l/day [2.45-15.5] SD 5.2
- Mean FT3 level 4.383 pmol/l [3.5 -5.7] SD 0.87
- Mean percentage FT4 reduction was 45.2% and mean percentage FT3 reduction was 40.4%.

Figure 1 :Summary of the key results (Individual patients)

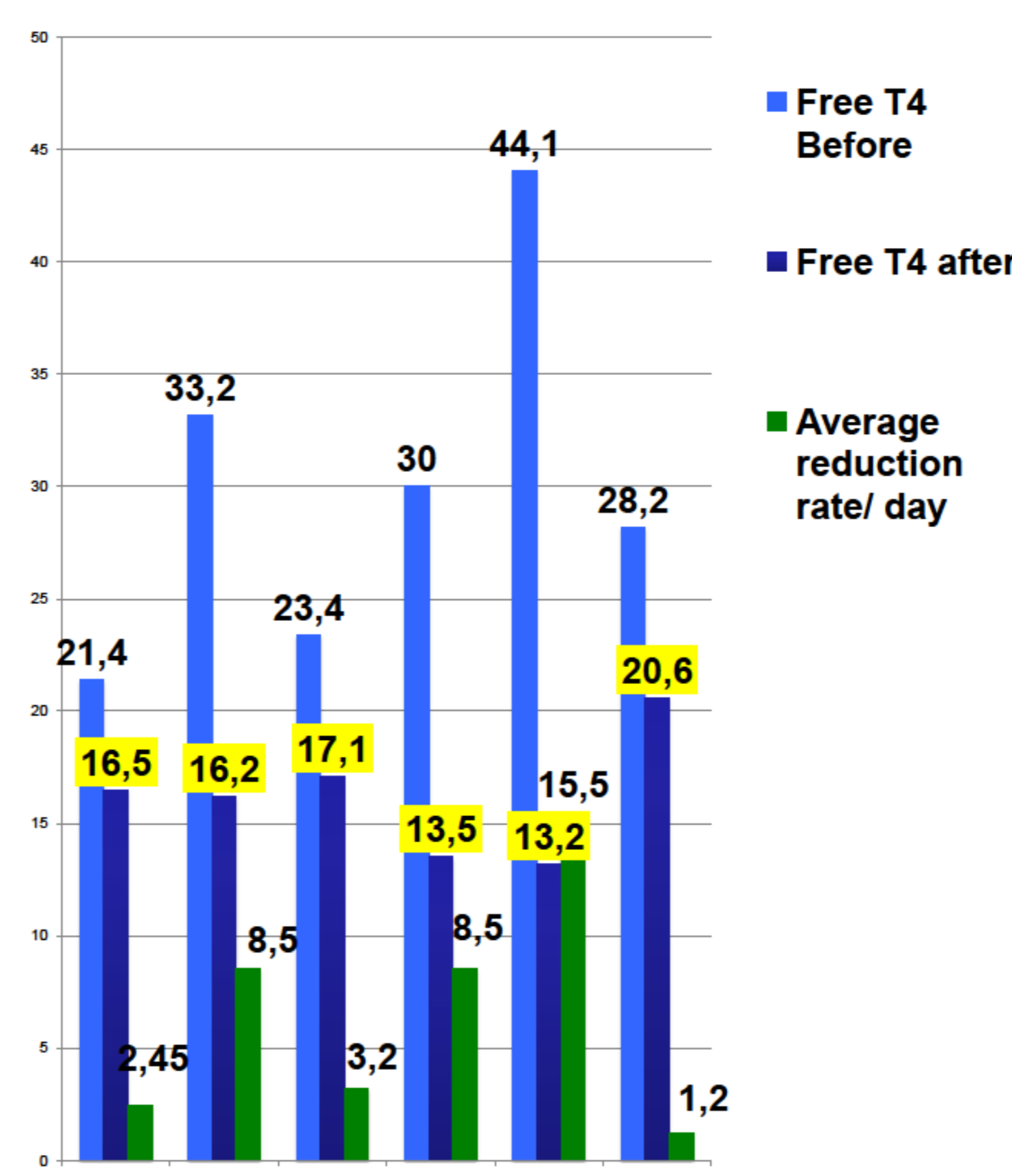


Figure 2: Mean T3 and T4 reduction %

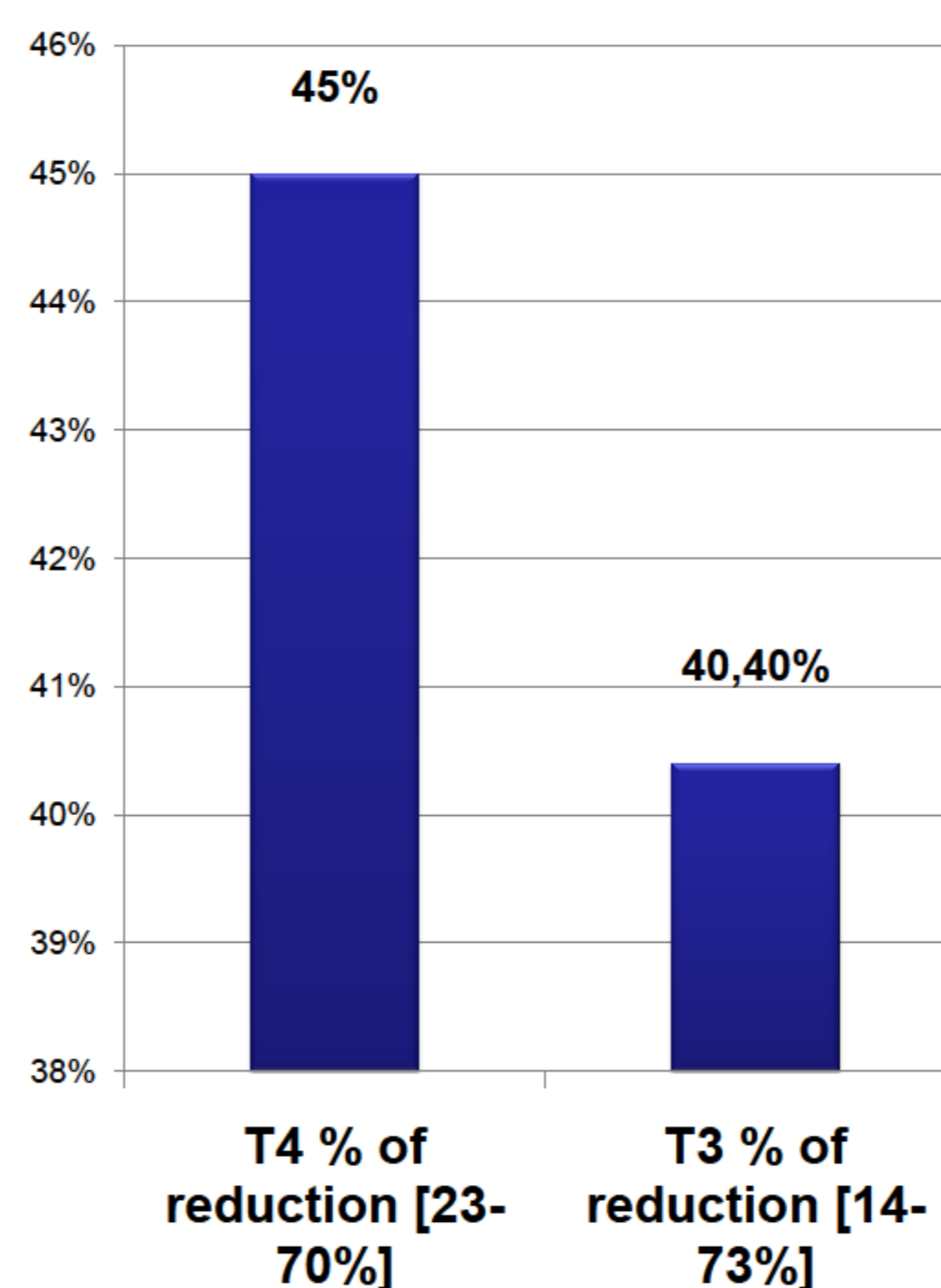


Figure 3: T4 average reduction rate and time to lowest T4 (Mean)

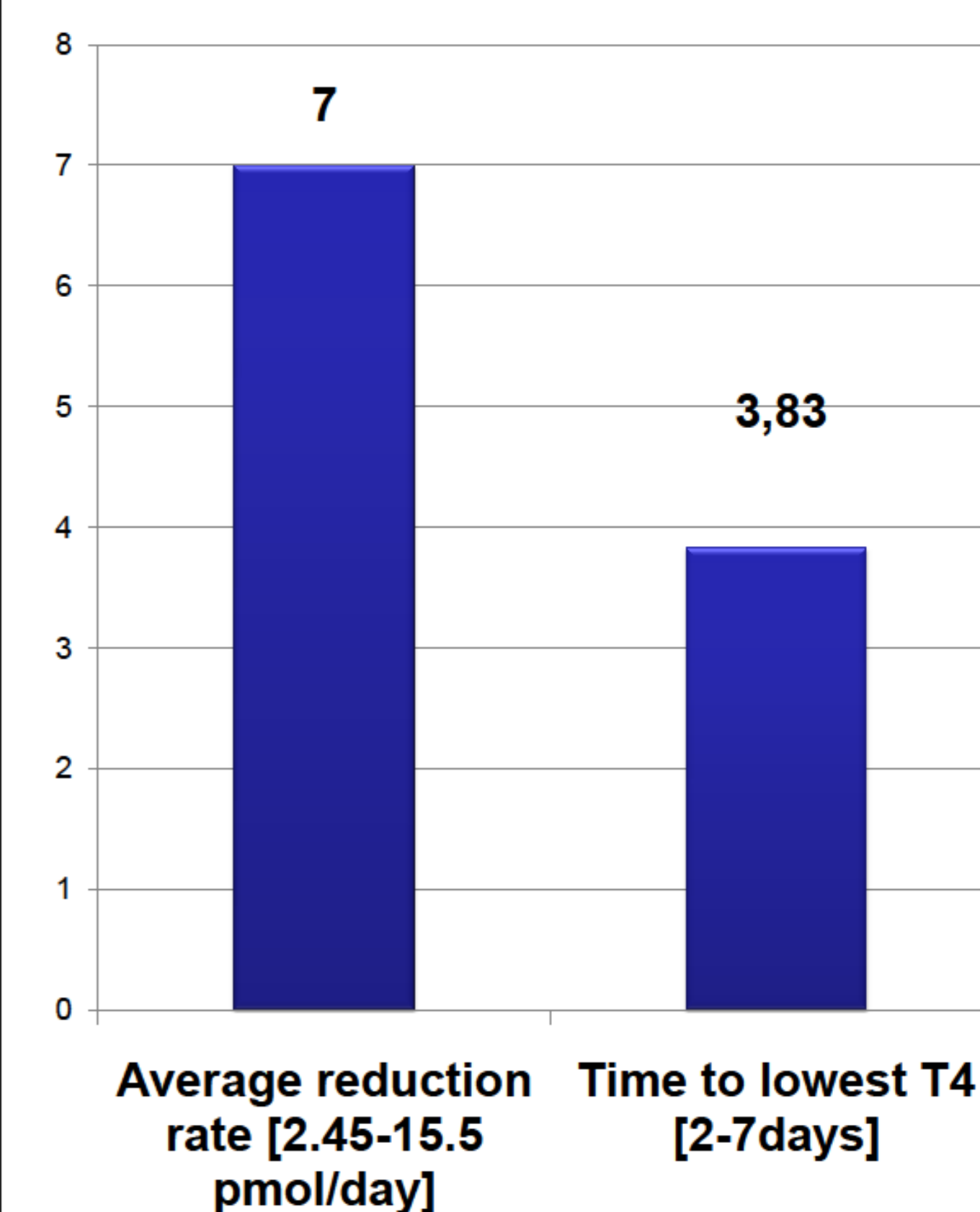
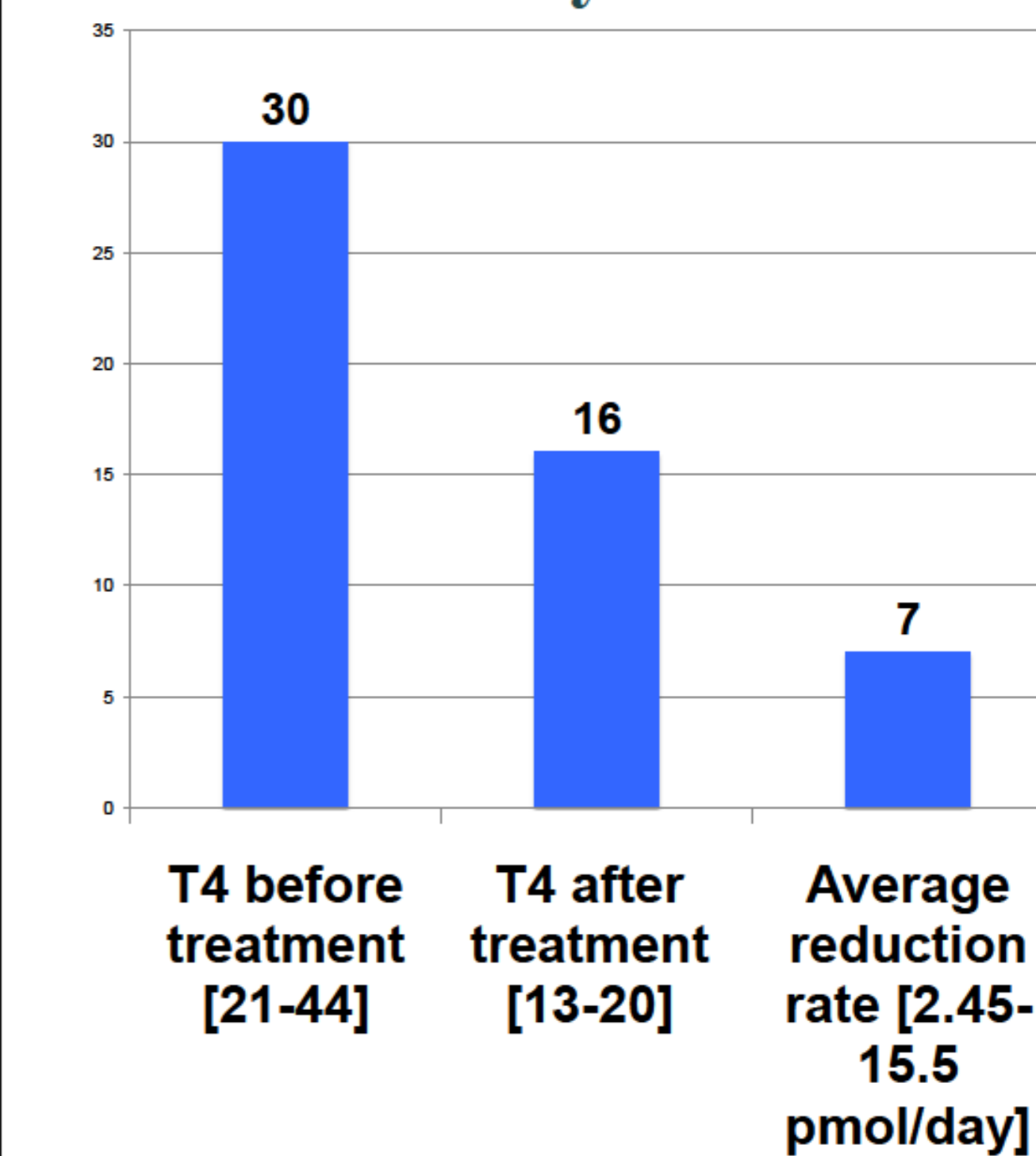


Figure 4: Mean T4 before and after Rx [pmol/l] and average reduction/day



CONCLUSIONS

- In this pilot study, Lugol's Iodine was effective in rendering patients euthyroid prior to planned thyroidectomy.
- The long term safety and efficacy of rapid thyroid blockade with Lugol's iodine needs to be assessed in a larger cohort of patients.

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