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 thyroidec- tomy remains the only treatment option available to patients who decline radiiodine 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 Ioprate and Iopanoic Acid were attractive treatment options but these agents are no longer available for routine use.

Mechanism of action: Wolff Chaikoff effect (Source: 

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

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<tr>
<th>Indications:</th>
<th>Results:</th>
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<td>1- Resistance to ATDs (4 patients)</td>
<td>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</td>
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<td>2- Non compliance (1 patient)</td>
<td>Mean FT3 level 4.383 pmol/l [3.5-5.7] SD 0.87</td>
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<td>3- ATDs intolerance (1 patient)</td>
<td>Mean percentage FT4 reduction was 45.2% and mean percentage FT3 reduction was 40.4%</td>
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**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

**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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