Treatment of Pediatric Graves Disease: results of a multicenter survey in Portugal


Background and objective

Pediatric Graves Disease (GD) is a rare disease and there is currently no evidence-based strategy for its management. Therapy choice is determined by individual consideration of the risks and benefits of the three treatment modalities and varies considerably within and between countries, depending on local traditions and resources and on the different clinical conditions of the patients.

In 2011, American Thyroid Association (ATA) and the American Association of Clinical Endocrinologists (AACE) published Guidelines on GD, changing disease’s evaluation. Nevertheless, GD treatment is still a matter of controversy.

The main objective was to know the characteristics of the pediatric Portuguese GD population, how the different therapies were used and their results.

Methods

SPEDP conducted the first nationwide questionnaire survey among all the Endocrinologists and Pediatricians in the Portuguese Public Health System Hospitals about pediatric GD treatment. A questionnaire (Fig. 1) was designed and distributed to all hospitals with pediatric endocrinology, in order to include all GD patients under 18 years at diagnosis and with a minimum of 6 months follow-up. A retrospective assessment of patient’s medical records was performed from May to August 2013.

For the statistical analysis we used Excel® and SPSS®. We used Kruskal-Wallis Test and Spearman’s correlation and considered a level of significance of 5%.

Results

87 hospitals contacted, 67 responders
- 25 hospitals reported patients
- Pediatric clinic – 56%; Endocrinology clinic – 44%
- 152 patients were identified, 76% were females
- Mean age at diagnosis: 11.3 ±3.4 years [3.3-18,3]

Type of ATD Total patients (N/%) Initial dose (mg/kg) Initial ATD duration (months) Advance effects (all minor) (N/%)

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<th>TRABs evolution (N=152)</th>
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- 128 patients treated with ATD
- 63 patients treated with MTZ
- 50 patients treated with PTU
- 14 patients treated with surgery

- 7 patients treated with surgery with MTZ
- 6 patients treated with surgery with PTU

- 7 patients treated with surgery with MTZ and PTU

| Patients ongoing first course ATD (N=60) |

- 5 patients treated with MTZ
- 4 patients treated with PTU
- 3 patients treated with surgery

| Table 1 – Initial treatment with ATD and adverse effects |

- Table 2 – Characteristics of patients that stopped ATD

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- Table 2 – Characteristics of patients that stopped ATD

- Table 3 – Patients ongoing first course ATD (N=60)

- Table 4 – Patients that stopped ATD (N=92)

- Table 5 – Initial and final TRABs and remission status (N=92)

Conclusion

This first multicenter Portuguese survey is representative of the national pediatric GD population as it included 77% of all hospitals in our country. ATD therapy was the first choice for all patients, MTZ being preferred. Only minor adverse effects of the drugs were found. Despite a long treatment duration, only 25% patients achieved long term remission. Definitive therapy was a second choice in few patients (22.4%) and more frequent in recent years. Few significant predictive factors of remission were found between groups that finished first course of ATD, namely lower final TRABs and the use of MTZ instead of PTU.

Our population results are conform with literature and reflect a tendency to change GD therapy, introducing definite therapy sooner in the course of treatment.

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Figure 1 – Questionnaire

Figure 2 – Age at diagnosis

Figure 3 – Duration of first course of ATD (months)

Figure 4 – Duration of first course of ATD (months)

Figure 5 – Treatment evolution

Figure 6 – Treatment evolution

Figure 7 – Initial and final TRABs and remission status (N=92)

A statistically significant positive association between final, but not initial (p=0.011) TRABs and remission/remission category was found. Patients without remission had higher final TRABs (Spearman correlation n=0.254; p=0.011)