

# GRAVES OPHTHALMOPATHY IN PEDIATRIC AGE: DIFFERENT SEVERITIES, DIFFERENT APPROACHES

The 59th Annual Meeting Online  
22-26 September 2021

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## INTRODUCTION

- Hyperthyroidism represents 10-15% of all pediatric thyroid diseases.<sup>1</sup>
- Grave's disease (GD) is the most common presentation (99%).<sup>2</sup>
- GD European incidence is 0,8/100.000 children/year with female dominance (3-5:1).<sup>2,3</sup>
- Grave's orbitopathy (GO) is present in 30-67% of all patients.<sup>3</sup>
- GO is more frequent in teenagers (68,2% versus 31,8% in less than 11 years old).<sup>3,4</sup>
- Treatment approach is based on clinical activity.<sup>5</sup>
- A wait-and-see policy is the preferred approach.<sup>3,6</sup>

## CASE REPORT 1

- 7-year-old boy.
- Tachycardia, hyperactivity, hyperphagia, hypersudoresis, heat intolerance, weight loss and diarrhea.

### Clinical Activity Score – CAS

Spontaneous retrobulbar pain **✗**

**✓** Pain on eye movement

**✓** Eyelid erythema

**✓** Conjunctival erythema

Eyelid edema **✗**

Cornea inflammation **✗**

Conjunctival edema **✗**

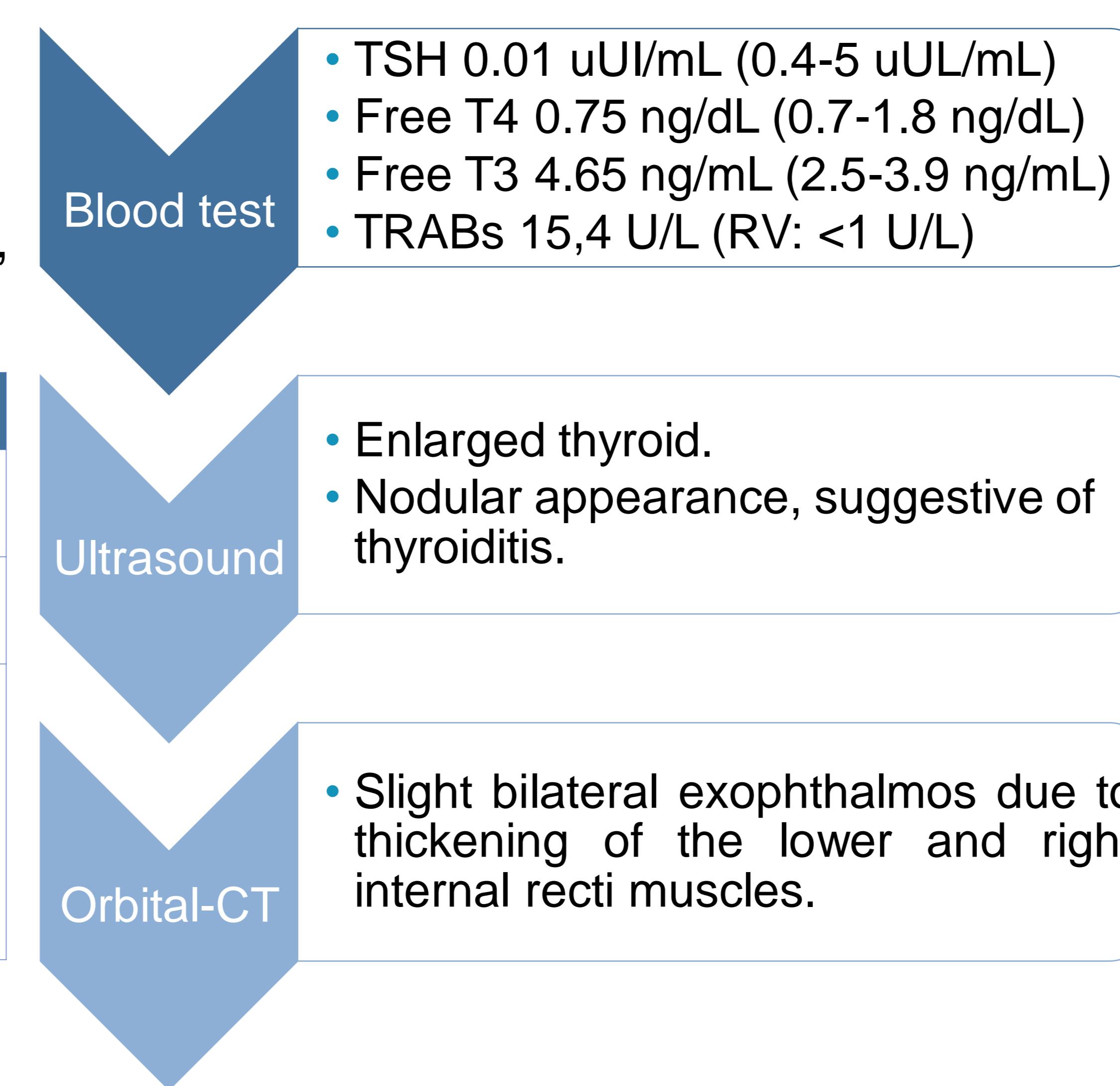
### Severity – EUGOGO score

Severe

Moderate

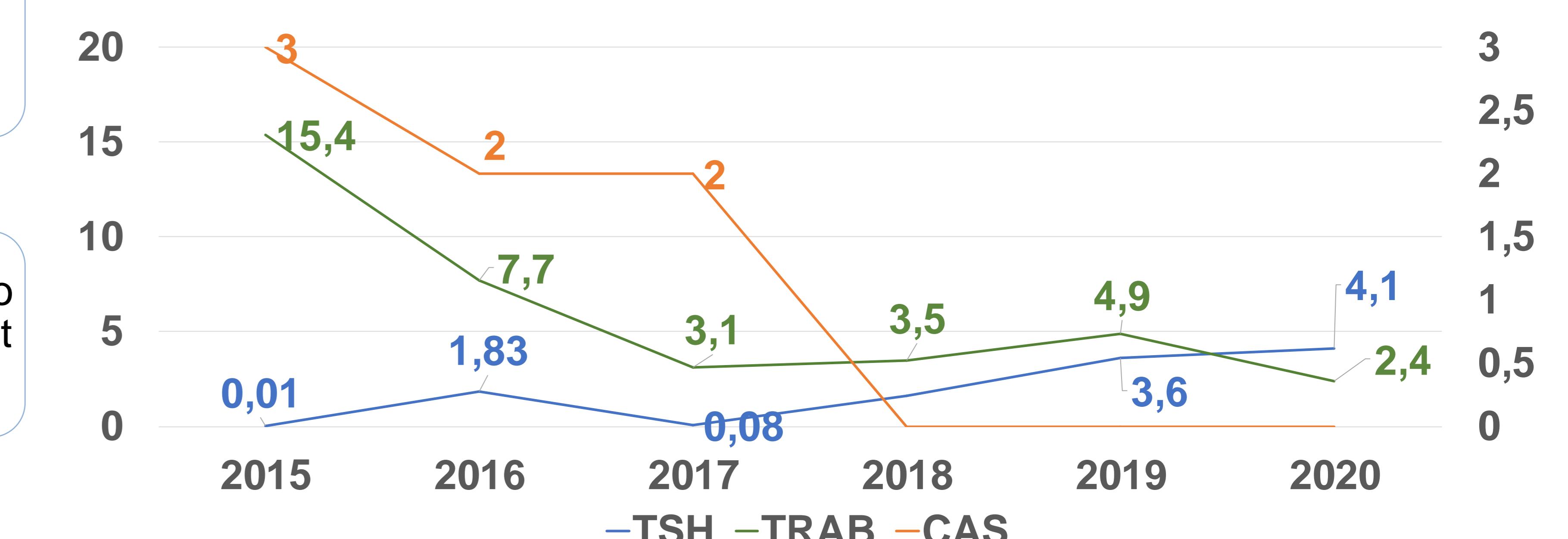
Mild:

- Eyelid retraction < 2mm
- Proptosis < 3mm



## Treatment

- Thiamazole 3.5 mg/day (94.6 ug/kg/day)
- Propranolol 10mg/day
- Lubricating eye drops
- Selenium 100mg/day



## CASE REPORT 2

- 13-year-old boy.
- Sent by Ophthalmology for control and weaning from corticosteroid therapy (prednisolone 50 mg/day).

### Clinical Activity Score – CAS

Spontaneous retrobulbar pain **✗**

**✓** Pain on eye movement

**✓** Eyelid erythema

**✓** Conjunctival erythema

Eyelid edema **✓**

Cornea inflammation **✓**

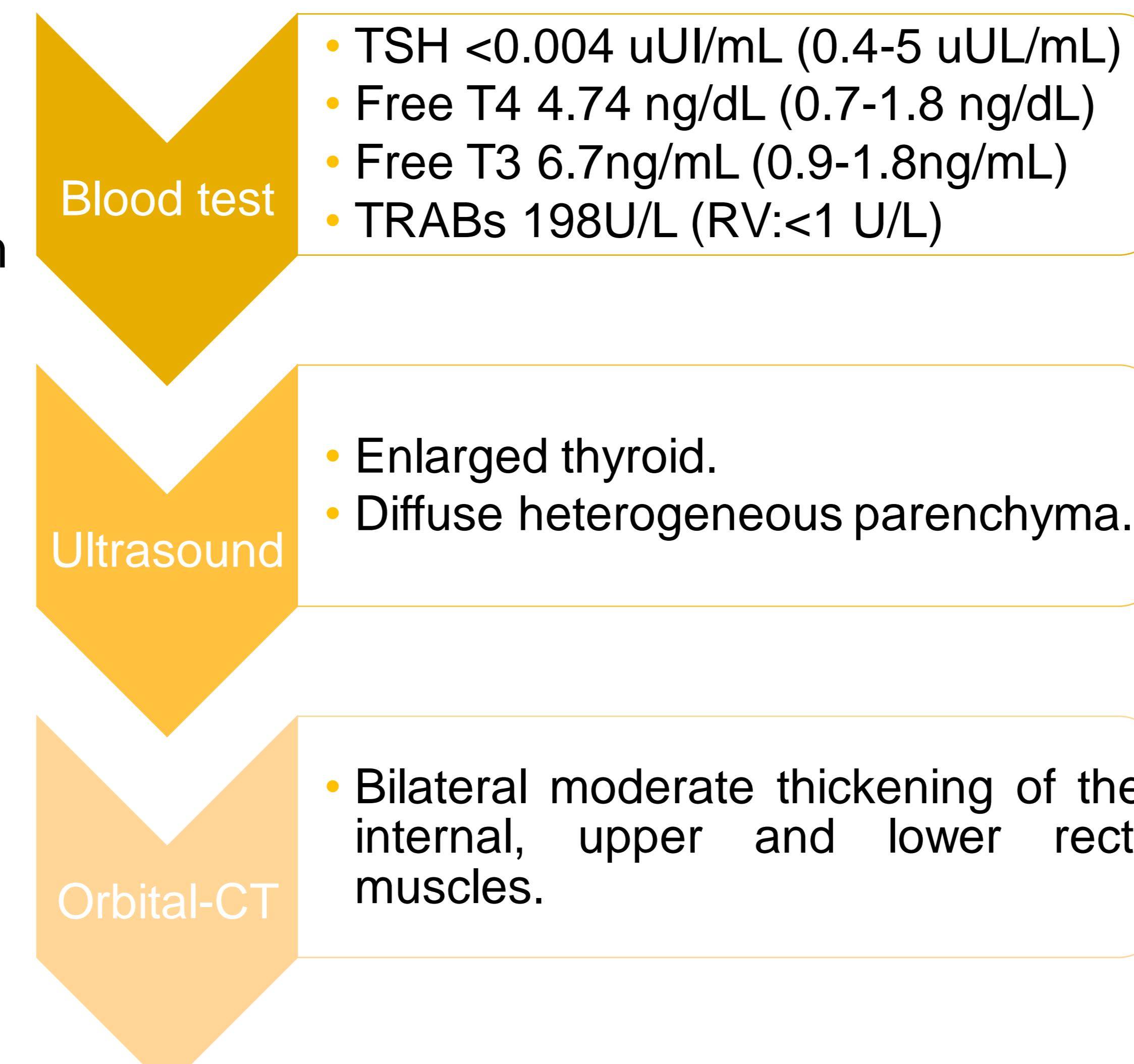
Conjunctival edema **✓**

### Severity – EUGOGO score

Severe

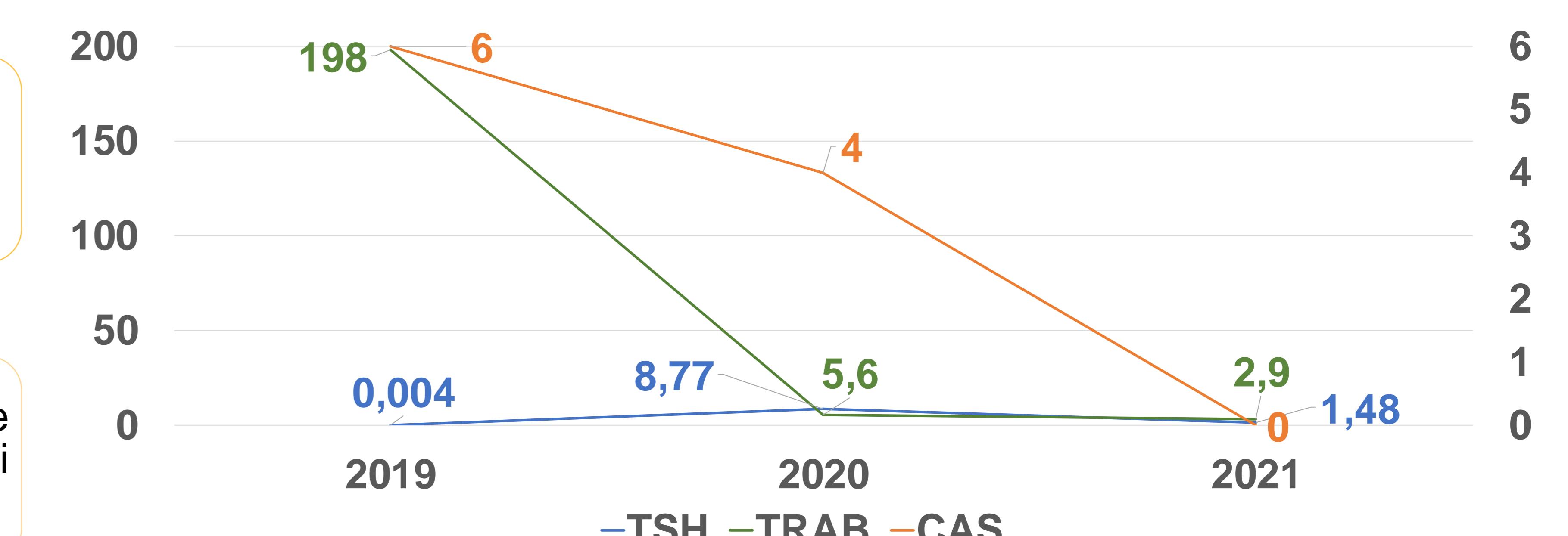
Moderate

Mild



## Treatment

- Thiamazole 10mg/day (170.6 ug/kg/day)
- Prednisolone 50mg/day



## CONCLUSION

The cases of these boys show that the symptoms of orbitopathy in the pediatric population are generally mild and self-limited. However, proptosis, eyelid retraction and soft tissue involvement can impair quality of life and negatively affect self-confidence. Therefore, in more severe cases, targeted treatments are necessary and so all children with hyperthyroidism must be observed by an ophthalmologist.

1. Azizi F, Amouzegar A. Management of thyrotoxicosis in children and adolescents: 35 years' experience in 304 patients. J Pediatr Endocrinol Metab. 2018. doi:10.1515/j pem-2017-0394; 2. Léger J, Oliver I, Rodrigue D, Lambert AS, Coutant R. Graves' disease in children. Ann Endocrinol (Paris). 2018. doi:10.1016/j.ando.2018.08.001; 3. Mendoza F, Lacourt R. P. Orbitopatía de Graves en pediatría. Rev Med Chil. 2015. doi:10.4067/S0034-98872015000800011; 4. Krassas GE, Segni M, Wiersinga WM. Childhood Graves' ophthalmopathy: Results of a European questionnaire study. Eur J Endocrinol. 2005. doi:10.1530/eje.1.01991; 5. Bartalena L, Baldeschi L, Boboridis K, et al. The 2016 European Thyroid Association/European Group on Graves' Orbitopathy Guidelines for the Management of Graves' Orbitopathy. Eur Thyroid J. 2016. doi:10.1159/000443828; 6. Eha J, Pitz S, Pohlenz J. Clinical features of pediatric Graves' orbitopathy. Int Ophthalmol. 2010. doi:10.1007/s10792-010-9351-6