

Graves' Disease in Childhood and Adolescence: Clinical Manifestations, Adverse Effects, and Predictive Response Factors to Antithyroid Drugs



Dujovne N, Dratler G, Pitoia F, Felipe L, Aryazabal V, Soria I, Berger M, Belgorosky A., Herzovich V.
Servicio de Endocrinología, Hospital de Pediatría "Prof. Dr. Juan P. Garrahan", Buenos Aires, Argentina.



HOSPITAL DE PEDIATRÍA
"PROF. DR. JUAN P. GARRAHAN"

Introduction

Antithyroid drugs (ATD) are recommended as the initial treatment in Graves' disease in childhood and adolescence. Identification of predictive response factors to ATD might lead to improve patient's management by facilitating the identification of patients requiring long-term ATD or early alternative therapy.

AIM

- 1) To assess the prevalence of signs and symptoms of hyperthyroidism in childhood and adolescence.
- 2) To evaluate the adverse effects rates after medical treatment .
- 3) To evaluate percentage of remission under treatment.
- 4) To determine prognostic factors for the response to pharmacological treatment.

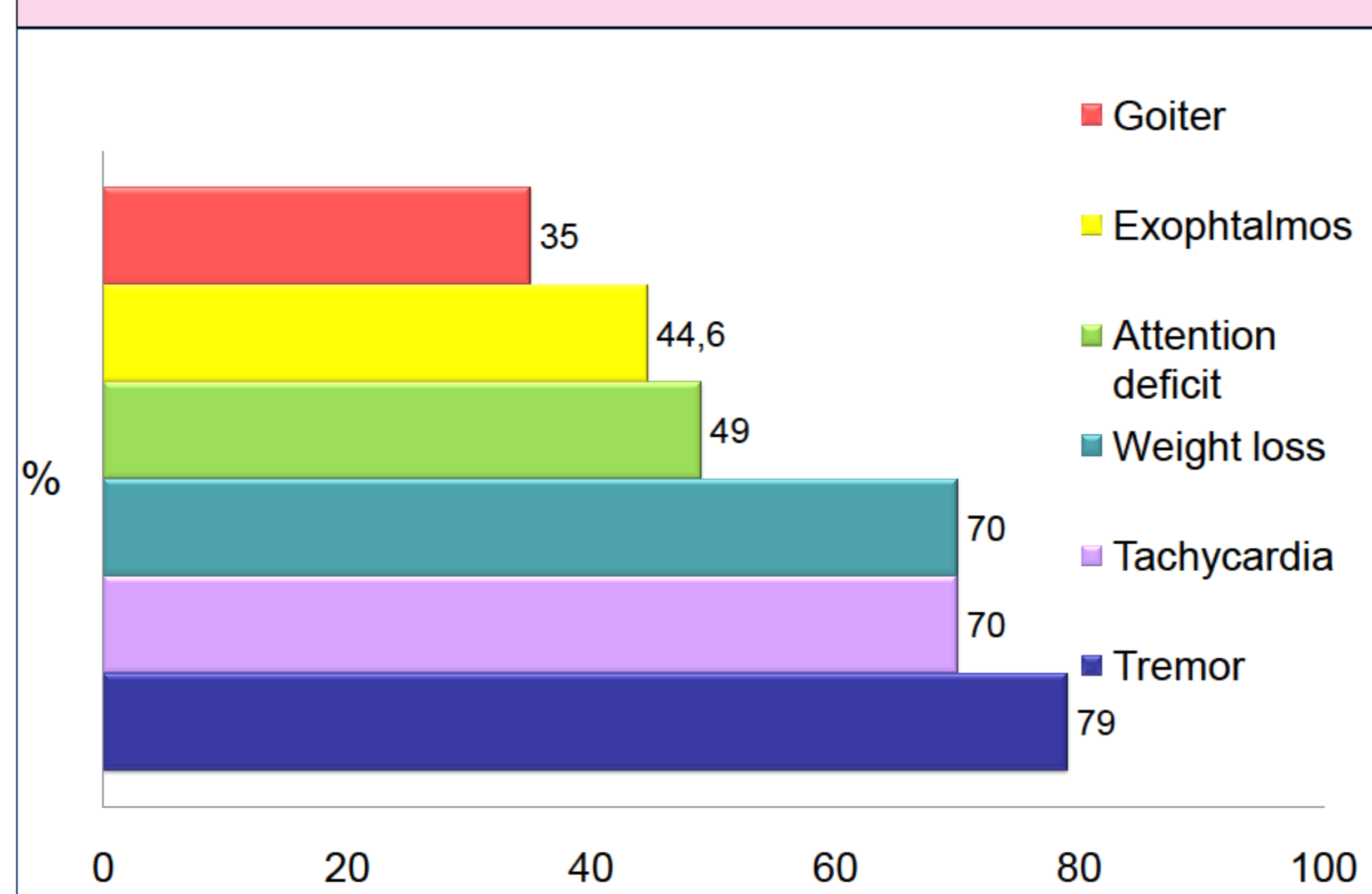
Materials and Methods

We performed a retrospective and descriptive study. We evaluated 157 patients with an average age of 10.78 ± 3.17 years and that were seen between September 2005 and May 2012 at J.P. Garrahan Hospital. All patients were initially treated with methimazole 0.25 to 1.0 mg/kg/day.

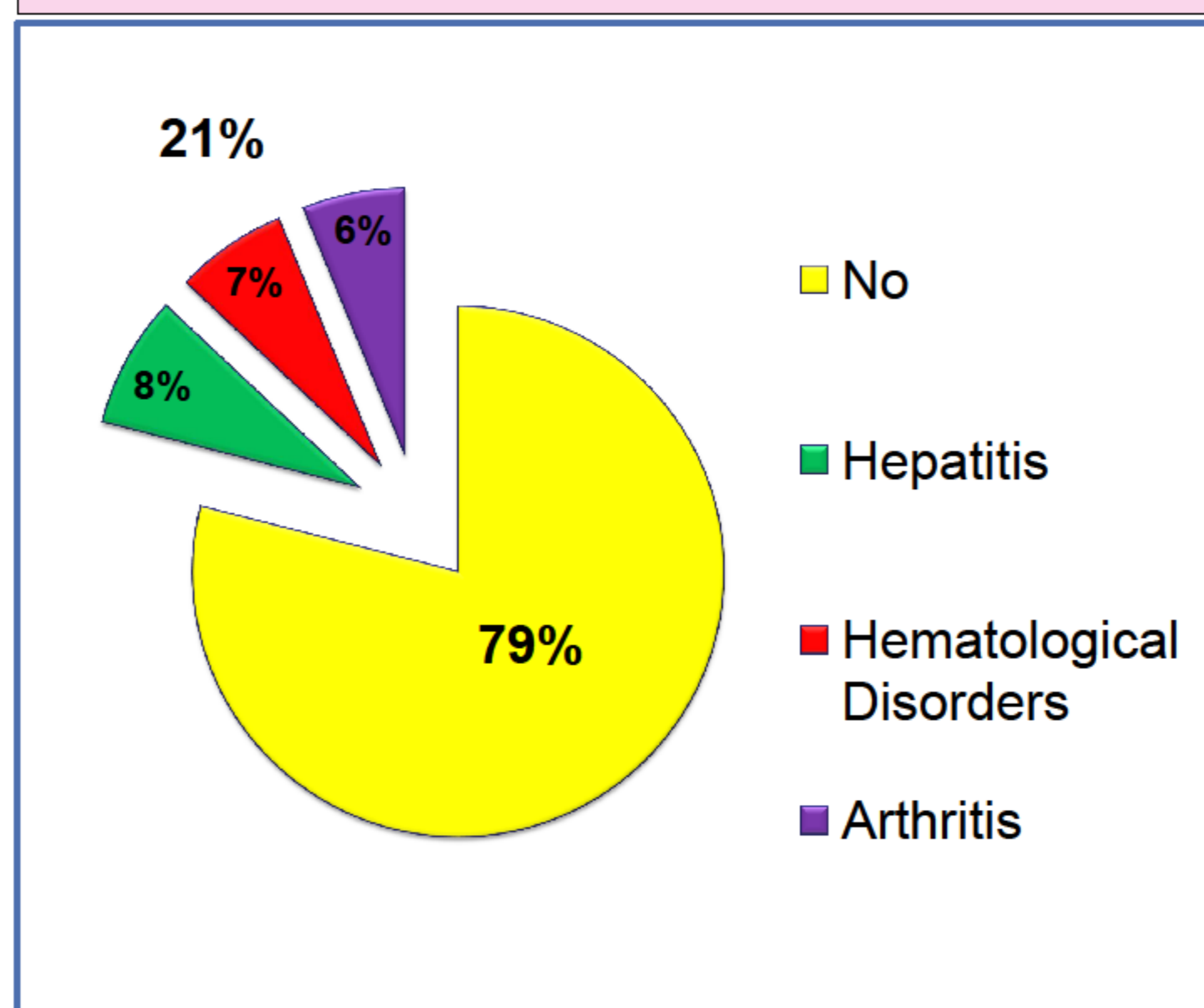
We evaluated clinical presentation, chronological age and serum level of TSH, T3, T4, fT4 and TBII (TSH, T3, fT4: CMIA - Architect, Abbott, T4: IMMULITE 2000 Immunoassay System, Siemens, TBII: radioreceptor assay, SRS) at diagnosis and adverse effects of ATD, percentage of remission (defined as being euthyroid for at least 1 year after cessation of ATD).

Results

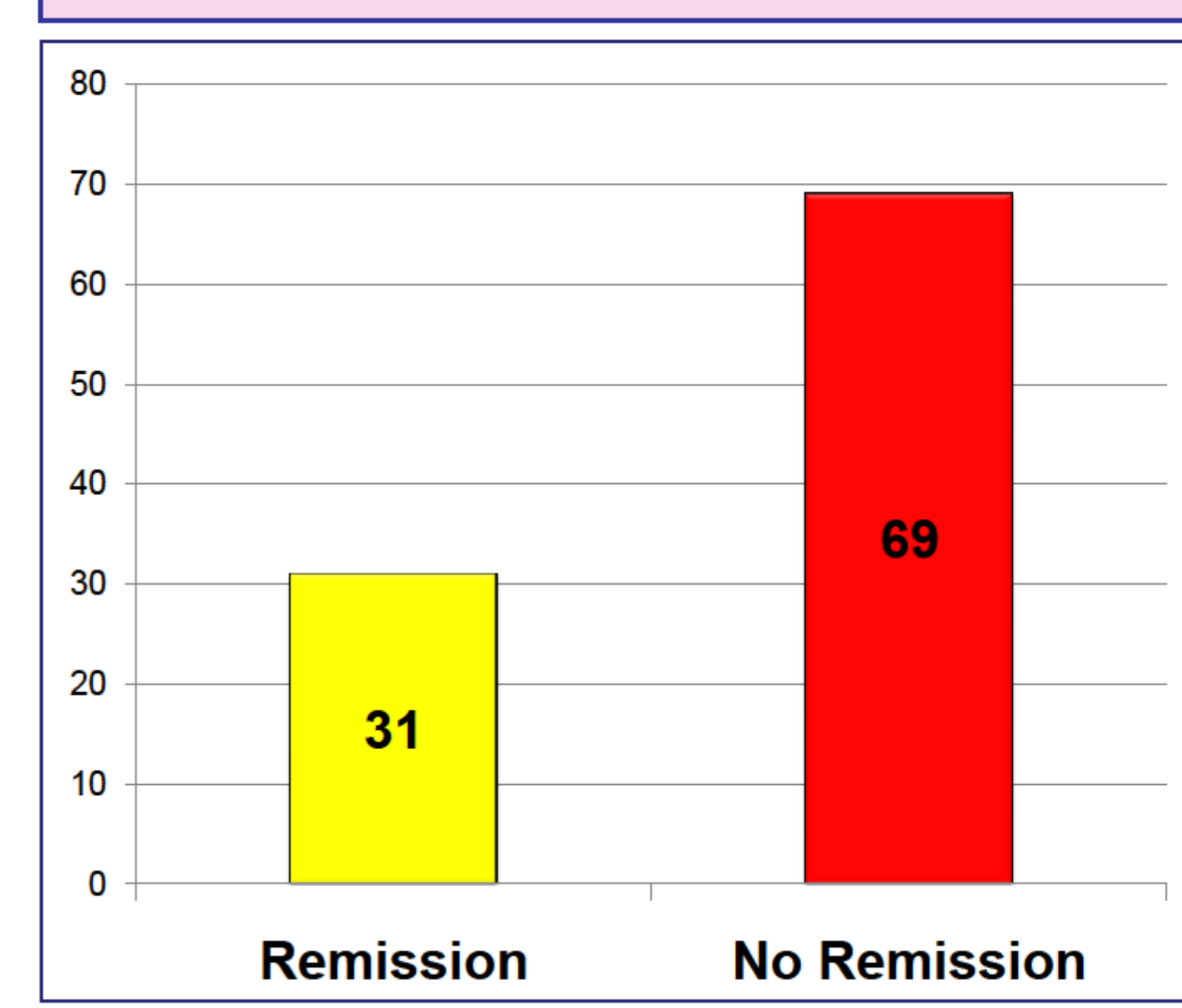
Clinical Presentation



ATD: Adverse effects



% Remission with ATD



Response to ATD

Level at diagnosis	Good Response		Poor Response	
	Median (SD)	CI (95%)	Median (SD)	CI (95%)
T3 (ng/ml)	3.95 (0.81)	[3.7; 4.2]	6.82 (1.24)	[6.6; 7.1]
fT4 (ng/dl)	3.58 (0.88)	[3.3; 3.8]	5.24 (1.09)	[5; 5.5]
TBII (%)	46.74 (10.67)	[43.6; 49.8]	70.55 (12.8)	[67.8; 73.3]

Factors for poor response to ATD

	O.R.	IC(95%)	P-Value
T3	13.34	3.88 – 45.83	<0.0001
Age at diagnosis	0.66	0.48 - 0.9	0.0094
Large Goiter	65.63	2.22 – 1936.56	0.0154

Conclusion

The most common symptoms in our population were tremor, weight loss and tachycardia.

Adverse effects generated by ATD were observed in 29 patient (21%): hepatitis, hematological disorders and arthritis, reported in 8 %,7% and 6% respectively.

We observed a poor response to ATD in young patients, large goiter, high serum T3 and TBII levels.

Early alternative therapy (Surgery or Radioiodine) should be considered in these patients.

References

1. Rebecca S.Bahn, Henry Burch, David Cooper, Jeffrey Garber, Carol Greenlee, Irwin Klein, Peter Lauberg, Ross Mc Dougall, Victor M Montori, Scott Rivkes. Hyperthyroidism and other causes of Thyrotoxicosis: management guidelines of the american thyroid association and american association of clinical endocrinologist. Thyroid Vol 21 Number 6, 2011.

