

# Incidence and treatment outcome of childhood thyrotoxicosis

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## Introduction and objectives

There are only few studies on the incidence of thyrotoxicosis in children. They report an annual incidence between 0.7 and 6.5/100,000 children below the age 15–16 years (1-4). We have previously shown an increasing incidence of childhood thyrotoxicosis in Sweden during the 1990's (1).

There is a high risk for relapse in thyrotoxicosis after drug withdrawal (5). Previous reports have shown divergent results concerning predictors of remission (6-8).

**The aims of this study** were to describe the incidence of childhood thyrotoxicosis in central Sweden during 1990-2009 and to study the treatment outcome.

## Methods

Children < 16 years of age diagnosed with thyrotoxicosis during 1990-2009 and living in one of the following counties in central Sweden: Örebro, Värmland, Sörmland, Västmanland, Dalarna; were identified retrospectively.

Data on the total number of children < 16 years of age living in the area during the study period was collected from Statistics, Sweden. Data on clinical and biochemical characteristics and outcome of the treatment were collected from medical records.

## Results

In total, 113 patients were identified and the majority (81%) was female. The annual incidence was 2.2/100,000 children (95% CI 1.8–2.6) during the whole study period. The incidence was higher during the last ten studied years as compared to the first ten studied years ( $p = 0.006$ , Table). The increase in incidence was seen in both girls and boys ( $p = 0.041$  and  $p = 0.038$ , respectively).

Treatment with antithyroid drugs (ATD) was the first hand choice, but 69% of the patients relapsed within three years after the planned discontinuation of the ATD treatment (Figure). Boys relapsed more often than girls ( $p = 0.013$ ), but we could not identify any other significant predictor for relapse.

## Conclusions

Thyrotoxicosis is uncommon in paediatric patients, but the incidence seems to be increasing.

The outcome of the initial treatment with ATD is still poor with high relapse rates.

Boys seem to have an increased risk for relapse compared to girls.

More studies are needed to identify an optimal treatment protocol for each individual.

The probability for relapse after discontinuation of ATD

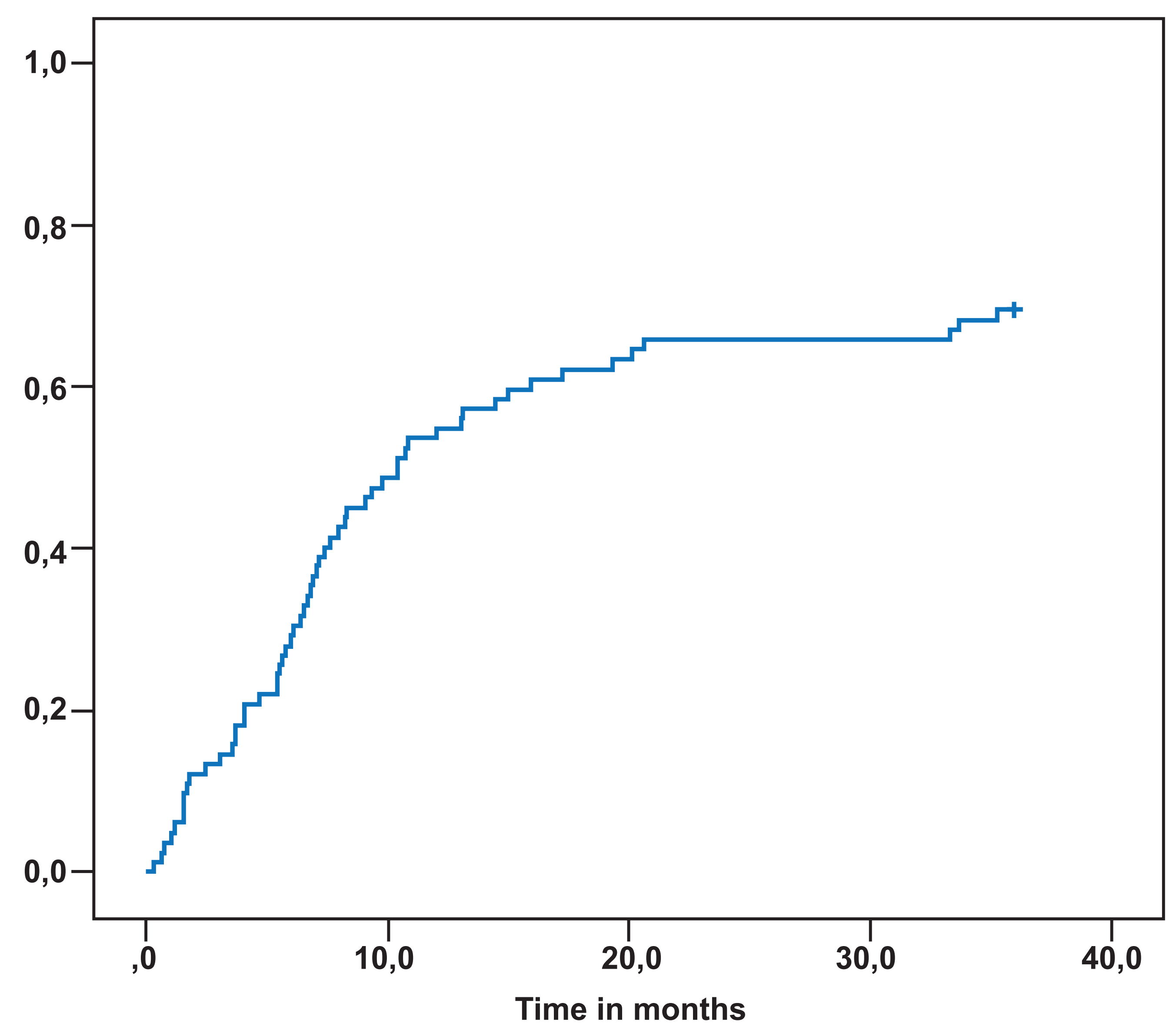
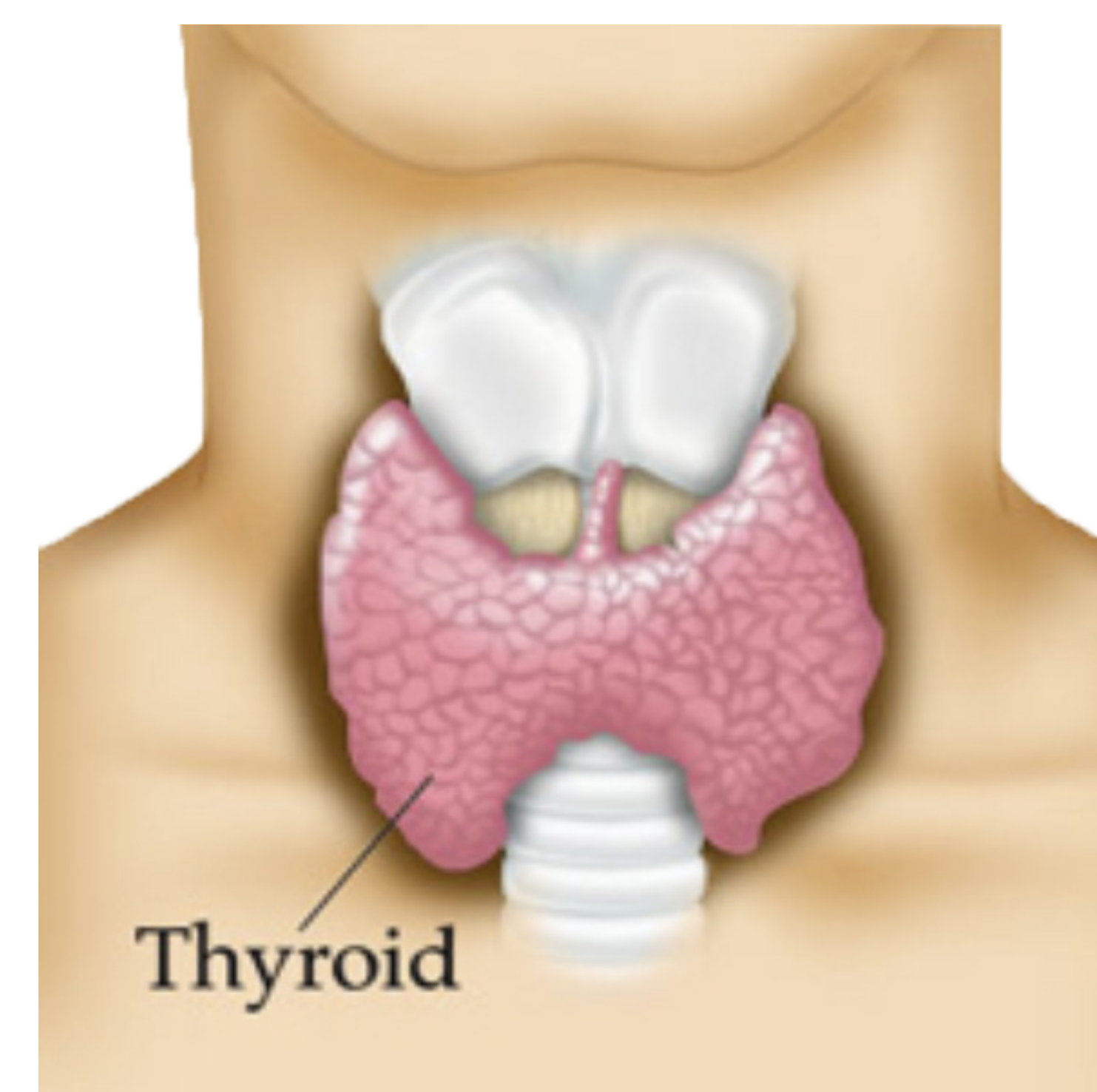


Table.

The annual incidence rate of childhood thyrotoxicosis in central Sweden

Time period	Annual incidence	95% confidence interval
1990–1999	1.6/100,000	1.2–2.2/100,000
2000–2009	2.8/100,000	2.2–3.6/100,000



### References

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