



# Commentary on “Remission in pediatric Graves’ disease treated with antithyroid drug and the risk factors associated with relapse”

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Hyperthyroidism is a disease in which the thyroid produces excessive hormones and produces clinical symptoms. The most common cause of hyperthyroidism in children is Graves’ disease (GD). Autoimmune hyperthyroidism can be diagnosed by measuring autoantibodies against the thyroid-stimulating hormone receptor. The goal of treatment is to control the overproduction of thyroid hormone, for which there are 3 options: antithyroid drug (ATD), radioactive iodine therapy, and surgery. Methimazole (MMZ) and propylthiouracil are used for drug treatment, although MMZ is mainly used in children because of its long serum half-life and low hepatotoxicity. The initial dose is MMZ 0.5 mg/kg/day, once or twice a day, and the dose titration method is most common.<sup>1)</sup>

Considering that the remission rate with ATD is not high, definite treatment is recommended if remission does not occur after 1 to 2 years of therapy with MMZ. However, there are few guidelines for children.

Remission was defined as a euthyroid state for at least 12 months after discontinuation of ATD treatment and no recurrence during the follow-up period. Many studies have reported that the remission rate increases with ATD use period in children. A recent systematic review noted that the remission rate was 43.7% when ATD was used for 5–6 years and reached 75% after 9 years of treatment.<sup>2)</sup> In 2022, the European Thyroid Association for the Management of Childhood GD also recommended extending initial ATD for at least 3 years and potentially for more than 5 years if remission is unlikely.<sup>3)</sup> Factors related to remission differ from study to study, but the remission rate is low in males,<sup>4)</sup> younger age at diagnosis, non-Caucasian ethnicity, higher TSH receptor antibody at diagnosis,<sup>5)</sup> and larger goiter size.<sup>6)</sup> There is also a report of an association between the time to TSH binding inhibitory immunoglobulin normalization after treatment and GD remission.<sup>7)</sup>

In this study,<sup>8)</sup> the authors studied 81 Chinese children treated with ATD and reported that 17.8% experienced remission and 57.4% experienced relapse after discontinuation of ATD. In addition, although the remission rate through ATD treatment was low in Asian children with GD, the longer was the ATD treatment period, the higher was the remission probability. Since most relapses occur within the first 2 years after discontinuation of ATD, patients and their guardians should be educated about the long treatment period and the risk of recurrence when starting treatment.

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See the article “Remission in pediatric Graves’ disease treated with antithyroid drug and the risk factors associated with relapse” via <https://doi.org/10.6065/apem.2244038.019>.

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