

# Clinical case of acute liver injury in pediatric patient with autoimmune hyperthyroidism

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## Background:

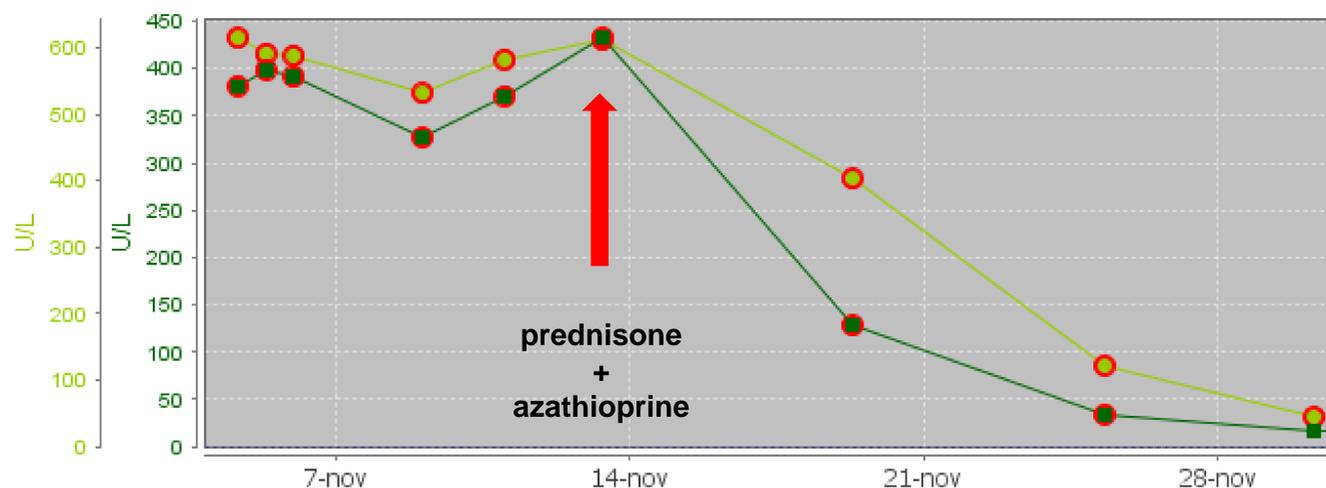
Autoimmune hepatitis (AIH) and methimazole (MMI)-induced toxic hepatitis are both rare diseases in pediatric age.

## Case presentation:

We present the case of a 15-year-old girl affected by idiopathic arthritis and autoimmune thyroiditis. The **euthyroid** autoimmune thyroiditis was diagnosed at 13 years of age. At 15 years old she developed hyperthyroidism (TSH <0.01 mcU/ml, FT4 2.3 ng/dl, FT3 8.4 pg/ml, TRAb 18 IU/L) and was treated with MMI (0,28 mg/kg/day). Two weeks after the start of treatment FT3 and FT4 were normalized, but there was a relevant elevation of her transaminases: AST 493 U/L, ALT 614 U/L.

MMI-induced toxic hepatitis (1), AIH, and viral hepatitis were all considered as possible diagnoses and we immediately suspended the MMI. Her transaminases remained stable but elevated in the 10 days following MMI suspension. We excluded the most common causes of viral hepatitis. Autoimmune screening tests showed a positivity of anti-LKM antibody with 1:80 titre. Smooth muscle antibodies were negative. Due to the lack of improvement of transaminases' values with the suspension of MMI and the positivity of anti-LKM antibody, we performed an echo-guided liver biopsy. The histological examination was suggestive of an AIH in the active phase.

We made the diagnosis of AIH using the revised scoring system for AIH diagnosis provided by the International Autoimmune Hepatitis Group (2). We re-started MMI and started therapy with prednisone and azathioprine. Transaminases were normalized after two weeks and thyroid function was normalized after one month.



## Conclusion:

AIH is a rare disease in pediatric age, however it is important to keep in mind that patients affected by autoimmune thyroiditis are at an increased risk to develop other autoimmune diseases. Therefore it must be considered in these cases.

MMI-induced hepatotoxicity should also be considered, even though MMI causes less serious liver damage when compared to propylthiouracil.

## References:

- (1) Cooper DS. Antithyroid drugs. N Engl J Med . 2005;352:905–917
- (2) Alvarez F, Berg PA, Bianchi FB, Bianchi L, Burroughs AK, Cancado EL, et al. International Autoimmune Hepatitis Group Report: review of criteria for diagnosis of autoimmune hepatitis. J Hepatol 1999;31:929–938.

Disclosure Statement: the authors declare that there are no conflicts of interest