

Increased serum activity of liver aminotransferases in young patients with Turner Syndrome

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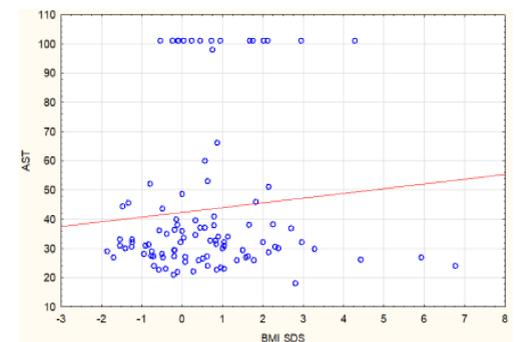
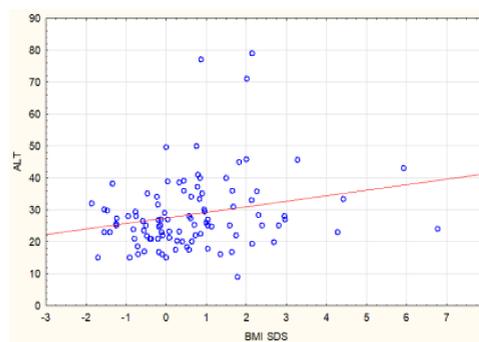
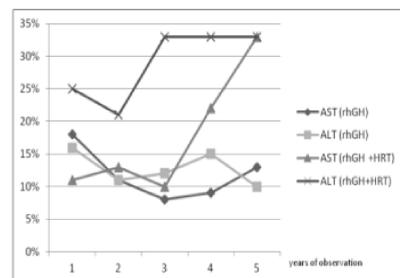
Objectives:

- According to some clinical studies, liver involvement seems to be frequent in TS patients with prevalence of liver test abnormalities from 20 to 80%.
- The hepatic histological changes reported in TS patients vary, including minimal abnormalities, steatosis, steatohepatitis, biliary involvement, nodular regenerative hyperplasia, and cirrhosis.
- The data regarding liver tests in children and adolescents with TS is lacking.

Methods:

- A cross-sectional review of liver function in 100 girls with TS (age range 4-16, the mean BMI SDS 0.63 [-1.86 -6.78]); 56 receiving rhGH therapy (9 obese, 47 normal weight), and 44 receiving rhGH therapy and estrogen or estrogen/progesterone replacement therapy (HRT) (8 obese).
- A longitudinal study included 81 patients (mean follow-up period: 3-5 years).
- The activity of aspartate aminotransferase (AST) and alanine aminotransferase (ALT) was measured.

Results:



- When compared to reference ranges, 34 % of patients demonstrated increased AST and ALT activity (32% without HRT, 36% on HRT), without a significant increase of the incidence ($p > 0.05$) in the subsequent years.
- Ultrasound examination revealed liver steatosis in 11% patients without HRT and in 9% of patients with HRT.
- During the follow-up period, no patient developed serious liver disease. There was no significant correlation between AST and BMI SDS ($R = 0.09; p > 0.05$), ALT and age ($R = 0.02, p > 0.05$), nor AST and age ($R = -0.01, p > 0.05$).
- Although there was a significant correlation between ALT and BMI SDS ($R = 0.23, p < 0.05$), the relative risk of increased ALT and AST activity was not higher in obese (OR 0.2; 95%CI 0.1-0.36, $p = 0.38$, and OR 0.16; 95%CI 0.08-0.3, $p = 0.1$ respectively).
- HRT did not increase the risk of higher ALT and AST activity (OR 0.8; 95%CI 0.5-1.2, $p = 0.37$, and OR 0.7; 95%CI 0.4-1.1, $p = 0.27$ respectively).

Conclusions:

- Obesity and HRT do not increase the relative risk of higher ALT and AST activity.
- Estrogen supplementation may have a beneficial effect on liver function in patients with TS.

References:

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