The status of blood antioxidant system in adult growth hormone deficient patients with childhood-onset GHD

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The antioxidant system is a universal indicator of metabolic balance and protects tissues from damaging oxidative processes. Growth hormone deficiency (GHD) is associated with a high risk of developing metabolic disorders.

The aim of the study was to examine the effects of an inadequate GH secretion on the markers of the blood antioxidant system in childhood onset adult GHD patients after conclusion and discontinuation of GH therapy.

The study included 10 adult patients (3 women) aged 18 to 26 years, median 23 years, with childhood onset confirmed GHD. All patients received GH therapy in childhood to achieve target height and subsequently discontinued GH therapy.

15 healthy adult volunteers were included in the control group.

The blood antioxidant system was examined using superoxide dismutase (SOD) and catalase activities; ceruloplasmin levels (CP); total antioxidant capacity (TAC) of plasma; non-protein thiol levels, and thiobarbituric acid reactive substances (TBARS) levels.

The present work demonstrates that:

- the blood antioxidant system parameters are impaired in childhood-onset GHD adults after treatment discontinuation
- which indicates oxidative stress development in the absence of therapy

Authors have nothing to disclose