Incidence of ALS deficiency in patients with growth hormone deficiency at tertiary pediatric endocrinology center

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The aim of this study is to assess the prevalence of ALS deficiency in a cohort of patients with GH deficiency (GHD) followed up at a tertiary University pediatric endocrinology center.

- Acid-labile subunit (ALS) is produced in the liver in response to growth hormone (GH)
- ALS forms a ternary complex with insulin-like growth factor I (IGF-I) and IGF binding protein-3 (IGFBP-3)
- ALS-deficient patients need specific therapeutic approach

The results show the prevalence of ALS deficiency in the current GH treated cohort and support the evidence that baseline investigation of ALS levels could be helpful in the differential diagnosis of growth disorders.

- ALS deficiency screening:
  - ALS levels range – 2.2 to 60 mg/L
  - Mean - 17.4 ± 8.7 mg/L

- Published mean ALS levels from subjects without short stature:
  - 24.2 ± 4.7 mg/L (2)
  - 20.3 ± 3.1 mg/L (3)

- Low ALS levels correspond with low SDSheight and low SDSIGF-1 before therapy

- AL SD levels range – 2.2 to 60 mg/L
- Mean - 17.4 ± 8.7 mg/L

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INTRODUCTION

• Acid-labile subunit (ALS) is produced in the liver in response to growth hormone (GH)
• ALS forms a ternary complex with insulin-like growth factor I (IGF-I) and IGF binding protein-3 (IGFBP-3)
• ALS-deficient patients need specific therapeutic approach

AIM

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METHOD

- 71 children (76% boys, age range 2-18 years)
- Diagnosed with GHD (auxology, 2 standard GH stimulation tests (max GH <10 ng/ml)
- Ongoing therapy with GH
- Collected blood serum samples were frozen at -80°C in 0.5 ml aliquots
- Standard ALS ELISA kit
- 11.6 ± 3.3 years – the mean age of the children at the time of collection of samples

REFERENCES

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