165 IMPACT OF BODY FAT ON CHANGES IN HEIGHT SD SCORE DURING GROWTH HORMONE TREATMENT

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The aim of this study was to investigate the occurrence of polymorphisms of the B2-adrenergic receptor gene in short children and to evaluate the possible influence of leptin on changes in height in response to GH treatment. Out of the 95 children enrolled in the study, 10 children completed leptin & IGF-1 measurements before and at 1,2,3,6,12 months of GH treatment. The genotype distribution of the B2 and 13-adrenergic receptor polymorphisms in the study population did not differ significantly from those reported in non-obese subjects. There were no significant differences in the SD score for height at any given time point between the group with and without the Trp64Arg mutation of the B2-adrenergic receptor gene. In relation to the Gly16Arg polymorphism of the B2-adrenergic receptor gene, the mean SD score for height increased from 2.0SD to 2.0SD significantly during one year of GH treatment in children with Arg16Arg and Gly16Arg. In those with Gly16Gly, the SD score did not show any significant increase during all 12 years of GH treatment. Serum leptin levels increased by 27.9% in children with Arg16Arg & Gly16Arg and by 13.8% with Gly16Gly during year. But there were no significant differences in IGF-1 levels at any given time point during 1 year between the group with and without the Gly16Arg mutation of the B2-adrenergic receptor gene. Thus, when the impact of the polymorphisms of these two receptor genes was studied simultaneously, it appeared that only the B2-adrenergic receptor polymorphism had an important role to play in modulating the regulation of growth rate and leptin influenced the growth rate during GH treatment in short children.

166 A CASE OF CONGENITAL LIPOID ADRENAL HYPERPLASIA WHOSE TESTES WERE DIFFICULT TO DETECT

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We report a case of genetic male with congenital lipoid adrenal hyperplasia (CLAH) whose tests were detected by MRI and laparoscopy at 25 years of age. Case Report: A 26 years old female with CLAH has been treated in our hospital since her birth. Her karyotype is 46,XY but her external genitalia are that of normal female. The uterus and ovary are not detectable by MRI and ultrasound, and the testes are impalpable. She is receiving replacement therapy with hydrocortisone, estrogen and progesterone. MRI and ultrasound was performed periodically in order to detect of testes, but not detected. Therefore laparoscopy was performed at 25 years old. The intrabdominal testis was not found but the structure like a spermatic cord was entering the internal ring. It suspected that the testis remain at inquinal region. After that, the structure like testis was detected at bilateral groin, so that bilateral orchietomy will be performed. Conclusion: For CLAH with 46,XY karyotype, detection of the testes and orchietomy are important, but, in case of impalpable testis, it is often difficult. In our case as well, the testis could not be detected by serial MRI and ultrasound, so that it was finally laparoscopy and MRI at 25 years old finally. In fact she does not know her true disease and karyotype because her parents hope that. Therefore the explanation of the examination worried us and it was late to perform examination.

167 A CASE REPORT: TREATMENT WITH ESTROGEN AND PROGESTERONE FOR EIGHT MONTHS FAILED TO DECREASE THE SIZE OF OVARIAN CYST IN 20-YEARS-OLD 46,XX PATIENT WITH STEROIDOGENIC ACUTE REGULATORY PROTEIN GENE (SAR) ABNORMALITY

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[Background] Female individuals with SAR abnormality were reported to have menstruation and subsequently develop ovarian cyst which may lead to torsion of ovary. Treatments with progesterone (P) with or without estrogen (E) were reported to reduce the size of ovarian cyst or prevent to develop ovarian cyst. [Aim] We reported a 46,XX patient with SAR abnormality in whom treatment with P and E for eight months failed to decrease the size of ovarian cyst. [Case] She was treated with hydrocortisone and fludrocortisone from 14 days of age. She had menarche at 11.3 years of age. Pelvic ultrasoundography and CT scan showed normal ovaries (at 48x46x42mm, it 36x30x38mm) at 12.3 years of age. Bilateral polycystic ovaries (cyst; below to 60mm) observed from 15.6 years of age. Right ovarian cyst was performed due to torsion at 18.9 years of age followed by treatment with P and E. Diameter of left ovary was 79x50x52mm (cyst; 42x31x35mm) two months later, and 94x63mm (cyst; 36x21mm) eight months later. Left LH level was 31.2 ~ 39.7 mIU/m and FSH level was 4.7 ~ 6.7 mIU/ml before treatment with P and E. Basal LH level was 9.5 ~ 21.5 mIU/ml and FSH level was 4.5 ~ 10.2 mIU/ml after treatment with P and E. [Conclusion] A 46,XX patient with SAR abnormality underwent right ovaryctomy due to torsion followed by treatment with P and E for eight months. However, left ovarian cyst was increased with the size.

168 A frameshift mutation and a familial deletion mutation of the DAX1 gene in patients with X-linked adrenal hypoplasia congenita

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Adrenal hypoplasia congenita (AHC) is a rare inherited disorder with estimated frequency of one per 12500 live births. Mutations in the gene encoding DAX1 cause X-linked AHC, which is associated with hypogonadotropic hypogonadism (HHG) as a characteristic phenotype. Here we report two cases of AHC in which we identified mutations in the DAX1 gene.

Case 1: 30-year-old male. No family history of adrenal insufficiency or hypogonadism. At the age of 8 years, he was admitted to our hospital for the evaluation of general pignmentation and diagnosed with adrenal insufficiency by the biochemical examinations of elevated plasma ACTH, subnormal level of cortisol and unresponsiveness to ACTH provocative test. He was begun on hydrocortisone and fludrocortisone treatment. At the age of 9 years, LH RH stimulation showed minimal rises in LH and FSH, while continuous stimulation test revealed an increase in their levels. Thereafter the diagnosis of HHG was made because of the absence of pubertal signs. Treatment with LURH or hCG/hMG gave no apparent improvement. Mutation identification with direct sequence method revealed 546-546delG which resulted in a stop codon at position 194. Case 2: 24-year-old male. Two brothers were diagnosed with AHC in infancy. At the age of 2 weeks, he was admitted to our hospital for failure to thrive and diagnosed with adrenal insufficiency by the biochemical markers. At the age of 13 years, the examinations were made because of the absence of pubertal signs, which revealed no increase in LH and FSH to single LURH stimulation and hyporesponsiveness to continuous stimulation test. hCG stimulation test increased the level of testosterone. He was diagnosed with HHG and given hCG/hMG administration with no apparent clinical improvement. For mutation identification, a deletion of the DAX1 gene was suggested because the exons of the gene were not amplified by PCR with appropriate primers. Discussion: In addition to the previously reported cases of the same mutation, these patients suggest the earlier onset of adrenal insufficiency with the deletion of the DAX1 gene. Concerning HHG, the LURH stimulation test showed a difference in its responses between two cases, however, clinical course of these patients was similar.