Two boys with 47,XY,YY karyotype, were referred to our department for mental retardation and morphological pituitary abnormalities as detected by MRI. Their hypothalamic-pituitary function was then duly investigated. 47XXY is one of the most common chromosome abnormalities. The clinical features of these patients are variable and can be subtle. Patients are usually tall and thin and may have delayed speech, decreased IQ, hyperactivity, learning disabilities and central nervous system alterations including morphological abnormalities of the ventricles, corpus callosum and cerebellum. However, abnormalities of the pituitary gland have never before been described as being part of this syndrome. Patient 1 was referred to us at the age of 12.3 years. His stature (155 cm) was normal for his age while his BMI (26) was slightly elevated. Physical examination revealed convergent strabismus of the left eye, malocclusion, and long, thin fingers. Genitalia was prepuberal in accordance with chronological age. Patient 2, referred to our department at 16 yrs of age, was tall (180 cm) and obese (BMI 29). Physical examination did not reveal any features of the syndrome. He had nearly completed puberty. A MRI of the brain revealed pituitary hypoplasia and horizontal clivus in Patient 1 and a micro adenoma of the pituitary gland with left deviation of the pituitary stalk in Patient 2. Endocrinological investigation before and after pharmacological stimulation tests showed normal pituitary function in both patients. In both patients global IQ was low (51 and 63 respectively), with greater impairment in verbal abilities and attention span. Neither demonstrated inappropriate behavior or temper tantrums. Although the presence of morphological pituitary abnormalities in these 2 patients might merely be a coincidence, we suggest that MRI of the pituitary gland be included in the assessment of brain abnormalities of males with XYY karyotype.

It is well known that manifestations of one endocrine syndrome can alter in the presence of another endocrine abnormality. Little is known however, of phenotypic expressions of an individual presenting with the simultaneous occurrence of two defined hypogonadal syndromes. The situation becomes more complex with syndromes such as PAIS where there is no defined phenotype. We report here a family where affected men with PAIS had hypospadias and variable degrees of virilisation. The details of the phenotype and the hormonal parameters of the family are given in the table below.

The genetic analysis for these two revealed mutations in the third exon of the androgen receptor gene Ala596Thr. The one who was strikingly dissimilar in comparison to others in terms of a more virilised phenotype was also found to have a heterozygous mutation in the fourth exon of the 5 alpha reductase gene Gly596Ser. We tried to correlate the phenotype of this patient with the known molecular characterstics of the two mutations and our present understanding of androgen metabolism in situations of enzyme deficiencies and androgen receptor defects. A decrease in the 5 alpha reductase activity (due to a heterozygous defect in the 5 alpha reductase gene) would have resulted in increased concentrations of androgen precursors(Androstenedione in particular) and a hypothetical increase in intranuclear precursor bound AR. Given the ability of the Ala596Thr mutant to dimerise with DNA promoters with multiple androgen response elements, it is possible that interaction of androgen precursor bound AR with its response element in a promoter could have stabilised the dimeric interaction of AR 596 mutant to DNA in the same promoter.

In conclusion, this was a rare case of an association of Androgen Resistance and a heterozygous 5 alpha reductase deficiency. The unexpected virilisation in this patient possibly gives new dimensions to the role of steroid precursors and their interaction with Androgen Receptor in sex differentiation and virilisation.

<table>
<thead>
<tr>
<th>Prognosis</th>
<th>Age (yrs)</th>
<th>Body Mass</th>
<th>Hypospadias</th>
<th>LH (U/L)</th>
<th>FSH (IU/L)</th>
<th>T (ng/dL)</th>
<th>DHT (ng/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.1</td>
<td>A1 B1P4</td>
<td>1</td>
<td>Penoscrotal</td>
<td>2.3</td>
<td>2.6</td>
<td>325</td>
</tr>
<tr>
<td>2</td>
<td>31</td>
<td>A2 B1P4</td>
<td>10</td>
<td>Min</td>
<td>33</td>
<td>73</td>
<td>235</td>
</tr>
<tr>
<td>3</td>
<td>24</td>
<td>A3 B1P5</td>
<td>Ret116</td>
<td>Normal</td>
<td>20</td>
<td>21</td>
<td>620</td>
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<tr>
<td>4</td>
<td>41</td>
<td>Not examin ed</td>
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<td>Not exam ined</td>
<td>38</td>
<td>57</td>
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</tr>
<tr>
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<td>19</td>
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<td>Ret14 L35</td>
<td>Perinoscrotal</td>
<td>11</td>
<td>30</td>
<td>235</td>
</tr>
</tbody>
</table>

Congenital adrenal hyperplasia (CAH) is a disease that causes increased androgenic hormone levels during the fetal period. This exposition has raised the hypothesis of a possible influence of such hormones on the subject’s identity and the corresponding behavior of the individual regarding sexual orientation. The objective of the present study is to analyze if there are changes in the development of those patients and the way such changes can interfere with their life. This is a qualitative study regarding possible changes in the CAH patients with and without CAH. Differences in certain aspects have been identified concerning the patients’ behavior, their aggressiveness, sexual identity and orientation, their social interaction, considering that in certain situations the differences have been more easily identified than others, especially when the two groups have been compared. The psychological changes observed in the CAH patients have a great impact on the future of these patients and the therapeutic approach must take this into account.
as the basis of gender and of social and societal definitions of what is normal as it is predicated on modern, Western concepts of gender dimorphism, of sex disorders of sexual development must be seen in a particular cultural context, non-Western cultures. These include the thesis that medical treatment of such studies may illuminate the meaning and function of intersexuality in third gender roles, and explain them within their cultural context. Furthermore, transformed as a result of the influences of Western culture. Retrospective institutionalized third or fourth sex/gender categories have disappeared or were 3. The level of sperm antibodies was normal in all. The oligospermia was found in two (the gypoandrogenemia was found at him); aspermia in one; oligoasthenozoospermia in 40; true azoospermia in two; asthenozoospermia in 15; oligoasthenozoospermia in 11. The leukospermia was found in 9. The level of sperm antibodies was normal in all. The conclusions: 1. The level of gonadotropin was normal in all patients; 2. The gypoandrogenemia was found in tow; 3. The patospermia was found in 2/3 cases; 4. The level of sperm antibodies was normal in all.

R-62 Read by Title
Gonadotropin and testosterone levels with semen quality in patients operated upon for unilateral cryptorchidism

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Ludmyla Sedova2; Andy Averyanov2
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Background: The study of fertility and endocrinological findings in men with a history of orchiopexy for surgical correction of unilateral cryptorchidism is important. The study was financed of the grant of Russia President MD -8267.2006.7.

Methods: The clinical series included 60 men from 16 to 34 (the mean age 21.7 s = 3.8) who were operated from 1988 to 1994. The mean age of surgery – 6,5 years (s=1,39). On the left side the orchiopexy was realized in 39 cases (65%), on the right side in 21 (35%). Physical examination, collection of complaints, the serum level of testosterone, the prolactin, the follicle-stimulating hormone (FSH) and the lutein (LH) was investigated by the immunoenzyme analysis, the level of sperm antibodies (ELISA-test), and sperm quality was investigated.

Results: The erectile dysfunction recognized in one case. Two patients had lower serum level of testosterone. A serum level of the prolactin, FSH, LH was normal in all. The oligospermia was found in two (the gypoandrogenemia was found at him); aspermia in one; oligoasthenozoospermia in 40; true azoospermia in two; asthenozoospermia in 15; oligoasthenozoospermia in 11. The leukospermia was found in 9. The level of sperm antibodies was normal in all.

Conclusions: 1. The level of gonadotropin was normal in all patients; 2. The gypoandrogenemia was found in tow; 3. The patospermia was found in 2/3 cases; 4. The level of sperm antibodies was normal in all.
A part of the Georgian population lives in the iodine-deficient Caucasus mountain region of Kachetia, where the use of iodized table salt was introduced in 1997. We examined frequency and extent of enlargement of the thyroid gland in school children and adolescents in this region, as well as their growth and pubertal development.

In a total of five villages 451 school children and adolescents (199 boys and 252 girls aged 8-16 years) were examined. The thyroid gland was examined by palpation and its size categorized according to the WHO goiter classification. Body height and weight were recorded. Height SDS, weight SDS and BMI were calculated, pubertal development assessed according to Tanner stages, and age at menarche and age at testicle volume 4 ml recorded. Body height and weight were recorded. Height SDS, weight SDS and BMI were calculated, pubertal development assessed according to Tanner stages, and age at menarche and age at testicle volume 4 ml recorded. In boys, height SDS was -0.14±0.79. In boys, height SDS was -0.31±0.79 and weight SDS -0.14±0.79. In boys, height SDS was -0.31±0.79 and weight SDS -0.14±0.79. Height deficit was most pronounced in the age group 13-16 years.

The mean age for reaching testicle volume 4 ml was 11.08±1.09 years (range 9.35-13.78).

Mean age of menarche was 12.67±1.15 years (range 9.63-15.7). The mean age for reaching testicle volume 4 ml was 11.08±1.09 years (range 9.35-13.78).

Mean age at menarche was 12.67±1.15 years (range 9.63-15.7).

In summary, thyroid gland enlargement has decreased by iodine substitution, growth retardation is still visible, but pubertal development occurs in the normal range.

**Results:**

- **Mean follow-up duration:** 4.6 years.
- **Euthyroid HT patients:** 22 (59.9%), 2 children with initial hyperthyroid, mean follow up duration 4.6 months, and 1 child remained euthyroid for at least 23 months. The family history of thyroid disease positive at 16 children (37.1%), 12 of them - hypothyroidism. (71.4%). Associated with other autoimmune disease had a 4 patients (9.3%)..
- **No parasites desesses, or alopecia found.**

**Conclusions:**

- HT is fifth times common in females than males. The common complaints leading to referral were goiter, it accounted for significantly more referrals in females. A positive family history of autoimmune thyroid disease is associated with a higher risk of hypothyroidism. Hypothyroid patients may occur in higher percentage of children and adolescents than previously reported.

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**Horm Res 2007;68(suppl 1): 1-282**

255
dose than it is currently recommended. Obesity may be the consequence of long duration of ATD therapy. Surgery was successful, but radioactive iodine may become more convenient definitive treatment in near future.

R-68 Read by Title
Pituitary dysfunction due to an adenoma secondary to chronic unrecognized hypothyroidism
Elena Paisichini; Laura Travan; Stefania Bassanese; Giorgio Tonini; Burlo Garofolo Trieste, Dept. of Pediatric, Trieste, Italy

Chronic hypothyroidism develops pituitary TSH adenoma, compressing surrounding cells. After l-thyroxine, regression of adenoma avoids neurosurgery, but pituitary function can remain impaired.

We studied two severe hypothyroid patients: a male (M) 13 yrs, a female (F) 12yrs, before and after l-thyroxine treatment during a prolonged follow-up. 

M: impaired growth, weight increase -2 years bone age, tests volume >4 ml. F: severe growth retardation, -5 years bone age.

M+F: Low FT4 and FT3, elevated GH secretion (GH peak M=2.2 F=4 ng/ml low IGF-1 M: 59, 1 F:59-29 ng/ml), normal ACTH, FSH and LH, increased PRL. Large adenoma compressing also optic chiasma.

After six months of l-thyroxine: normal thyroid hormones, TSH and PRL completely normalized, GH secretion almost normal in M, slightly reduced GH and IGF-1 in F.

M: slow catch-up growth and pubertal progression, so we repeated pituitary NMR without adenoma evidence. Puberty and catch-up growth were completed six years later, not in accordance with parents development.

F: improvement of stature for one year, then poor therapy compliance and reduction of growth velocity. No evidence of adenoma recurrence after NMR. Treatment optimization without growth increase, in spite of the pubertal progression in the following two years. GH secretion retested, confirmed the defect 8.25 ng/ml, low IGF-1 (273 ng/ml v.a. 288-756) After rhGH therapy, growth velocity rapidly increased.

The adenoma secondary to prolonged GH deficiency affects pituitary secretion: GH, and Gn. The damage, transitory or persistent, depends on the prolonged pituitary compression, severity and duration of the hypothyroidism.

After a chronic hypothyroidism we recommend a pituitary NMR, if positive for adenoma, it is necessary to test pituitary function, especially GH secretion, and to repeat the evaluation if the growth or the pubertal progression are not satisfactory, also after adenoma regression.

R-69 Read by Title
Evaluation of Hashimoto thyroiditis in children and adolescents
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Background: Hashimoto thyroiditis (HT) is common cause of goiter and hypothyroidism in children and adolescents. Spontaneous remission may occur in 10-50% patients, but development of hypothyroidism is possible.

Objective: To investigate the clinical manifestations and presentations, clinical course and long-term outcome of HT in children, patients of Endocrinology departments.

Subjects and methods: We revisited charts of 43 HT children (F=36, M=7), diagnosed at present or two more cases, with mean age 12.3 years, mean follow-up duration 4.6 years.

Results: HT is common in females than males (5F/1M). The common complaints leading to referral were goiter, in 19 children (44,3%), either isolated in 15 (34,4%) or associated with other complaints in 4 children. Other complaints HT: anaemia in 8 (18,5%), fatigue in 5 (11,8%), increased appetite in 4 (9,7%) weight gain in 3 (7,0%) growth retardation in 2 children, (4,7%) and irregular menses in 3 pubertal girl. The prevalence of goiter it accounted for significantly more referrals in females. A positive family history of autoimmune thyroid disease is associated with a higher risk of hypothyroidism. Hypothyroid patients may occur in higher percentage of children and adolescents than previously reported.

R-70 Read by Title
Effects of growth hormone replacement therapy on hypothalamic-hypophyseal-thyroid axis in growth hormone deficient children
Adriana Silveira-Miachon; Angela Spinola-Castro; Erika Kitahara; Patricia Toste-Hernandez; Fabiola Garcia; Marcia Pereira UNIFESP/EPM, Pediatrics, Sao Paulo, Brazil

Changes in thyroid hormone levels may occur during growth hormone (GH) replacement therapy, even in those children considered euthyroidian at baseline. Our goal was to evaluate effects of GH therapy on thyroid function in GH deficient patients. 40 GH deficient children, 9/40 (22.5%) secondary to abnormalities in hypothalamic-hypophyseal region, mean age 10.3 ± 2.8 yrs, comprising 30 boys and 9 pubertal.

FT4 and TSH levels were determined at baseline and after a mean of 1.1 ± 0.5 yr of GH replacement therapy at a mean dose of 0.1 IU/kg/day. TSH levels < 6.0 IU/L and FT4 > 0.6 ng/dL were considered within the normal range. 33/40 subjects (82.5% — group A) were euthyroidian at baseline and 7/40 (17.5% — group B) were previously diagnosed as central hypothyroidism. 

After a mean of 7.6 yrs of GH replacement therapy, there were no changes in TSH levels in both groups during follow-up. Thyroid antibodies were negative in all patients. GH replacement therapy may decrease FT4 levels with no apparent changes in TSH levels. Few patients previously euthyroidian required sodium levothyroxine therapy, because of FT4 levels. Only the patient who presented with FT4 levels above the normal range at baseline (group B) required medication adjustments during therapy. There were no changes in TSH levels in both groups during follow-up. Thyroid antibodies were negative in all patients. GH replacement therapy may decrease FT4 levels with no apparent changes in TSH levels. Few patients previously euthyroidian required sodium levothyroxine therapy during GH replacement. Furthermore, exogenous GH did not exacerbate central hypothyroidism previously diagnosed in our study population. In conclusion, GH might influence thyroid function, but the mechanisms are not quite clear yet. Patients under GH replacement must be monitored closely in order to diagnose and treat thyroid dysfunction.

R-71 Read by Title
Resistance to thyroid hormone (RTH) detected by TSH at neonatal screening
Mirta Silver; Carmen Rivolta; Adriana Oneto; Gustavo Maccallini; Giancarlo Garza Arias; Claudio Aranda; Hector Targovnik
1Hospital Durand, Division Endocrinologia, Buenos Aires, Argentina; 2Facultad de Farmacia y Bioquimica, UBA, Cátedra de Genética y Biologia Molecular, Buenos Aires, Argentina; 3Hospital Durand, Laboratorio de Pesquisa Neonatal, Buenos Aires, Argentina; 4Hospital Durand, División Endocrinología, Buenos Aires, Argentina

RTH is an inherited disorder of reduced responsiveness of the target tissues to thyroid hormone (TH), usually suspected when elevated TH are associated with non suppressed TSH. Basal TSH levels are normal or slightly increased, and, because routine screening programs are based on the determination of TSH, are not appropriate for identified RTH (Refetoff, 2004). We present a newborn with RTH detected by TSH screening and the most likely mechanism to explain the early detection. A 12-day-old boy delivery by caesarean section at term after an uneventful pregnancy was referred due to borderline 72hs blood spot TSH level at screening (9.2 µIU/ml). He was breast fed and the
mother was disinfected daily with povidone iodine. On physical examination not signs of hypothyroidism were found. Serum TSH value was elevated (101 µU/ml), FT4 was normal (1.31 ng/dl) and Tg was markedly elevated (1.200 ng/ml) at 12 days of age. Both knee epiphyses were visualized on X-Ray. Thyroid ultrasound revealed a diffuse enlargement of the gland and a 99Tc scintigraphy confirmed this finding. Treatment with 25 ug of L-T4 was initiated but discontinued after three months, owing to significantly elevated FT4. After one month without treatment, FT4 was elevated (4.42 ng/dl) with non suppressed TSH (6.6 µU/ml).TRH/TSH test was still normal and higher respondent (33.7 µU/ml) despite high FT4 levels. RTH was confirmed by detection of a heterozygous mutation (P453T) in the thyroid hormone receptor-β (TR-β) gene.

We conclude that in this infant the increased iodine load during the neonatal period impaired the ability of the thyroid gland to supply adequate amounts of TH allowing the early unusually detection of RTH at screening.

**R-72 Read by Title**

**Influence of problems related to body perception on self-esteem (S.E.) development in girls affected by Turner syndrome (TS)**

*Maria Jole Colombini*; *Paola Sgaramella*; *Claudia Bischi*

Ilaria Colombo; Marco Pitea; Tullia Mastropietro; Gianni Russo

*Vita-Salute University - S. Raffaele, Pediatrics - Endocrine Unit, Milan, Italy;* *Scientific Institute S. Raffaele, Pediatric Department-Endocrine Unit, Milan, Italy;* *Vita-Salute University, Pediatrics-Endocrine Unit, Milan, Italy*

Self-esteem and body perception are significantly related during the puberal age. According to our clinical approach these issues can be altered in girls affected by TS. The aim of the study was to investigate in TS young patients’ self-esteem, to verify its relationship with body perception and if it changes according to their growth.

**Sample:** 10 girls affected by TS (aged 10 - 18 years, mean 13.9) Questionnaire TMA was given to patients regularly followed up in our outpatient Centre. TMA valuates self-esteem collecting scorings in fields, such as body perception, emotions, school achievement, relationships in family and external environment, personal skills.

Data were gathered taking into consideration subgroups A: 5 pts aged 10-14 and B: 5 pts aged 15-18; besides, scorings of body perception were regrouped (C: 5 pts having lower scorings, D: 5 pts higher).

**Results:** showed 1. global self-esteem : 91 (normal population range 85-115),

2. self-esteem improving in older girls TS (A 82.4 vs B 103.4), 3. a high connection between self-esteem and body perception (C 80.4 vs 83.2, D 105.4 vs 99.2).

**Conclusions and discussion:** Our data show that the patients’ self-esteem, placed on range of normal population, is mainly influenced by perception of the body and, accordingly, by the interpersonal relationships during the puberal age. It seems that a positive perception of the physical appearance could indirectly influence the coping of daily-life tasks of TS girls. These findings, resulting from a little sample, suggest the extention of this study so as to get more information.

**R-73 Read by Title**

**Turner syndrome (TS) and neoplasms: three new cases**

*Rosalba Bergamaschi*; *Laura Mazzanti*; *Emanuela Scarrano*;

Laura Castiglioni; Federica Tamburrino; Milva Bal; Alessandra Cassio; Davide Tassinari; Alessandro Cicognani

Department of Pediatrics, S. Orsola-Malpighi Hospital, University of Bologna, Bologna, Italy

TS pts have increased morbidity but the risk of cancer does not seem to be increased. 173 pts were followed for a mean of 6 yrs. GH therapy in 124 pts.

**Case 1:** 46,XXp-/46,Xi(Xq)/47,Xi(Xq)i(Xq). Horseshoe kidneys, not visible ovaries, no CHD. Amenorrhea treated with EP. At 35 yrs of age abdomen echography showed mass in the left kidney. After surgical resection: chromophobe cell renal carcinoma confined to the kidney.

**Case 2:** 46,Xi(Xq). Horseshoes kidneys, not visible ovaries, no CHD. Amenorrhea treated with EP. At 22 yrs of age abdomen echography showed mass in retroperitoneal region, at MRI follow-up progressive increase. After laparoscopy: neurofibroma S100+, focal neurofilament positivity. At aortic angiography: dislocation of bowel, kidneys, aorta, cava. Surgical resection of 70% and confirmed diagnosis.

**Case 3:** 45,X. Normal kidneys, not visible ovaries, no CHD. GH for 7 yrs. At 21 yrs thyroid nodule. Needle aspiration biopsy: papillary thyroid carcinoma. Total thyroidectomy confirmed this diagnosis.

**Conclusion:** The risk of cancer in TS, except cancer of the bowel and gonadoblastoma in pts with Y sequences, does not seem to be increased. In our pts the prevalence of neoplasms is 1.7%. No family history of malignancies. No report of renal cancer in TS, although neural cell neoplasms have been noted in association with TS.

The long-term effects of GH in non-GH deficient pts are not fully known. Recent studies suggest a relationship between IGF-1 axis and neoplasms with an unclear mechanism.

**R-74 Read by Title**

**Hereditary form of partial X chromosome monosomy**

*Eva Stierkorn*; *Thomas Martin*; *Tilmann Rohrer*

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Turner Syndrome is a chromosomal disorder characterized by short stature, gonadal dysgenesis and somatic stigmata. Cases of partial X chromosome monosomy with milder turner syndrome characteristics were reported. A 3 years old girl was presented to us due to short stature. Her height was -1.97 SDS. Physical examination revealed cubitus valgus, Madelung deformity and high palate. Karyotype examination showed a partial monosomy of one X chromosome (46,X, del(X) (p21)). Her mother had the same genotype. She had a normal pubertal development. Her first daughters karyotype was 46,XX. Ultrasonographic examination of our patient showed normal kidneys, thyroid and infantele uterus tissue. A GH therapy was started at the age of 4 years in a dosage of 0.05 mg/kg/day. The therapy was well tolerated. 3 years later height was -0.57 SDS. Balanced deletion of the short arm of an X chromosome can result in mild Turner syndrome characteristics with a normal spontaneous pubertal development and fertility.
Bilateral galactocele in a male infant: a case report and review of the literature

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Temporary breast enlargement may be seen in normal newborn and adolescent boys. Cysts of breast are uncommon in childhood. Galactocele, defined as an encysted collection of milk products, is an extremely rare cause of breast enlargement in infants and children. We, here, reported an infant with bilateral galactocele who is otherwise healthy, and we also reviewed the literature.

The prevalence of hirsutism among girls at pubertal age from Sofia

Antoaneta Kostova; Alexander Kurtev; Diana Vlahova
University Pediatric Hospital Sofia, Pediatric Endocrinology, Sofia, Bulgaria

The hirsutism in adolescent girls represents a serious problem because of the underlying heterogenic aetiology, the risk from concomitant metabolic and reproductive disturbances, and its underestimation by the public opinion. The aim of the present study is to establish the prevalence and the onset of clinical manifestation of hirsutism among girls at pubertal age.

Materials and methods: Six hundred and thirty girls from seven schools in Sofia were included in the study, from 11 to 18 years of age, mean age 14.82 ± 2.37 years. The stage of pubertal development according to Tanner and the score of hirsutism according to Ferriman and Gallwey scale was assessed in all of them.

Results: The vast majority of the investigated girls [65%, n = 409] were with completed pubertal development [4-5 Tanner stage ], and in the remaining 35% the pubertal development was in 2-4 stage.

In 45 from 630 girls [7.1%], mean age 15.25 ± 1.14 years, increased amount of hairs was established with a score above 8 according to Ferrimann and Gallwey. Only three of them [6.6 %] were with uncompleted pubertal development. In all girls the hirsutism was moderately expressed [<5].

Conclusions: Hirsutism is a common disorder in girls at pubertal age, sometimes starting from its early stages. It necessitates thorough investigations and follow-up, because in a number of cases hirsutism represents the first manifestation of disorders such as nonclassical congenital adrenal hyperplasia or polycystic ovary syndrome.

Comparing of ultrasound-based bone age with X-ray-based GP bone age

Li Liu1; Xiu Zhen Li1; Hong Sheng Liu2; Li Ping Fan1; Shao Mei Lu1
1Guangzhou Children Hospital, Endocrinology and Metabolism, Guangzhou, China; 2Guangzhou Children Hospital, Radiology, Guangzhou, China

Background: Bone age is important in evaluation of child growth and maturation. X-ray-based film to tell bone age was used for a long time. Due to X-rays radiation damage X-ray-based bone age can not been tested in a short period time. But ultrasound-based bone age can overcome this disadvantage. In order to see if the bone age is different between of this two method, a group of children were tested.

Object: 35 children were involved, 26 girls, 9 boys, aged 5.3 to 17 years (mean 10.2+/−2.3 years).

Method: All children were tested left hand for bone age by Sunlight BoneAge Measurement Device (ultrasound-based) for two times at same time. 33 of them were taken left hand and wrist X-ray film for GP method bone age at same day. X-ray-based bone age was read by an experiential radiologist and two endocrinologist. Bone age of two methods was compared.

Results:

<table>
<thead>
<tr>
<th>Repeated ultrasound-based bone age in 35 children</th>
<th>First time</th>
<th>Second time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasound-based bone age (y)</td>
<td>9.9+/-3.3</td>
<td>9.9+/-3.4*</td>
</tr>
</tbody>
</table>

* Compare with first time, P>0.05

Bone age in 33 children

<table>
<thead>
<tr>
<th>Age (y)</th>
<th>X-ray-based bone age (y)</th>
<th>Ultrasound-based bone age (y)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.2+/−2.3</td>
<td>10.4+/−3.1**</td>
</tr>
</tbody>
</table>

**Compare with X-ray-based bone age, P<0.01

Conclusions: Repeatability of ultrasound-based bone age was well, but ultrasound-based bone age was significant difference with X-ray-based bone age. Ultrasound-based bone age as a method to estimate child growth and maturation still needs to do a lot of study.

Abstract Withdrawn

Abstract Withdrawn

Abstract Withdrawn