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EFFECTS OF THYROID HORMONE ON GROWTH HORMONE RECEPTOR (GHR) AND IGF-i EXPRESSION. T. Salazar, H. Domené, Y. Yu, J. Sztein, S. Humphreys, and F. Cassorla. DEB, NICHD, Bethesda, Maryland, USA.

Hypothyroidism induces growth retardation and decreases the circulating concentrations of GH and IGF-I. To study the effects of thyroid hormone on GHR and IGF-I expression, we measured rat liver and kidney GHR and IGF-I mRNA levels by solution hybridization RNase protection assay. Three to six 21 day-old castrated male rats per group were given either pure water or 0.025% methimazole in their drinking water, and subcutaneous pellet containing either placebo or thyroxine (T4) 2.5 mg. After 13 days, the animals were sacrificed. Serum free T4 and IGF-I levels were determined by RIA. Liver and kidney GHR and IGF-I,mRNA were measured by solution hybridization using specific antisense riboprobes. Protected bands corresponding to GHR and IGF-I mRNA were quantified using a Phosphorlmager.

	width	Free T4	LIVER IGF-I	LIVER GHR mRNA	KIDNEY GHR mRNA	KIDNEY GHR mRNA
	(mm)	(ng/dl)	(ng/ml)	(%)	(%)	(%)
C	0.37±0.01	0.57±0.05	727±137	100±7	100±8	100±7	100±14
H	0.30±0.02*	< 0.10**	343±125	137±2*	61±4*	79±5*	93±11
T	0.38±0.01	0.56±0.02	756±170	130±11*	101±11	97±12	130±53

C:control H:methimazole T:methimazole + T4, *p<0.05. **p<0.01

Hypothyroid rats grew slower than controls. IGF-I mRNA levels were reduced in liver but not in kidney, and were normalized after thyroxine treatment. GH receptor mRNA levels were increased in liver of rats receiving methimazole, and were decreased in the kidney of hypothyroid rats. These findings suggest that the reduction in IGF-I synthesis observed in hypothyroid rats is not mediated though a decrease in liver GH receptor expression.

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HYPOTHYROIDISM NEONATAL SCREENING IN CORD BLOOD: EVALUATION OF 2 TSH ASSAYS. LP. Gruñeiro, L. Bernal,A. Chiesa, MG. Ropelato, C. Bergadá. Fundación de Endocrinología Infantil. Hosp. Ricardo Gutiérrez, División Endocrino. Buenos Aires, Argentina.

Cord blood neonatal screening for congenital hypothyroidism was carried out from October 1991 to December 1992 in Maternidad Ramón Sardá. It has been determined by TSH RIA. A total of 7365 dried blood samples from newborns were tested. Two hypothyroids (incidence 1:3682)and 2 transient hypothyroids(incidence 1: 3682) and 6 false positives (with TSH between 30 and 50 uU/ml) were detected.The recall rate was 0.14%versus 0.04%that is the rate we have in our screening after 48 hs of life. In order to decrease the recall rate in cord blood 76 samples from newborns were tested in parallel with RIA (DPC) and IRMA (ICN). The interassay coefficients of variation of RIA and IRMA were 20% and 5%, with a detection limit of 25 uU/ml and 2.5 uU/ml respectively. Distribution of TSH concentration (uU/ml) determined by RIA and IRMA was a follows:

	MEDIAN	CONFIDENCE INTERVAL 99%	V.MINIMUM	V.MAXIMUM
RIA	10.85	9.84 - 12	0.33	25.6
IRMA	3.58	3.47 - 5.83	0.35	22.4

RIA results were lower than IRMA(p< 0.001)(Wilcoxon's test). No correlation was found between the 2 mothods (r:0.13 Spearman rank). We suggest that IRMA neonatal assay represents a true alternative to RIA and has better sensitivity and specificity for cord blood samples allowing to decrease false positive results.

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BIOSYNTHETIC HUMAN GROWTH HORMONE (bGH) AND PREDNISONE (PD) COMBINED THERAPY FOR HYPERINSULINEMIC HYPOGLICEMIA (HH) DUE TO ISLET CELL DISMATURITY (ICD). G. Simoni, CN. Demeterco, S. Nesi,JE. Carreiro, J. Ramires, L. De Lacerda and R. Sandrini. Division of Endocrinology, Dept. Ped., UFPR, Curitiba - Brazil.

Hypoglycemia in children carries high risk of CNS lesions. Early recognition and adequate therapy are mandatory. We report our experience with bGH and PD in 3 children with severe HH due to ICD. Case 1, a 13 months-old white boy with severe hypoglicemic sindrome since the age of 11 months, presented neuroglycopenic signs, marked muscular hypotonia and 2 episodes of loss of conscience. Full description of the case has already been published (Acta Pediatr Suppl 388:121-5,1993).Case 2, a 70 days white girl, had a seizure at 50 days of life; physical findings were unremarkable. Patient 3 was a white boy with one day age, who was in hypoglycemic coma from 12 to 17 hours of age.HH was documented in each patient. GH,cortisol,T3,T4,TSH, blood chemistry and immageologic studies were normal. EEG was deeply altered in case 3. Case 1, although having persistent neuroglycopenic symptoms had normal EEG. Patients received bGH (0.16-0.4 IU/Kg) and PD(10 mg/m2) on a daily basis. Patient 3 required the highest dose of GH but recovered neither consciousness nor normal glycemia. He died at the age of 47 days during status epilepticus. Cases 1 and 2 have been on therapy for 37 and 12 months respectively with normalization of blood glucose; however serum insulin has kept persistently high. Patient 1 has had normalization of neurological disturbances. Surgery and diazoxide have been the commonest therapeutical approach in children with HH.bGH and PD open a new perspective in handing these cases.

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FINAL HEIGHT (FH) AFTER LONG TERM TREATMENT WITH TESTOSTERONE IN PATIENTS WITH CONSTITUTIONAL DELAY OF GROWTH AND PUBERTY (CDGP). (CDGP). I. Bergadá ; C. Bergadá. Hospital de Niños R. Gutiérrez, División de Endocrinología, Buenos Aires, Argentina.

It is well known that most of the adolescents with CDGP reach a final height (FH) similar or slightly less than their target height (TH). In the present study we have evaluated the effect on FH of long term treatment with testosterone in 12 patients with CDGP. All patients received monthly injections of testosterone enantate (33-50 mg/month) during 26 ± 7.2 months. The chronological age at the onset was 14.85 ± 0.5 years of age with a SDS of height of -3.1 ± 0.8. There were not significant differences between adult height prediction according to the method of Tanner (165.7 ± 7.3) and Bayley Pinneau (170.6 ± 7.6). Growth pattern and sexual development were followed up to FH (gv < lcm/yr or bone age > 17 yrs.) Patients reached a FH of 167.1 ± 7.2 without significant differences with TH (170.1 ± 5.7) nor with previous final height predictions. In summary, patients with CDGP treated with long term period of testosterone reached an FH according to the prediction by Tanner and slightly lower than the method of Bayley Pinneau which was similar to their TH.

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BONE MINERALIZATION OF SCHOOL AGE FEMALES WITH CELIAC DISEASE. S. Muzzo, L. Leiva, F. Larrain, G. Rios, C. Bergenfried, J. Wenger and R. Burrows. INTA, University of Chile and Gastroenterology Departments of the Roberto del Rio, Calvo Mackenna and Exequiel González Cortes Hospital, Santaigo, Chile.

Celiac disease is a chronic illness that produces malabsortion, which can induce important undernutrition and alterations in calcium metabolism. We were interested in bone mineralization (BM) in celiac patients, with adequate compliance of dietetic treatment, at least during the last year. In 14 female celiacs an evaluation was carried out of the characteristics at birth, at the time of the diagnosis and at the start of this study. BM was measured in the whole body, spine and hip (trocanter, Ward' triangle and femoral neck) with a double isotopic densitometer (Norland). Results were compared with those obtained in 66 normal school age females of the same age. It was found that celiacs had less birth weight and lenght, less weight/age adequation and less body weight than controls. % of adequation of BM of whole body was significantly less than controls either in total bone mass as well as in bone mineral density (79.7 ± 19.6 vs 100.2 ± 18.3 and 91.7 ± 9.0 vs 100.3 ± 1.1% respectively), inspine (85.4 ± 20.5 vs 100.0 ± 19.3 and 75.7 ± 12.1 vs 100.0 ± 16.4% respectively) only in total bone mas in thochanter (73.5 ± 27.7 vs 100.0 ± 34.9), without differences in Ward's triangle and femoral neck. These results show the impact of celiac disease upon BM and consequently the risk of developing osteoposis during adult life.

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BONE MINERALIZATION IN PATIENTS WITH TURNER SYNDROME. M. Burgueño, R. Burrows, L. Leiva, A. Jara, A. Lema, R. Lillo and S. Muzzo, INTA, Universidad de Chile, Hospital Roberto del Rio, Hospital J.J. Aguirre. Santiago, Chile.

Turner Syndrome (TS) is associated with multiple malformations and skeletal abnormalities, including an alteration in bone mineralization (BM), present since infancy. We were interested in evaluating the current state of BM in TS patients. 30 patients (6 8/12 - 17 3/12 years) with cariotype certification of TS were studied. Antropometric characteristic were evaluated at birth and at the time of the study. In all of them, BM of whole body, spine and hip (femoral neck, trocanter and Ward's triangle) was performed using adual photon isotopic densitometer (Norland). They were compared with 93 normal girls of same ages. TS patients had lower weight and height at birth, a lower H/A and higher W/H adequation than controls, with significant difference. The percentage of adequations of BM of whole body in total bone mass (TBM) and bone mineral density (BMD) was significatively lower than in controls (63,0 ± 12,8 vs. 100,0 ± 18,6 and 87,3 ± 10,4 vs 100,1 ± 10,8 respectively). At spine level there were significative differences in TBM, BMC and BMD (72,2 ± 15,2 vs 100,0 ± 19,8; 81,1 ± 15,3 vs 100,0 ± 16,2 and 89,5 ± 16,2 vs 100,0 ± 15,7 respectively). In hip (neck, trocanter and Ward's triangle) the same high significative differences were observed. Stratificating the patients according to age, those under 10 6/12 years have a significantly lower BM, being these girls a risk group of severe osteoporosis and fractures in adult life.