73 L.TATO*,G.PIEMONTE*,A.DAL MORO*,P.PIZZO*,V.VIGI*, S.VOLPATO*(Intr.by R.Rappaport).Pediatric Clinic-

Verona,Newborn Pat. Ferrara - Italy.

A longitudinal study on plasma Somatomedin activity and Cor-
tisol blood levels in newborn.

Plasma Somatomedin activity(SM) and cortisol were studied in
8 premature,5 small for date and 6 at term newborns during
the 3 first days of life. SM was measured by porcine carti-
lage bioassay, Cortisol by radioimmunoassay.SM at first day
was detectable in 3 premature, 1 small for date and 3 at
term newborns.SM increased at second day and it felt at 3th
day in premature and small for date infants. All at term new-
borns pursued the SM increase in the 3th day too.The sub-
jects with not detectable SM had very high circulating cor-
tisol and those with low.circulating cortisol showed always
detectable SM levels.Small for date and premature plasmas
showed an inhibitory effect on plasma standard, removed by
heating at 60°C for 20 minutes. The high cortisol levels and
in addition a termolable substance(only in premature and
small for date newborns) may explain the SM behaviour in
newborns at the first days of life.

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Morphometric studies in undescended testes.

The volumetric fractions (VF) of various types of testi-
cular tissue and the mean tubular diameter (MTD) were de-
termined in biopsies from 134 cryptorchids aged 3.5-16.9
years and in a normal material (67 autopsies). In the
normal group VF of spermatogonia A was relatively stable
in all age groups, whereas VF of the total spermiogenesis
increased sharply after 10 years. In the patients the
mean values of both these parameters were markedly decrea-
sed in all age groups. VF of tubular tissue was relative-
ly stable in childhood and increased after 10 years both
in the normals and the patients. In the youngest patients
the testicular volume, the volume of tubular tissue per
testis, and MTD were decreased whereas the volume of inter-
stitial tissue per testis was normal. After 10 years of
age MTD was decreased in the patients. None of the para-
meters investigated showed significant differences between
cases with high (intraabdominal and canalicular) and low
retention. The results indicate that reduction of the
spermatogonial and Sertoli cell lines are present in re-
tained testes from 3.5 years of age. At puberty the matur-
ation of tubular tissues is inhibited in untreated retain-
ed testes.

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Decreased Steroid Glucuronyl Transferase Activity
in Hypothyroidism of Children Aged 1-6 Years.

In 12 hypo- and 32 euthyroid children the distribution
of urinary steroids on the fractions of free steroids(F),
glucuronides(G),and sulfates(S) was studied.F,G,and S were
separated on SEPHADEX LH-20 before cleavage of conjugates,
steroids determined by capillary-GLC.Although G remained
the main fraction in hypothyroidism the percentage of S
and F was about twice as high as in euthyroid patients,es-
pecially after ACTH-stimulation.Apparently the decrease in
glucuronyltransferase activity was more pronounced than
that in the sulfotransferase system,a situation like in
newborns,indicating retarded development rather than tempo-
rarily reduced activity in hypothyroidism.The fact that it
took more than 4 weeks after start of therapy with thyroid
hormone for the %-distribution of steroids to equal that
of healthy children supports this contention.

hypothy=a/ hypo+ACTH=b/2-4weeks therap=c/euthyroid=d
F 11,4±3,9 13,5±3,6 6,4±1,5(II,III) 4,8±1,5(V)
G 80,0±7,6 74,3±6,3(I) 84,5±5,3(II,III) 89,9±2,4(IV-VI)
S 8,5±5,3 12,2±4,0(I) 10,0±3,8(III) 5,4±2,2(IV-VI)
p 0,01:I=a-b;II=a-c;III=b-c(Wilcoxon-test)/IV=c-d;V=a-d;
VI=b-d(untied t-test).

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Louvain, Belgium.

Arrest in growth and pubertal development in anorexia
nervosa.

Anorexia nervosa starting at the onset of puberty may
induce an arrest of development. We report the cases of
five children, four girls and one boy, who started anore-
xia nervosa at the age of 12 to 13 years. Investigations
were performed one to four years after the onset of weight
loss. Clinical, psychological and biological signs are ty-
pical of anorexia nervosa. Decreased growth rate, delayed
bone maturation and arrest of pubertal development is docu-
mented in all cases. The serum HGH response to standard
stimulation tests is normal. The serum LH and FSH response
to LHRH stimulation is immature and comparable to that of
unpubertal children. Reversion from pubertal to immature
pattern of gonadotropin response is documented in one case.

J. M. TANNER and R. H. WHITEHOUSE*, Department of
Growth and Development, Institute of Child Health,
University of London.

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The Diagnosis and Treatment of Children with Short Stature
(film)

This film is for paediatric endocrinologists and dys-
morphologists. It is in three self-contained sections:

Part 1 is entitled "The range of normal and the diagnosis
of short stature" and discusses variations in normal
growth and the diagnosis of small/delay.

Part 2 is entitled "Growth hormone deficiency" and
discusses aetiology, diagnosis and treatment.

Part 3 is entitled "Differential diagnosis of short
stature" and discusses various other causes of short
stature, such as Silver-Russell Syndrome, Turner's
Syndrome, achondroplasia and the dysmorphic syndromes.

The film lasts for one hour.

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SHBG concentration in girls during puberty.

Using a membrane filter method the role of Sexual Hormone Binding Globulin
(SHBG) during female sexual development was investigated. Details on the method
and values in boys have already been reported. Before puberty there is no sex differ-
ence in SBHG levels. With the onset of puberty, SHBG levels progressively decline
in males, but do not show significant changes in females (range P1 to P4 8.8-7.0 ug/
ml) until stage P5 when a significant decline (3.7 ug/ml) is observed. In adult females
SHBG values show marked scatter resulting in a higher mean concentration. The post-
pubertal scatter found in this study might be related to the cyclic fluctuations in the
plasma concentration of sexual steroids, and therefore, to changes in the oestrogen
to androgen ratio.