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Plasma growth factors measured as thymidine activity
in children with average and tall stature.

It was previously demonstrated that 3H Thymidine
uptake into human lectin-activated lymphocytes is
related to plasma GH-dependant growth factors, thymi-
dine activity (TA) thus measuring plasma somatomedin
activity as defined by Daughaday et al.

TA has been measured in 20 children with average
stature (A) and 37 constitutionally tall children
with 2 to 4 SD advanced height (T), age 4 to 16 years.
In both groups, mean $\pm$ SEM TA is higher after age 10,
and the difference is significant when TA is related
to bone age (BA): in A, 0.78 ± 0.06 U/ml before BA 10,
 1.02 ± 0.05 beyond BA 10 ($p < 0.005$); in T, $0.75 \pm$
 0.05 U/ml before BA 10, 1.05 ± 0.05 beyond BA 10
($p < 0.01$). Yet, there was no significant difference
between T and A children. In both groups TA was
correlated with BA ($r = 0.572$, $p < 0.001$).

In individual subjects, no correlation was found
between TA and sulfation activity. The discrepancies
between these two biologic measurements of plasma
growth activity could be of physiologic significance.

97 T.P. FOLEY, W.H. MURPHY*, S. LA FRANCHI, V. PIDCOE*.
Comparison of Primary TSH (pTSH) to Primary T4 with
Confirmatory TSH (T4/TSH) Screening for Congenital
Hypothyroidism (CH), Pittsburgh, PA and Portland, OR.

Our recent survey of 38 states in U.S. & 10 countries indicated
that 4.45 million(m) infants were screened for CH by 12/31/79, &
1048 cases of primary hypothyroidism detected (incidence of 1 in
4245) on the 1st specimen. Screening methods varied: (1) T4/TSH:
3.73m, 835 cases, 1 in 4466 incidence; (2) pTSH: 0.5m, 157 cases
(1 in 3239); (3) both T4 & TSH: 0.2m, 56 cases (1 in 3695). In
summary, programs using pTSH screening detected a higher incidence
of CH than programs using T4/TSH screening. When confirmatory TSH
is tested on the lowest 10-15% of T4 values, the incidence of CH
approaches a maximum comparable to pTSH screening. In programs
collecting 2 routine specimens, 169 cases were detected in 0.78m
newborn (nb) specimens (1 in 4600) & 22 cases in 0.6m followup(fu)
specimens (1 in 26,000). Of the 38 cases of CH that were missed,
12 had normal T4 levels & 4 with primary CH had normal TSH levels.
For 3 years we have tested both nb & fu specimens by 2 methods:
(1) T4/TSH (TSH test on lowest 3% of T4) & (2) pTSH. Normal TSH is
 < 30 μ U/ml of serum in two 3 mm blood discs. 60% of nb specimens
were obtained by age 2 days, & the false positive (elevated TSH)
rate was 0.9% whereas the rate in nb specimens collected after 2
days & in all fu specimens was $< 0.2\%$, comparable to pTSH cord
serum screening. Summary: For specimens collected before 48h of
age, higher TSH cutoff levels(30-60 μ U/ml) must be determined to
avoid false positive recall rates, yet identify all infants with CH.

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(introduced by H. Helge)

IODINE EXCRETION AND THYROID FUNCTION IN MOTHERS AND THEIR
NEWBORNS AFTER USE OF PVP-iodine IN OBSTETRICS.
Screening for hypothyroidism shows that use of PVP-iodine as des-
infecant may cause TSH elevations in the newborns. In order to
examine if these elevations are a pathological symptom, we deter-
mined TSH, T4, T3 and FT4 and the iodine excretion on days 1, 3 and 5
in 23 mothers and their newborns after use of PVP-I. for different
periods of time before delivery (7-140 h, mean 25h). Results are
shown below (mean values, mother = M, newborn = NB, day = D).

	D1	M	NB	D3	M	NB	D5	M	NB
TSH μ U/ml		3.4	11.8		2.8	14.8		2.1	11.3
T 4 μ g %		12.3	9.7		12.5	13.7		13.1	14.4
T 3 ng/ml		1.5	0.4		1.7	1.7		1.8	1.9
I μ g %		780	333		73	--		29	83

Four NB had elevated TSH levels, but T4, T3 and free T4 were normal.
Two other NB showed hyperthyroid serum levels on days 3 and 5. None
of the mothers had TSH elevations or other impairment of thyroid
function. No correlation was found between duration of PVP-I. use
and iodine levels, nor between iodine levels of mothers and new-
borns. Finally, there was no correlation between iodine levels and
impairment of newborn thyroid function. We conclude that the
newborn thyroid is very sensitive towards iodine excess, but we
don't think that these infants need treatment.

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Adverse effect of iodide containing contrast agents
on newborn thyroid function.

Administration of iodine containing antiseptic agents
during perinatal life is known as the most frequent
reason for transient hypothyroidism in newborns. Since
we have detected one newborn infant who developed tran-
sient hypothyroidism after angiocardigraphy (ACG), we
investigated thyroid function in 30 babies with conge-
nital heart disease before and after ACG. Informed con-
sent was given by the parents. RESULTS: After ACG with
20 ml diatrizoate 76% (iodide content 200-400 μ g) 6 new-
borns developed transient hypothyroidism within 5 days.
In 3 of them renal function was reduced for a few days.
Thyroid function returned to normal within 2 weeks in 4
newborns and after 2 weeks in 2 infants. All infants
with transient hypothyroidism were less than 4 weeks of
age. Infants older than 4 weeks did not develop hypothy-
roidism, but showed a slight increase of their T4- and
T3-serum concentrations 2 to 4 weeks after ACG.

CONCLUSION: Newborn infants develop transient hypothy-
roidism after ACG in more than 80%. Even the administra-
tion of relatively small doses of iodide may be followed
by an acute Wolff-Chaikoff-Effect. This may be due to
immaturity of thyroid autoregulative function.

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Centre of Postgraduate Education, Warsaw and
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Decreased serum TSH and T₄ levels in newborns with
severe hyperbilirubinaemia.

Serum TSH and T₄ was determined radioimmunologically
in 125 newborns with severe hyperbilirubinaemia before
blood exchange /HB/ and in 220 normal newborns /with-
out pathological findings in other blood parameters/as
control group /K/. The results are shown in the table:

Day of life	1-st	2-nd	3-rd	4-7-th
TSH μ U/ml $\bar{x}$	7.9	3.8	2.3	1.1
T ₄ nmol/l $\bar{x}$	196	211	197	179
n	18	28	31	48
TSH μ U/ml $\bar{x}$	30.1	12.8	6.3	2.3
T ₄ nmol/l $\bar{x}$	218	236	224	195
n	34	32	34	120

It seems that TSH response to birth-stress is in HB di-
minished. It is also possible that bilirubin blocks TRP.
Therefore total T₄ is lowered but free T₄ is elevated
and exerts greater feed-back blocking of thyrotrophs.

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Idiopathic isolated central hypothyroidism associated
with congenital ichthyosiform desquamans erythrodermia.

We report an idiopathic isolated central hypothyroidism, supposed as
consequence of TRH deficiency, in a child with congenital ichthyosi-
form desquamativa erythrodermia, first seen by us at the age of 10y.
D.V. was born preterm, vaginally, after a referred uncomplicated
pregnancy. Skin lesions appeared during the first days of life and
stunted growth and feeding problems within the first months;
intellectual development appeared as normal and a normal sexual
development started at the age of 12 1/2y. Arginine, insulin, TRH and
LHRH tests excluded GH, PRL, ACTH, FSH or LH deficiency. Two TRH tests
showed Δ TSH = 3.7 and 3.3 μ U/ml ($n.v. = 12.5 \pm 4.0$) with basal TSH values
= 1.2 and 0.9 μ U/ml respectively; T₄ and T₃ basal levels were 6.6 μ g/
dl (8.9 $\pm$ 2.2) and 123.3 ng/dl (163.4 $\pm$ 29.7) respectively; Δ T₃ was 33.7
ng/dl (65 $\pm$ 38). Radioimmunological assays were performed in triplicate
(Biodata, Milan). Electrolytes, karyotype, skull radiography were normal.
A thyroidal therapy (130 mg/day of desiccated thyroid) was started
when he was 13 4/12y. old and after 3y. variations of clinical param-
eters were: delay of height and bone age in respect to chronological
age from -6 to -4y. and from -5 to -2 1/2y. respectively; height velocity
grew from 4.8 to 10.0 cm/y.; skin lesions did not improve. T₃ serum
reduced increase supports a TRH more likely than a TSH deficiency.