M. BROYER, N. HATEMI*, M. DECHAUX*, C. RICOUR
INSERM U.30 Paris. Balance of H ions in infants
on TPN.

Standard technique for H ion balances were carried out in 6 infants on TPN. Balance periods varied between 4 and 7 days. Blood chemistry and acid-base parameters remained in normal limits during the study period. The mean body input of H ions (1.05 mEq/kg/24 h.) was balanced with the mean net acid excretion (1.16 mEq/kg/24 h.) and SO₄ excretion was correlated with N retention. The comparison of our results with the ones obtained in infants on enteral nutrition by other authors revealed that TPN increases the mean urinary organic acid excretion by nearly x 3.5 and that of SO₄ by nearly x 6. But quantitatively urinary organic acid constituted the most important fraction of endogenous acid production (4.95 mEq/kg/24 h) and it was balanced with the metabolisable non measured anions in the perfusion (5.46 mEq/kg/24h). It is concluded that an adequate daily nitrogen and calorie intake (400 mg N/kg/24 h and 100 cal/gk/24 h respectively) the use of a well-balanced mixture of cationic and anionic aminoacids (Vamin) and the intravenous supply of metabolisable non measured anions to compensate the endogenous organic acid production played the most important rôle in the satisfactory H ion balance of our infants.

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Plasma renin activity and aldosterone
concentration in children.

Plasma renin activity (PRA) was measured by
radio-immunoassay of Angiotensin I(AI)
production; plasma aldosterone concentration
(P_{Aldo}) was also measured by radio-immuno-
assay.

It was found that in healthy children on free
diets over the age of 1 year, the upper limit
of PRA was about 500 pg AI/ml/hr, but in
infants much higher levels were observed, up
to 3000 pg AI/ml/hr. There was a positive
correlation between PRA and sodium turnover,
estimated from the urinary sodium/creatinine
ratio. The upper limit of P_{Aldo} in normal
children aged over 1 year was 16 ng/100ml.
but in the infants was 60 ng/100ml.

PRA was in the range from 1000-2000 pg AI/ml/
hr in several hypertensive children, without
P_{Aldo} necessarily being above the upper limit
of normal. On the other hand, in children
with salt-losing states PRA was much greater
usually over 10,000 pg AI/ml/hr, and in the
majority of these children P_{Aldo} was over
30 ng/100ml.

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Urinary cyclic AMP in renal polyuric
disorders.

It is widely held that adenosine-3'-5'-
monophosphate (cyclic AMP) is a mediator of
the hormonal effect of antidiuretic hormone
(ADH) in renal tubules. A recent report (J.
Clin. End. Metab. 1972, 35, 35-47) demonstrated
a 70 percent increase in urinary cyclic AMP
in normals after infusion of ADH. To see if
the sensitivity of the method could be
increased, we gave ADH together with theo-
phyllamin, an inhibitor of cyclic AMP degra-
dation, but urinary cyclic AMP remained the
same as without theophyllamin. We studied
normal children and children with renal poly-
uric disorders: urinary tract abnormalities,
interstitial nephritis and inheritable
nephrogenic diabetes insipidus (NDI). ADH
(15 mU/min) was infused and urinary cyclic
AMP and osmolality measured. Patients with
NDI do not show increment in either parameter,
whereas other patients show increased values
in one or both. The measurement of urinary
cyclic AMP is of some value in the differen-
tial diagnosis of renal polyuric disorders.
The etiologic diagnosis should, however, be
confirmed by renal biopsy and renal X-ray.

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Thromboembolism in the Nephrotic Syndrome.

Thromboembolism is a rare but often serious
and sometimes fatal complication of the nephro-
tic syndrome in childhood. An inquiry amongst
the members of the ESPN and other European
paediatric nephrologists disclosed 60 patients
(1.8%) with thromboembolic complications of
3377 children with a nephrotic syndrome during
1962 - 1971. We reviewed anamnestic and clinical
as well as pathological-anatomical find-
ings and laboratory data from 56 of these
patients.

Thromboembolism may be localized in almost
any part of the circulation. The histological
examination of the kidneys of 48 patients showed
predominantly minimal changes (26 cases) or
focal glomerular lesions (15 cases). The children
are especially susceptible to this compli-
cation during the active phase of the N.S. (22
patients with first manifestation of the disease,
33 cases during relapse) while having generalized
massive edema (33 patients). As most
of these children have received steroid treat-
ment somewhere during the course of their disease,
it is not possible to exclude the possi-
bility, that steroids play an etiological role
for this complication. Immobilization and secondary
infections as well as hypertension and azotaemia
do not seem to be an important pre-
disposing factor.