37 children with congenital infections showed a marked increase of γ-globulin during the first two years. One half of these patients revealed 1-5 oligoclonal IgG-fractions (comprising o.6 - 15.5 % of total protein), that persisted for at least several months.Though γ-globulin was increased only in 3 out of 6 patients with multiple sclerosis, 2-5 oligoclonal IgG-fractions (5.5 -2o.4 % of total protein) appeared in all cases. In 16 children suffering from subacute sclerosing panencephalitis oligoclonal IgG (5-7 subfractions) amounted to 2o.1 - 56.1 % of total protein. Furthermore,1-5 oligoclonal IgG bands (8.2 - 35.5 % of total protein) were found in the CSF of 5 children during prolonged non-bacterial meningitis, in 2 patients with chronic aseptic meningoencephalitis, and in 2 cases of subacute bacterial meningitis. Since oligoclonal IgG occurred only in the CSF of cases of subacute or chronic neurologic infections (with the exception of leukemia and medulloblastoma) this finding could mean persistance of antigen in the CNS and pathologic invasion of lymphocytes into the CNS with selective proliferation of antigen-stimulated clones.

45 G.RABENDING*,K.JAHRIG, F.HEYDENREICH*, R.PERLWITZ* and M.KOCH* Univeristy of Greifswald,GDR.Interval analysis of repetitive complexes in SSPE.

The time intervals between biologic phenomena(f.e.between R-waves of ECG or respiration excursions) are not always very constant. Nevertheless such events are called "periodic".In fact the train of intervals depends on periodic and superimposed random factors(=noise).A significant task of an analysis of biologic rhythms is to separate the really periodic signals from the basic noise, and to visualize them clearly.The knowledge of the periodicity of repeated phenomena is interesting for identifying a possible functional pace-maker.It is a presuppossition to start a cross correlation for statistical investigations of the kind of interrelations of different periodic events.A suitable method to detect such a periodicity is the spectral analysis.

We used it to answer the question, if the repetitive complexes(RADERMECKER complexes) in the EEG of SSPE are indeed "periodic" rhythms.After discussion of some methodological problems of autocorrelation and the variance spectra, the results of a statistic analysis of 18 tracings from seven children with SSPE are demonstrated.It could be shown, that the intervals between the typical high voltage complexes (wave bursts)are intraindividually highly constant.Over a longer time during the course of disease the lenght of intervals has a tendency to decrease.The diminution of the time span between the complexes follows a potence equation with negative exponent.The demonstrated way to analyse autocorrelations is generally useful for examinations of repeated, probably periodic biologic phenomena, which can mathematically be described as "point processes".

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Bartter's Syndrome: 10 cases in childhood. Results of long term Indomethacin therapy including effects on Prostaglandins in urine.

Ten children with Bartter's Syndrome were studied. Their ages at diagnosis ranged from 3 months to 15 years. There was an equal sex distribution. A wide spectrum of severity in terms of clinical and biochemical features was found. In addition to those findings considered diagnostic of the condition, some patients were shown to have hypercalaemia, hypophosphataemia, hypercalciuria, nephrocalcinosis, rickets and urine acidfication defects. Two affected children were siblings. Six children were treated over prolonged periods (6 - 24 months) with Indomethacin. The effects of treatment were monitored in several ways, including regular measurement of PRA, plasma aldosterone, G.F.R. and PGE2, PGF2α and PGFM in urine. Remarkable clinical and biochemical improvement was documented including catch-up growth in all cases. In spite of this, PG findings in urine were inconsistent and tolerance to Indomethacin appeared to develop in some children. Although PG synthetase inhibitors have revolutionized treatment of Bartter's Syndrome it is questioned whether excess renal PG production is the primary cause of the disorder of just another epi-phenomenon.

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Parathyroid function and serum calcitonin in children receiving phenytoin drugs.

In various bone diseases(b.d.) associated with secondary hyperparathyroidism, serum calcitonin (ct) levels are high, which seems to inhibit demineralisation. In pigs, phenytoin inhibits ct secretion. To further elucidate the pathogenesis of anticonvulsant b.d., serum ct levels and several parameters of parathyroid function were studied in 29 anticonvulsive treated children and 35 controls. In patients, mean values of serum calcium and phosphate, urinary calcium/creatinine (Uca/cr), and phosphate reabsorption ($TmPO_4/GFR$) were significantly decreased, serum alkaline phosphatase (AP), parathyroid hormone (iPTH) and urinary cyclic AMP (UcAMP) were significantly increased. AP and iPTH were correlated to UcAMP ($p<.001$), whereas iPTH and UcAMP were inversely correlated to Uca/cr ($p<.001$ and $p<.05$). Serum ct levels were significantly decreased (median 100 pg/ml, range<100-520 pg/ml; controls: median 150 pg/ml, range <100-740 pg/ml, $p<.05$). ct levels were low (≤200 pg/ml) even in 6 patients with obvious hyperparathyroidism (iPTH 6.2-12.1 pmol/l, controls: < 5.3 pmol/l). Thus, drug induced reduction of ct mediated inhibition of skeletal resorption is probably an additional pathogenetic factor in anticonvulsant bone disease.

48 P. WIELAND,* U. TRECHSEL,* K. VETTER,* H. SCHNEIDER,* A. HUCH,* H. FLEISCH * and J.A. FISCHER * (Intr.by: A. Prader) Univ. of Zurich and Berne, Switzerland. Perinatal calcium homeostasis: Maternal and cord serum concentrations of Ca, Mg, vit.D-metabolites and parathyroid hormone (PTH).

Ca, Mg, 25(OH)D, 24,25- and $1,25(OH)_2D$ and PTH (estimated with antibodies which mainly recognize intact PTH-(1-84)) were measured in the serum of normal non-pregnant adults (C) as well as at delivery. Maternal venous (M) and umbilical venous (UV) and arterial (UA) blood was obtained from normal mothers and neonates at term (N=12). Mean levels (±SE) amounted to:

	Ca	Mg	25(OH)	24,25-	$1,25(OH)_2D$	PTH
	mg/dl		nmol/l			ng/ml
C	9.0±0.1	2.06±0.06	54.0±4.3	4.48±0.68	0.10±0.01	0.20±0.02
M	9.1±0.1	1.62±0.05	45.4±9.8	1.46±0.22*	0.31±0.04*	0.26±0.03
UV	10.4±0.1*	1.68±0.03	26.7±5.8*	0.55±0.16*	0.12±0.01*	0.07±0.01*
UA	10.5±0.1	1.72±0.04	26.6±5.3	0.61±0.19	0.16±0.02*	0.07±0.01

* $p<0.02$ to <0.001 vs. preceeding line.

$24,25(OH)_2D$ was lower and $1,25(OH)_2D$ higher at the end of pregnancy than in non-pregnant controls, presumably in response to raised fetal demands of calcium. Vitamin D-metabolites were lower in cord than in maternal blood possibly because of a diffusion barrier across the placenta and/or different affinities of binding proteins. However, higher levels of $1,25(OH)_2D$ in UA than in UV suggest that the fetus also participates in the synthesis of $1,25(OH)_2D$. Finally serum levels of calcium were higher in UV than in M and fetal PTH was undetectable or low.

49 E. SULYOK^, F. VARGA and I.F. CSABA^ Department of Obstetrics and Gynecology University of Pécs, Hungary. Postnatal development of renal sodium handling in premature infants.

In an attempt to estimate the contribution of the specific defect in proximal and distal tubular reabsorption of Na to renal salt wasting,fractional Na excretion,distal tubular Na delivery and distal tubular Na reabsorption were determined using clearance method in 11 healthy premature infants. The mean birth weight and mean gestational age was 167o g /range:114o-212og/ and 31.7 weeks /range:27-35 weeks/, respectively. The study was performed on the 7-th day and in weekly intervals thereafter up to the 6-th week of life.It was demonstrated that Na clearance and fractional Na excretion decreased significantly with increasing postnatal age /p<o.ool/. There was no significant alteration in either osmolar or free water clearances.Distal tubular Na delivery steadily decreased from 4.96±o.66/mean±SE/ in the first to 3.3±o.41 ml/min/loo ml GFR in the 6-th week of life /p<o.o5/. Distal tubular Na reabsorption was 69.5±2.36 % in the first week then rose significantly to reach a value of 83.7±1.85 % in the second week /p<o.ool/and remained practically unchanged thereafter. It is suggested that the more rapid improvement of distal tubular Na reabsorption in premature infants might be resulted from the forced stimulation by the excessively activated renin-angiotensin-aldosterone system.

50 G. SCHOECH* and J. THOMALE* (Intr. by K.H. Schäfer). Universitäts-Kinderklinik,Hamburg, West Germany. A new method for the rapid analysis of normal and modified nucleosides and nucleobases in various body fluids.

Recently, normal and modified urinary nucleosides and nucleobases have been shown to reflect processes of proliferation, differentiation, and malignant transformation[1]. To realize the theoretical implications of those findings and ideas for clinical applications it was necessary to develop a highly sensitive, rapid, and reliable analytical procedure. Several prefractionation steps were combined to isolate bulk nucleosides and nucleobases simultaneously. Finally, both were analysed by reversed phase HPLC (detection limit: 10^{-13} mole per substance; about 1ml of urine, serum or spinal fluid is sufficient for a complete analysis). The registration and comparison of the analytical data has been automated on the basis of creatinine-, age- and sex-correlated regression equations of normal values. Actually, 17 normal and modified nucleosides and nucleobases are routinely measured. We use this method presently to control effects of cytostatic therapy as well as normal growth velocity.

Schoech, G. et al. Helv.Paediat.Acta, Suppl. 38, 1-171, 1977.