167 LAV/HTLV-III NEUTRALIZING ANTIBODIES IN MOTHER/INFANT PAIRS FROM HIGH RISK GROUPS FOR AIDS

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Mother and infant pairs from high risk group for AIDS were screened for the presence of antibodies to LAV/HTLV-III by ELISA and the positive sera confirmed by radioimmunoassay (Western-blot). The sera were also tested for the presence of neutralizing antibodies using a method based on the inhibition of the cytopathic effect of the virus. Of the 19 mother/infant pairs studied, 15 (group A) were from birth (from delivery to 2 weeks of age) and 4 (group B) were within the first 3 months. 14/15 (group A) and 4/4 (group B) babies studied were positive for specific IgG antibodies to LAV/HTLV-III both by ELISA and Western blot. No correlation was found between the neutralizing titres of the mothers and those of the babies at birth. Although neutralizing antibodies are IgG, which cross the placenta, in most of the cases studied the neutralizing titres of the babies were low compared to those of the mothers. At present 7/14 and 2/4 follow-up data on 9 sero-positive babies are available for the presence of LAV/HTLV-III antibodies immunological and clinical features. From these data does not appear to be a relationship between the presence of neutralizing antibodies and the clinical status of the babies. However, a longer follow up period is required to confirm this finding and this study is in progress.

168 MONOCLONAL ANTIBODIES FOR THE EARLY DETECTION OF ERYTHROCYTE MEMBRANE DEFECTS IN FATAL HEMOLYTIC ANEMIA AND HEMOLYTIC UREMIC SYNDROME (HUS)

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For the early detection of membrane desialization due to the in vivo action of microbial neuraminidases with a high risk for fatal hemolytic anemia or hemolytic uremic syndrome 4 monoclonal antibodies were generated. They are recognizing different epitopes of the main surface glycoprotein of human red cells after treatment with bacterial toxin, as determined by immunoblotting of erythrocyte ghost proteins and an analysis of asialoglycophorin A binding in a liquid phase radioimmunoassay. Using these mAb, the red cells of 113 children were investigated, who suffered from parainfectious hemolytic anemia or acquired membrane abnormalities associated with erythrocyte polyagglutinability. The reactivity of the mAb in hemagglutination tests and fluorescent staining of target erythrocytes was restricted to 3 cases of neuraminidase induced HUS. In these patients immediate initiation of adequate treatment (hemodialysis, exchange transfusion for toxin elimination and substitution of neuraminidase inhibitor, antibiotic therapy) could prevent the fatal course of the disease, normally causing its high mortality rate.

169 TREATMENT OF HYPERAMMONEMIC COMA BY LASIX AND FORCED DIURESIS.

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Exchange transfusion and/or dialysis are the usual treatment of hyperammonemic coma with its high mortality rate. In this Table we present the effect of forced diuresis (FD) and Lasix, 1-3 mg/kg i.v., on 4 infants (age 2-90 days) with hyperammonemic coma due to either hypercitrullinemia (1,2) or organic acidemia (3,4).

Case	Coma stage	Intake/output ml/kg/d	Ammonia mMol/dl pre FD post FD % change	Period
1	V	656 / 432	496 136 72.6	4
2	IV	126 / 64.8	436 150 65.6	24
		126 / 65.5	54 87.6	48
3	IV	347 / 305	1460 840 42.5	3.5
			116 92	24
			38 97.4	48
4	III	403 / 321	600 388 35.3	1.75
		228 / 157	244 59.3	10.5
			42 93	34

After FD and Lasix ammonia decreased significantly by 35% in 1.75 hours and 65 to 92% at 24 hours and remained within normal range with diet and appropriate drug therapy. All patients recovered from coma after therapy. We conclude that the treatment of hyperammonemic coma in infants with FD and Lasix is an effective, fast and non-invasive method.

170 HYPERINSULINAEMIA AGGRAVATES THE ADVERSE EFFECT OF OBESITY ON PHYSICAL FITNESS.

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Treadmill stress testing was carried out according to the Bruce protocol on 18 control (C) and 36 obese (O) children (11.6 ± .2 vs. 10.9 ± .4 yr; mean ± SEM). Body fat (BF) was 13.5 ± 1.8 and 37.1 ± .7 % in C and O respectively. Significantly higher systolic blood pressure, decreased physical working capacity (PWC-170/kgLBM) and symptom limited aerobic capacity (VO2max ml/min/kgLBM) were observed in O compared to C. The analysis of ECG revealed significantly longer QT intervals corrected for heart rate in obese. PWC-170/LBM and VO2max/LBM was further decreased in hyperinsulinaemic (HI) compared to non-hyperinsulinaemic (NHI) obese children (Insulin: 251 ± 32 vs. 83 ± 13 pmol/l). The most relevant data are shown below:

	C	O	p	NHI	HI	p
PWC-170/LBM	3.1	2.2	**	2.6	1.6	**
+ SEM	.3	.3		.2	.2	
VO2max/LBM	71.6	52	***	57.5	45.8	*
+ SEM	3.1	2.2		3.2	3.8	

Plasma insulin levels correlated with PCW-170/LBM and VO2max/LBM (r = -.56, -.5; p < .01). Besides adiposity high plasma insulin level might be another factor worsening physical fitness of obese children.

171 LOW BIRTHWEIGHT CHILDREN - HOW TALL ARE THEY AT THREE?

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As part of an ongoing study of all babies with a birthweight of 501-2000 grams inclusive born at or transferred into Hammersmith and Queen Charlotte's Maternity Hospitals, London, in a one-year period from June 1979 to May 1980, 176 children were weighed and measured at birth and three years. They were classified as small for gestational age (SGA) (birthweight below tenth centile for gestational age) or appropriate for gestational age (AGA). Three-year-old heights and weights are expressed as standard deviations (SD) from the norm using both real age (RA) and age corrected for prematurity (CA). Thus two values were obtained for each child. Using RA the mean weight at three years was -0.9 SD and mean height -0.4 SD, but after correction the mean weight was -0.7 SD and mean height 0.0 SD. AGA children and children with birthweights over 1500 g were significantly taller (p < 0.001). Sex and length of gestation did not appear to affect height at three years. In general the children's height was higher than weight on the growth chart; the higher the height or lower the weight the greater the discrepancy. These findings suggest that in as far as three-year-old height can be used to predict adult height, these low birthweight children will not differ from the general population as adults.

172 FLUIDITY AND LIPID COMPOSITION OF INTESTINAL BRUSH BORDER MEMBRANES (BBM) FROM NEWBORN AND ADULT RATS.

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Fluidity of BBM from small intestine of newborn (Nb, n=4 litters) and adult (Ad, n=4) rats was studied by steady-state fluorescence polarization. Fluorescent probes were diphenylhexatriene (DPH), a cationic analogue (TMA-DPH), and a set of n-(9-anthroxyl) fatty acids (nA; n=fatty acid carbon numbers 6,7,9,12, and 16, respectively). Fluidity of BBM was increased in Nb rats with all the respective probes (fluidity ~ 1/r; r=anisotropy measured).

Probe	6A	7A	9A	12A	16A	DPH	TMA-DPH
Nb (r):	.167	.161	.143	.099	.045	.225	.281
(±SD):	.002	.001	.002	.002	.001	.005	.006
Ad (r):	.183	.176	.163	.120	.063	.248	.300
(±SD):	.003	.003	.006	.004	.002	.005	.003

p < .001 < .001 < .001 < .001 < .001 < .001 < .001
Lipid fluidity was increased in all depths of the outer leaflet of Nb BBM. Cholesterol/phospholipid molar ratio was decreased in Nb (0.86±0.16) vs. Ad (1.43±0.19) BBM (p < .001). Cholesterol/protein ratio was decreased (p < .005) and phospholipid/protein ratio was increased (p < .05) in Nb. These differences in fluidity and lipid composition may reflect functional maturation of BBM, possibly influencing binding and permeability characteristics for macromolecules such as food protein or viral/bacterial pathogens.