17 INTRAVENTRICULAR HEMORRHAGE AS A CAUSE OF HYDROCEPHALUS IN PREMATURE NEWBORNS.

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Ultrasonography has been widely used to detect intracranial disease, specially intracranial hemorrhage, in premature neonates and has been shown to be highly reliable in this group of patients.
This method has also been used for the diagnosis and follow-up of hydrocephalus and multifocal necrosis of the white matter(periventricular leukomalacia), both of which are serious complications of intraventricular IV and cerebral hemorrhages.
Eighty seven infants admitted to the Newborn Care Unit of the Uruguayan Center of Perinatology from April, 1984 through December, 1985 were studied. Ultrasongraphy was performed in all neonates with birthweight less than 1500 g and in all cases with suspected I/V hemorrhage or hydrocephalus regardless of birthweight.
IVH was identified in 48% (42 cases) of the total population studied.Its severity was graded using Papile's classification.

INTRAVENTRICULAR/PERIVENTRICULAR HEMORRHAGES

Degree	Number of cases	Percentage
I	13	31
II	11	26
III	7	17
IV	11	26
Total	42	100

One of every three newborns had transient or permanent hydrocephalus and of these, only one required ventriculo-peritoneal shunt.

18 CONTAMINATION OF NEWBORNS WITH ENTEROPATHOGENS.

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Fecal excretion of enteropathogens was studied in breastfed newborns (NB) of low high socioeconomic levels (SEL) born vaginally or by delivery cesarean section. Within the first 7 days of life 5 samples were collected for rotavirus detection (ELISA, electronmicrosoopy and gel electrophoresis in 225 NBs; 5 samples were obtained in 57 of the 225 NBs for enteropathogenic bacteria (routine laboratory techniques); and 3 samples were collected in 39 of the 225 to identify enteroparasites (Burrow's technique). Nearly all samples from the high SEL were collected while the NBs were still in the maternity wards; in the low SEL, samples obtained between days 4 and 7 were collected at home. At least one enteropathogen was detected in 21% of all BNs (4.4% rotavirus, 14% enteropathogenic bacteria and 2.6% enteroparasites). No significant differences were observed in relation to SEL or type of delivery, except for rotavirus ($p < 0.01$). 90% of NBs testing positive for rotavirus were from a low SEL, born by cesarean section and on the same maternity ward during winter 1985. Rotavirus detected included complete and single shell viral particles and cores found between days 4 and 7 of life. All rotavirus detected shared the same electrophoretic pattern which were also found in infants admitted at the same time for acute diarrhea. 9 enteropathogenic bacterial strains were isolated between days 3 and 7 in 8 NBs (5 E.coli classic serotypes; 1 toxigenic E.coli, 1 S.paratyphi, 2 Campylobacter coli). G.lamblia was identified in one NB of high SEL whose mother had negative fecal parasitological studies. Fecal excretion of enteropathogens lasted for up to 3 days, ceased spontaneously and had no apparent repercussions on the NBs, who remained asymptomatic. Financed by I.D.R.C., Canada, (Grant 3-P-84-0099).

19 CARDIOVASCULAR FUNCTION DURING HEMORRHAGIC SHOCK IN THE NEWBORN.

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Hypovolemic shock is characterized by a decrease in the tissular blood flow necessary to satisfy tissue demands. There is no information regarding the hemodynamic changes that occur during spontaneous evolution of the hemorrhagic shock in the newborn. Therefore, we measured arterial blood pressure (BP) heart rate (HR), blood gases,cardiac output (CO) and its distribution (radiolabelled microspheres) before, 45 and 90 minutes after the beginning of the hypovolemic shock in 11 chronically catheterized newborn lambs (6-14 days old). Hypovolemic shock was produced after the withdrawal of enough blood until the systemic BP was reduced to 50% of its basal value. The results were ($\bar{x} \pm$ SD):

		basal	45 min	90 min	
BP	(mmHg)	87.6 ± 6.0	45.2 ± 3.1*	47.8 ± 2.7*	*p<0.001
HR	(l/min)	237 ± 17	171 ± 7 *	190 ± 19 *	*p<0.001
CO	(ml/min x kg)	229.3 ± 20	190.5 ± 22	105.9	

Shock produced a persistent bradicardia. In addition, there was anuria, a progressive lactic acidosis, an increase in PO2 and a decrease in PCO2, bicarbonate and hematocrit. Blood flow to heart, brain, adrenals and liver increased while blood flow to carcass (skin,muscle,bone) and kidneys decreased after 45min. However at 90 min, the increase in blood flow to heart, brain, adrenals and liver reverted, while there was a further decrease in blood flow to carcass and kidneys. We conclude that:1. A rapid and important bradicardia occurs in response to hypotension in the neonatal life. 2. CO shows a redistribution with increased blood flow to heart, brain and adrenals. 3.This redistribution is not mantained after 90 min of shock, indicating a break down in the mechanisms of regulation. Grant B 2183-8623,DIB,U.de Chile.

20 ENDOGENOUS OPIOIDS(EO) ROLE IN THE REGULATION OF THE BASAL ARTERIAL PRESSURE AND HEART RATE DURING THE PERINATAL PERIOD.

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Naloxone (NLX), an antagonist of EO receptors,reverts hypotension during shock demonstrating the EO role in cardiovascular regulation during stressful conditions. Although high plasmatic concentrations of EO are found in the fetus and newborn, it is not known whether they play a role in arterial blood pressure (BP) and heart rate (HR) regulation in basal conditions. Therefore, we chronically catheterized 13 fetal sheep (0.8-0.9 of gestation) and 6 newborn lambs (5-12 days old) in order to study if NLX (bolus 0.5-1mg/kg + infusion 20ug/kg x min x 30min) modify the basal BP and HR in the fetus and newborn. Catheters were placed into femoral artery and vein and carotid artery. Five days after surgery we monitored BP and HR 30 minutes before and after the NLX injection. The results were (mean ± SD):

	basal	naloxone	
Fetal BP (mmHg)	44.1 ± 9.3	46.8 ± 10*	$p < 0.01$
Newborn BP (mmHg)	84.2 ± 4.5	85.6 ± 5.7	NS

Heart rate did not change during the experiments. These results show that there are developmental changes in the cardiovascular response to EO in sheep. EO parthicipate in the basal tonic regulation of BP in the fetal but not in the neonatal life, suggesting a decrease in sensitivity to EO in the neonate in spite of the high plasmatic concentration of EO in the newborn period. Grant 2183-8623 DIB, Universidad de Chile.

21 BODY COMPOSITION ACCORDING TO ADEQUATION OF STATURE OF ADOLESCENT OF DIFFERENT SOCIOECONOMIC LEVELS (SEL).

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The influence of genetic and environmental factors on stature is well known. However it is difficult to study separately the influence of each factor. It has been shown that the lower SEL the higher influence of environmental factors. Nutrition and physical activities influence height and lean and fat body mass. We studied the composition of adolescents with normal and retarded height in different SEL. Children aged 10-16 years of both sexes, in Tanner stages II to V, were studied (n = 3211). Height for age (H/A), weight for height (W/H), lean and fat arm mass (LAM and FAM) were evaluated using NCHS tables; SEL, using Graffar modified scale and breast and genital development, using Tanner stages. Growth failure was diagnosed when H/A was less than 95% of adequate and normal stature when between 95 and 105%. Growth retarded boys of low SEL in early Tanner stages had less LAM and FAM. Boys of normal stature and low SEL had low LAM in the early and late pubertal stages but increased FAM in the early stage. Growth retarded girls in varying SEL exhibited no differences in LAM and FAM until the onset of puberty when those of low SEL exhibited increased FAM. Girls of normal stature and low SEL had low LAM and FAM in the early stages and exhibited increased FAM in the late stages of puberty. We conclude that environmental factors can influence body composition.

22 BODY COMPOSITION ACCORDING TO NUTRITIONAL STATUS OF ADOLESCENT OF DIFFERENT SOCIOECONOMIC LEVELS (SEL).

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An adequate evaluation of nutritional status must consider weight for height (W/H) and also lean and fat body mass. The influence of environmental factors such as nutrition and physical activities upon lean and fat development is well known. A positive correlation between physical and nutrient intake with SEL has been described. We were interested in studying the influence of the socioeconomic level upon lean and fat body mass of schoolage children in different puberal stages with and without weight deficit. From a sample of 6234 schoolage children of both sexes, aged between 6 to 16 years, 3061 adolescents in II to V stage of puberal development were selected. Height for age (H/A), W/H, lean and fat arm mass (LAM and FAM) were evaluated according to NCHS tables; SEL according to Modified Graffar scale and breast and genital development according to Tanner stages. It was considered a normal body weight when W/H is between 90 to 110%, body weight deficit below 90% and body weight excess over 110%. There were differences in LAM and FAM according to SEL in early and late puberal stage in underweight boys. Overweight boys had differences in LAM according to SEL. Underweight girls had differences in LAM and FAM according to SEL, overweight girls had differences only in LAM according SEL. An increased percentage of lean mass in upper SEL either in over or underweight adolescents was found in both sexes. The possible etiologies of these results are discussed.