1398 THE EFFECT OF INTRAVENTRICULAR BLOOD UPON REGIONAL CEREBRAL BLOOD FLOW IN THE NEONATAL LAMB. M.G. Karlowicz, R.C. Koehler, R.J. Traystman, and M.D Jones, Jr. The Johns Hopkins Hospital, Baltimore, Md. 21205

Severe neurologic deficit often follows neonatal intraventricular hemorrhage. One possible mechanism of brain injury is focal ischemia secondary to vasospasm (N. Engl. J. Med. 304:886, 1981). We studied 6 unanesthetized lambs aged 8-11d. to ascertain the effect of unilateral intraventricular blood (IVB) upon regional cerebral blood flow (CBF) and on cerebral vascular responses to hypoxia and hypercapnea. Four ml. of fresh lamb blood was placed into the lateral ventricle of anesthetized lambs at 2-4 d. of age. Six days later, when derangements should be seen (J. Neurosurg. 48:173, 1978),catheters were placed under pentobarbital anesthesia into the left ventricle, brachiocephalic artery, sagittal sinus, and abdominal aorta. Animals were studied on the first postoperative day. CBF was measured with radioactive microspheres. Each animal had measurements in room air (PaO_2=86± 6 mmHg (±S.D.); $PaCO_2$=38±3 mmHg), hypoxic hypoxia (PaO_2=34±6 mm Hg; $PaCO_2$=37±3 mmHg), and hypercapnea (PaO_2=105±8 mmHg; $PaCO_2$= 55±4 mmHg). CBF to the cerebral hemisphere with IVB was compared by paired-sample t test to the side without IVB. Blood flow in room air (P>0.50), hypoxia (P>0.50), or hypercapnea (P>0.20) was not altered by IVB. Caudate nucleus blood flow was also not affected in room air (P>0.50), hypoxia (P>0.20), or hypercapnea (P >0.20). IVB does not have any effect at 1 wk. upon baseline CBF or hypercapneic or hypoxic responses. Our data do not support the hypothesis that IVB leads to derangements of the cerebral vascular bed. (NIH Grant HD 13830).

1399 FETAL GROWTH IN A GROUP OF NORMAL CHILEAN NEWBORN INFANTS. Gabriela Juez, Patricio Ventura-Juncá, Eduardo F. Lucero, (Spon. by Ivan D. Frantz III). Catholic University School of Medicine, Dept. of Pediatrics, Santiago, Chile.

We have observed an abnormal low number of SGA infants (2%) using Lubchenco's intrauterine growth curve. Consequently, we planned a prospective study to get our own pattern. Normal infants born to mothers with normal pregnancies and reliable dates entered in the study. Among 6750 live births occurred between Jan. 1/78 and Jun. 30/81, 3313 (49,9% males) met the selection criteria. Data management was done using a computational system designed by the authors. Birth mean weights and percentiles were calculate at each week of gestation (in grams).

GA.wks.	N	10	25	50	75	90	$\bar{x}$	SD
35	21	1950	2200	2370	2585	3100	2475	389
36	43	2270	2630	2865	3150	3400	2917	424
37	170	2550	2800	3120	3370	3620	3092	428
38	500	2790	2980	3210	3500	3740	3244	389
39	907	2900	3120	3350	3620	3860	3372	383
40	1012	2970	3190	3450	3710	4000	3468	396
41	474	3100	3290	3495	3760	4040	3528	374
42	129	3020	3280	3550	3780	3980	3549	405

These percentiles and mean weights are consistently higher than Lubchenco's data. Applying our curve to all infants older than 35 weeks born in the period of the study (6447), the number of SGA infants increased from 2% to 11%, showing its adequacy for assesing chilean newborns' intrauterine growth.

1400 A NEW APPLICATION OF TRANSCUTANEOUS BILIRUBINOMETER Vang Kamtorn, Anita Baldomero, Amelia Bautista, Shyan Sun (Spons. F. Behrle) UMD-New Jersey Medical School, Div. Neonatal-Perinatal Medicine, Newark, N.J.

Transcutaneous bilirubinometer (Tc Bilimeter, Minolta Co) has not gained in popularity partly because variation in skin colors (racial difference) and phototherapy affect its reading. Nevertheless it is small, portable and easy to use. We apply this handy machine for direct reading of bilirubin from serum collected in the cuvette (normally used for American Optical bilirubinometer). Blood was collected by heal puncture in a capillary tube, centrifuged and the supernatant serum was collected in a cuvette to be read. Tc Bilimeter was pressed against the cuvette on a white paper background, and a reading (digital number) obtained. A simultaneously collected blood sample was sent for total serum bilirubin determination by conventional diazo method. A total of 66 paired Tc bilimeter readings and total serum bilirubin levels from 36 newborn infants were compared. Linear regression analysis revealed y=0.9x+0.79. r=0.85, standard error of estimate 1.86 p<0.001. There is a good correlation between direct meter reading and total serum bilirubin level within a standard error of less than 2 mg which is acceptable by most laboratory standard. The fact that a direct digital reading from this machine can be used as a predicted serum bilirubin value without having to use conversion tables is extremely convenient and time saving. We conclude that this Tc bilirubinometer can be used as a reliable bedside tool to measure bilirubin directly from serum rather than from skin.

1401 WEIGHT CHANGE PATTERNS IN NEONATAL ABSTINENCE. Sylvain M. Weinberger, Stephen R. Kandall, Tatiana M. Doberczak, Wolfram Loewenstein, John C. Thorton, Jonine L. Bernstein (Spon. by Walter L. Henley) Depts of Pediatrics, Beth Israel Medical Center & Biostatistics, Mt. Sinai School of Medicine, New York.

The impact of maternal drug dependency on weight changes after birth was assessed in 131 passively addicted infants. The maternal population included 40% who took methadone alone and 56% who abused other drugs concurrently with methadone. Abstinence was treated with phenobarbital (PH) in 53 infants and with paregoric (PA) in 45 infants by random design; the remaining 33 infants (C) did not require treatment to control mild abstinence signs. The three groups were comparable as to sex ratio, ethnic distribution, gestational age, and birth weight.

Adjusting for birth weight and caloric intake, both PA and PH treated groups of addicted infants lost more weight than the untreated group on days 9-10, at which point untreated babies were discharged; PH-C=94 grams($p < .01$),PA-C=96 grams($p<.01$). On day 21 the PH group had gained significantly more weight than the PA group($p<.01$). When patterns of weight loss and gain were corrected for abstinence severity based on a standard scoring system, both significant differences disappeared completely (r^2=.91 on day 9, r^2=.86 on day 21). These findings are consistent with the concept that severity of abstinence directly affects weight loss and gain within the first month of life. Infants requiring treatment for moderate or severe abstinence should receive caloric supplementation during that period.

1402 ASPHYXIA AS A CAUSE OF LACTOSE MALABSORPTION IN IDENTICAL PREMATURE TWINS. Martin S. Katzenstein, Stuart Berezin, Leonard S. Newman, Harry S. Dweck. New York Medical College, Westchester County Medical Center, Department of Pediatrics, Valhalla, New York.

Previous studies have shown lactose malabsorption to be a frequent occurrence in the premature infant. We analyzed breath hydrogen in two sets of identical prematurely born twins of 30 & 34 weeks gestation. Except for perinatal asphyxia in one infant all had uncomplicated antenatal and postnatal courses. The lactose intake was similar for each infant (g/kg).

Breath hydrogen determinations ($PPMH_2$) are listed below:

Twins		1' 5'Apgars	B.Wt.	30 Min	60 Min	90 Min	120 Min
Set I	A	6 7	960	1.7	4.7	0	0.2
(30 wk)	B	7 9	920	0.22	3.26	0	1.7
Set II	A	7 9	1920	8.74	5.79	11.70	14.65
(34 wk)	B	2 4	2020	16.12	8.70	41.26	56.04

The only asphyxiated infant (IIB) had higher peak breath hydrogen levels than its own twin (IIA) or twins I A & B. These elevated values are associated with lactose malabsorption.

Although the number of subjects in the study is small, the two sets of identical twins offer a unique opportunity to study the effects of asphyxia on lactose malabsorption in premature infants. These data in identical twins support our previous preliminary findings of lactose malabsorption associated with asphyxia in the newborn. The findings may have implications on the initial choice of feeding in asphyxiated premature infants.

●**1403** EFFECT OF EPIDERMAL GROWTH FACTOR ON LUNG LIQUID PRODUCTION AND CATECHOLAMINE BLOOD LEVELS IN FETAL LAMBS. Kathleen A. Kennedy, Patrick Wilton, Mats Mellander, Jorge Rojas, and Hakan Sundell. (Sponsored by Mildred T. Stahlman) Vanderbilt University School of Medicine, Dept. of Pediatrics, Nashville, TN. (Supported by HL 14214)

Epidermal growth factor (EGF) has been shown to accelerate fetal lung maturation, and it also has an inhibitory effect on gastric HCl secretion. Fetal lung liquid (LL) production is associated with an active Cl-transport. The effect of EGF on lung liquid production (LLP) was examined in fetal lambs with the impermeable tracer (^{125}I-albumin) technique. EGF given i.v. over a 4 hour period (½ injection, ½ infusion) in a total dose of 70 microg/kg to 6 fetal lambs at 0.6 to 0.95 of term resulted in a decreased LLP (6.1 ± 1.4 ml/hr vs 1.5 ± 1.1 ml/hr)*. During EGF, K^+ concentrations decreased in LL and plasma and remained low in LL 2-4 hours after infusion when plasma levels had normalized. Na^+ and Cl^- concentrations in LL did not change significantly. Heart rate increased from 156 ± 3 to 212 ± 11* b.p.m. Mean plasma concentrations of epinephrine increased from 27 ± 5 to 67 ± 13 pg/ml and norepinephrine increased from 257 ± 31 to 544 ± 69 pg/ml* (5 determinations in 3 lambs). EGF infusions (20 microg/kg) during beta-adrenergic blockade with propranol (1 mg/kg + 0.2 mg/kg/hr) reduced LLP in 5 lambs from 7.5 ± 1.8 to 3.3 ± 1.2 ml/hr* without associated tachycardia. Onset of EGF effect on LLP was within 1 hour. Liquid absorption was seen on 3 occasions. It is concluded that EGF given to fetal lambs will stimulate catecholamine secretion, and that EGF exerts an inhibitory effect on fetal lung liquid production which appears to be independent of a possible indirect catecholamine effect. *$p < 0.05$. Values are Mean ± SEM