1300 PROGNOSTIC FACTORS IN TERM HYPOXIC-ISCHEMIC ENCEPHALOPATHY. Neil N. Finer, Charlene M. Robertson, Kathrine L. Peters, Korvangattu Sankaran. Univ. of Alberta, Royal Alexandra Hospital, Dept. Pediatrics, Edmonton, Alberta.

Using data obtained from an initial cohort of 95 term infants with HIE, (hypoxic-ischemic encephalopathy) (1974-78) a predictive discriminant function was developed using factors which correlated significantly with outcome. Low 5 min Apgar, need for vigorous resuscitation, female sex, early age at onset of seizures and Sarnat stage 2 & 3 were associated with a poor outcome. The predictive analysis was calculated for an additional 43 term infants (1978-79) with HIE who had all been seen at least once in follow-up ($\leq$12 mo). This function predicted 56% of the latter cohort would have significant handicap or die. Follow-up revealed 21% were moderately handicapped and no child was severely handicapped or dead. Ninety-three percent were as predicted or better; only 3 infants (7%) were worse than predicted. Fourteen infants of the second cohort had a non-invasive estimate of cerebral blood flow (eCBF) using a plethysmographic jugular venous occlusion technique and there was a significant correlation between low initial eCBF (days 1-2) and poor outcome ($p<.001$). The only significant major alteration in therapy was the earlier and more aggressive administration of phenobarb to the second cohort (phenobarb levels Day 1= 2.0$\pm$1.44, Day 3= 2.4$\pm$0.92, Day 7= 3.1$\pm$ 1.2). Use of a discriminant predictive function will allow selection of infants with HIE who require detailed follow-up. Initial estimations of CBF may also prove a useful prognostic index and earlier phenobarb therapy may be associated with improved outcome.

1301 VITAMIN E, RETROLENTAL FIBROPLASIA (RLF) AND BRONCHOPULMONARY DYSPLASIA (BPD): CONTROLLED TRIAL IN THE LOW BIRTH WEIGHT NEONATE. Neil N. Finer, Kathy L. Peters, Reid F. Schindler, Garry D. Grant. Univ. of Alberta, Royal Alexandra Hospital, Dept. Peds & Ophth, Edmonton, Alta.

The effect of Vitamin E on the incidence and severity of RLF and BPD remains unclear. A prospective randomized controlled trial to further assess the role of Vit E in infants of 750-1500 gm to date includes 79 surviving infants (total n=105) of 29.5 wk (26-33 wk) gest., and birth weight 1130 gm (760-1500 gm). Randomization into groups was performed according to birth weight, (250 gm increments) initial FiO_2 and need for intubation. Parenteral Vit E was administered on a fixed schedule within 12 hr of birth to 30 of the infants for 4 wk for a total dosage of 430 units followed by oral administration if tolerating feeds, or continued parenteral administration until 6 wk of age. There was no clinically significant difference between the two groups. Vit E levels were not significantly different at birth but were significantly higher in the Vit E group throughout the first 6 wk (33.8 vs. 6.9 mg/l, $p<.001$).

(*$p<.05$)	BPD	MOST SEVERE RLF GRADE IN NSRY. 1 2 3 5 6	TOTAL	RLF GRADE AT DISCHARGE 2 4 5 6	TOTAL
CONTROL	33%	5 4 0 3 2	28.6%	6 1 2 2	22.5%*
VIT E Rx	30%	2 5 2 0 1	30%	2 0 0 1	6.7%*

Three infants in the control group and 1 in the Vit E group required cryopexy prior to discharge. Parenteral Vit E decreases the severity without effecting the incidence of RLF and appears to have no effect on the incidence or severity of BPD.

● **1302** RETROLENTAL FIBROPLASIA: EVIDENCE FOR A ROLE OF THE PROSTAGLANDIN CASCADE IN THE PATHOGENESIS OF OXYGEN-INDUCED RETINOPATHY IN THE NEWBORN BEAGLE.

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Aspirin adminsitration, at a dosage producing plasma levels within the human therapeutic range, caused marked inhibition of production of both vascular prostacyclin (a vasodilator) and platelet thromboxane (a vasoconstrictor) in Beagle puppies. In addition, aspirin treated, oxygen-exposed puppies developed retinopathy of significantly greater severity than their unmedicated, oxygen-exposed littermates. Direct ophthalmoscopic observations indicated that whereas sustained oxygen breathing produced retinal vasoconstriction in unmedicated puppies, retinal vessles of aspirin-treated littermates became more dilated or remained unchanged. It is postulated that retinal vasoconstriction may be a normal physiological mechanism to protect the immature retina from damaging effects of high blood oxygen levels; i.e. it may be a protective rather than a pathologic process in response to hypoxia.

Many of the vascular anomalies characterizing the human disease were found in the retina of the puppies, and several of the most serverly affected aspirin-teated puppies, grade III cicatricial retinopahy (falciform retinal fold) was also found. Production of cicatrical RLF for the first time in an animal eye answers a major criticism of the RLF animal model and thereby strengthens the confidence with which results from experimental animal studies might be extrapolated to the clinical situation.

1303 MEASUREMENT OF THE FACIES 1: MOUTH SIZE IN NEWBORN INFANTS. A.K. Fomufod and M.S. Rao (Spon. by Melvin E. Jenkins). Depts. of Peds. and Child Hlth., and Community Hlth. and Family Practice, Howard Univ. Col. of Med., Washington, D.C.

Recognition of abnormal facies at birth is generally based on qualitative assessment. This study was undertaken to establish quantitative values for mouth size at birth. The distance between the angles of the mouth was measured in 79 male and 75 female randomly selected black infants who were two or three days old. Measurements were made with a ruler only in relaxed babies; if mouth mobility or rooting occurred, the measurement was differed. Head circumference and gestational age (Dubowitz method) were also determined. Values for 120 appropriately grown (AGA) infants are shown below. There were no sex differences.

Gest. Age (Wks)	31-32	33-34	35-36	37-38	39-40	41-42
Number of Infants	13	18	12	21	49	7
Mean Size (cm)	2.34	2.47	2.68	2.83	2.97	3.15
S.D.	0.23	0.25	0.16	0.19	0.13	0.14

Fourteen small (SGA) and 12 large (LGA) for gestational age infants not included above were also studied. The results show an increasing mouth size with maturation. Significant correlation was found between mouth size and head circumference in all infants, AGA, SGA, and LGA. For the same gestation, SGA and LGA infants with smaller and larger head circumferences resp., also had smaller and larger mouths compared to the AGA. In addition to providing values for mouth size at birth, this study shows too that fetal head growth retardation and acceleration also affect mouth size.

1304 THE DEVELOPMENT OF VISUAL ORIENTATION IN PREMATURE INFANTS. Maria T. Frankenfield, Christian W. Stanley, Marsha A. Weinraub. (Spon. By Leonard J. Graziani). Temple University, Department of Psychology, Philadelphia. Jefferson Medical College, Thomas Jefferson University Hospital, Department of Pediatrics, Philadelphia.

Recent advances in neonatology have enabled an increasing number of small premature infants to survive. While research on the physiological aspects of prematurity has been abundant, little is known about the early developmental course of these infants. This study examines the development of visual orientation in premature infants and has important theoretical and clinical implications. All infants were assessed using visual items from the Brazelton Scale. In the first 3 groups were 36 AGA, premature infants, breathing room air by 32 weeks gestation. Group 1 was assessed at weekly intervals from 32 to 37 weeks and at 40 weeks. Groups 2 and 3 served as controls for repeated testing. In Group 4 were 12 full-term infants tested at 2 days. Visual orientation increased steadily from 32 to 40 weeks. At 40 weeks, Group 1 was no different in visual behavior from Group 4. However, infants tested less frequently (Groups 2 and 3) performed less well than Groups 1 or 4. Theoretically these results support that view that visual development is gradual but can be affected by experience. Clinically, intervention strategies to enhance visual orientation are recommended in light of previous studies demonstrating the effects of visual behavior on mother-infant interaction.

1305 EFFECT OF DURATION OF RUPTURE OF MEMBRANES IN THE PRETERM GESTATION. Thomas J. Garite, Roger K. Freeman Houchang D. Modanlou. Women's and Children's Hospital Memorial Medical Center of Long Beach, University of California, Irvine.

In the term gestation prolonged rupture of membranes (ROM) is associated with substantial increases in neonatal infections and perinatal mortality. Previous studies have not generally separated the effect of duration of ROM into term and preterm gestations. In a prospectively randomized study all patients were divided into expectantly managed (EM) and actively managed (AM) groups. In the EM group delivery occurred following spontaneous labor, maternal chorioamnionitis, or fetal distress. The AM group was actively managed (i.e. delivered) either after a mature Lecithin:Sphingomyelin ratio or a 48 hour course of corticosteroids. During a three year period there were 247 patients (112 in the EM, and 135 in the AM group). These two groups were well matched for gestational age, birth weight, maternal age and parity. In both groups combined, and in the EM group only, duration of ROM did not correlate with an increased incidence of chorioamnionitis, neonatal mortality or the incidence of neonatal pneumonia, septicemia and/or meningitis; nor was there a difference in these outcome parameters comparing durations of ROM less than and greater than 24 hours. It is concluded that prolonged ROM in the preterm gestation does not increase maternal or neonatal infectious morbidity nor adversely affect neonatal outcome.