

lipid kinetic studies were performed serially at intervals post ligation. Osmotic fragility studies show progressively increasing red cell sensitivity to osmotic lysis following ligation. Morphologically, a striking increase in "burr cells" is noted within 24-48 hrs. Elevation of erythrocyte membrane and plasma lecithin levels are noted by 3-4 days post ligation reaching maximal values near 40% of total membrane phospholipid by one week. Injection of P<sup>32</sup> at varying intervals from 2-16 days post ligation show the specific activity of phospholipid phosphorus in both red cells and plasma to be higher in the bile duct ligated animals than in controls. Rise in plasma P<sup>32</sup> activity precedes that of red cell and is maximal at 24 hrs. Red cell labelling shows a progressive rise over a 3-4 day period. Despite the quantitation difference of specific activity in experimental and control groups, the ratio of red cell specific activity: plasma specific activity is similar in both groups. These results suggest that the qualitative and quantitative alterations of erythrocyte phospholipid are directly related to the plasma phospholipid alterations.

**NEONATOLOGY**

Factors influencing predisposition to serious illness in low birth weight infants. LEONARD GLASS, NORMA KOLKO, and HUGH E. EVANS (Intr. by Gilbert W. Mellin). *Columbia Univ. Harlem Hosp. Ctr., N. Y., N. Y.*

Both retrospective and prospective studies of low birth weight infants born at Harlem Hospital and discharged to their mothers showed high rates of serious illness requiring rehospitalization during the first 9 months of life to be related to specific socio-medical factors. These factors were utilized in forming the following weighted prognostic index:

Failure of mother to receive prenatal care	2	0
Absence of father from home	1	0
Receipt of public assistance	1	0
Other children in the home	1	0

Thus a maximum score of 5 would indicate an infant at highest risk, and a minimum score of 0 lowest risk. In both series, infants scoring 4 and 5 had three times the rehospitalization rate of those infants who scored 0, 1 and 2 ( $p < 0.05$ ). Infants scoring 3 occupied an intermediate position. By prospective assignment of a score to each low birth weight infant, those at highest risk of inadequate follow-up care and rehospitalization may be identified prior to discharge from the nursery so that intensive medical, nursing and social services can be directed toward this high-risk group.

Hepatitis-associated antigen: A possible relationship with premature delivery. ELIZABETH M. SMITHWICK, ELEANOR PASCUAL, and SUAT CHENG GO. *Downstate Med. Ctr., Brooklyn, N.Y.*

Preliminary observations in 271 pregnancies indicated a high incidence of hepatitis-associated antigen (HAA) in mothers delivered at a large metropolitan hospital. On analysis, the frequency of HAA appeared to be higher in mothers of premature infants and these infants had a poor survival rate. The present study was designed to check these findings and to determine the incidence of HAA and the outcome of pregnancy in mothers with viral hepatitis. The outcome of pregnancy in apparently healthy HAA+ women was also analyzed. *Mothers of premature and fullterm infants.* Ninety mothers of infants

weighing 2000 gms or less were studied. The controls were 90 mothers of the nextborn fullterm infants. Three of the 90 mothers of prematures were HAA+; 3 of their 4 infants (1 set of twins) died. On the other hand, only 1 of 90 mothers of infants >2000 gms was HAA+; her infant survived. The overall 2.2% incidence is identical to that of the preliminary observation. *Mothers with clinical hepatitis.* Eight pregnant women with hepatitis were studied. Five of them were HAA+. Four of their 5 infants were premature; 3 of the prematures died. The infants (2 fullterm, 1 premature) of the negative mothers survived. *HAA+ mothers, apparently healthy.* A total of 7 mothers, HAA+ at delivery and with no history of hepatitis, were studied. Five of their infants (1 set of twins) were premature; 4 died. The 3 fullterm infants survived.

The data suggest that pregnant women who are HAA+, with or without hepatitis, tend to deliver prematurely and that their infants, if premature, have a high mortality rate.

Identification of the high-risk infant from placental phase microscopy. AVROY FANAROFF, SILVIO ALADJEM, F. LANE FRANCE, and MARSHALL KLAUS. *Case Western Reserve Univ. Sch. of Med., Cleveland, Ohio.*

Fresh placental tissue was studied by phase contrast microscopy following 125 normal and complicated pregnancies. 76 infants were full-term, 29 premature, 11 small for gestational age, and 9 from insulin-dependent diabetics. The fetal outcome was correlated with the placental score determined by grading pathological features in the 1) syncytium (hypoplasia, hyperplasia); 2) stroma (edema and intravillous hemorrhage); and 3) vascularity of the villus (congestion, ischemia and avascularity). A total score of 0 indicated normal features for gestational age. Significant correlation was observed between placental score, fetal mortality and morbidity. The mortality was 52% (11/21) with placental scores 6 or above; whereas only 2 of 104 infants with scores below 6 died ( $p < .001$ ). The table below shows results in infants below 37 weeks.

N	Survived	Score range	Mean score	Mean gest. age	Mean weight	Weight range (gm)
14	14	0-5.9	2.6	34.1	2029	1550-2820
15	4	6-23	11.1	31.0	1564	880-2180

19 of the 21 infants with scores of 6 or above presented with problems of extra-uterine adaptation including asphyxia, anemia, respiratory problems, in contrast to 12 of 104 with scores below 6 ( $p < .001$ ). All infants with severe hyaline membrane disease (arterial PO<sub>2</sub> <50 mm. Hg. in 100% O<sub>2</sub>) had scores above 6 and demonstrated placental vascular changes with syncytial hypoplasia. Phase microscopy of the placenta is a simple (ten minute) procedure and appears to be helpful in predicting fetal outcome.

Increased skin permeability in preterm infants. RICHARD L. NACHMAN, and NANCY B. ESTERLY. *Univ. of Illinois Coll. of Med., Ohio State Univ. Med. Sch.* (Intr. by Irving Schulman).

Localized cutaneous blanching of preterm neonates following the topical application of a 10% solution of Neo-Synephrine attests to the permeability of immature skin. Skin permeability was evaluated in 18 healthy infants between 30 to 40 weeks of gestational age. The response consisted of speckles or islands of